RoadNews for new roads

The WIRTGEN GROUP User Magazine for China // № 04

WIRTGEN VÖGELE HAMM KLEEMANN BENNINGHOVEN

The WIRTGEN GROUP
at Bauma China 2018:

Innovations moving China

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Dear Readers,

Here it comes again: Bauma China 2018 is in the offing! For us at the WIRTGEN GROUP, this is also the countdown to the launch of a host of innovations from WIRTGEN, VÖGELE, HAMM and KLEEMANN. This will include a number of product highlights such as the WIRTGEN W 195 large milling machine, the VÖGELE SUPER 1600 L Universal Class paver, HAMM Compact Line rollers and the new MOBICAT 120 Z PRO jaw crusher, the first model in the new PRO Line.

In addition, a line-up of other innovations testify to our detail-oriented focus on the requirements of our customers. For instance, WIRTGEN will be presenting DURAFORCE, an optimized milling and mixing rotor for cold recycling. Meanwhile, VÖGELE's redesigned Big MultiPlex Ski sensor system delivers high surface accuracy by simple means.

Sometimes, however, it is not just innovations that lead to success. After all, technology must earn its credentials in the field, too. One particularly impressive example of this is HAMM oscillation compaction technology, which has been hitting the mark with customers and users for 35 years – above all in China.

Incidentally, we will be presenting ourselves together with John Deere for the very first time at Bauma China. See page 4 to find out more and discover the ways in which you stand to benefit.

We hope you enjoy reading this fourth edition of the WIRTGEN GROUP RoadNews for China!

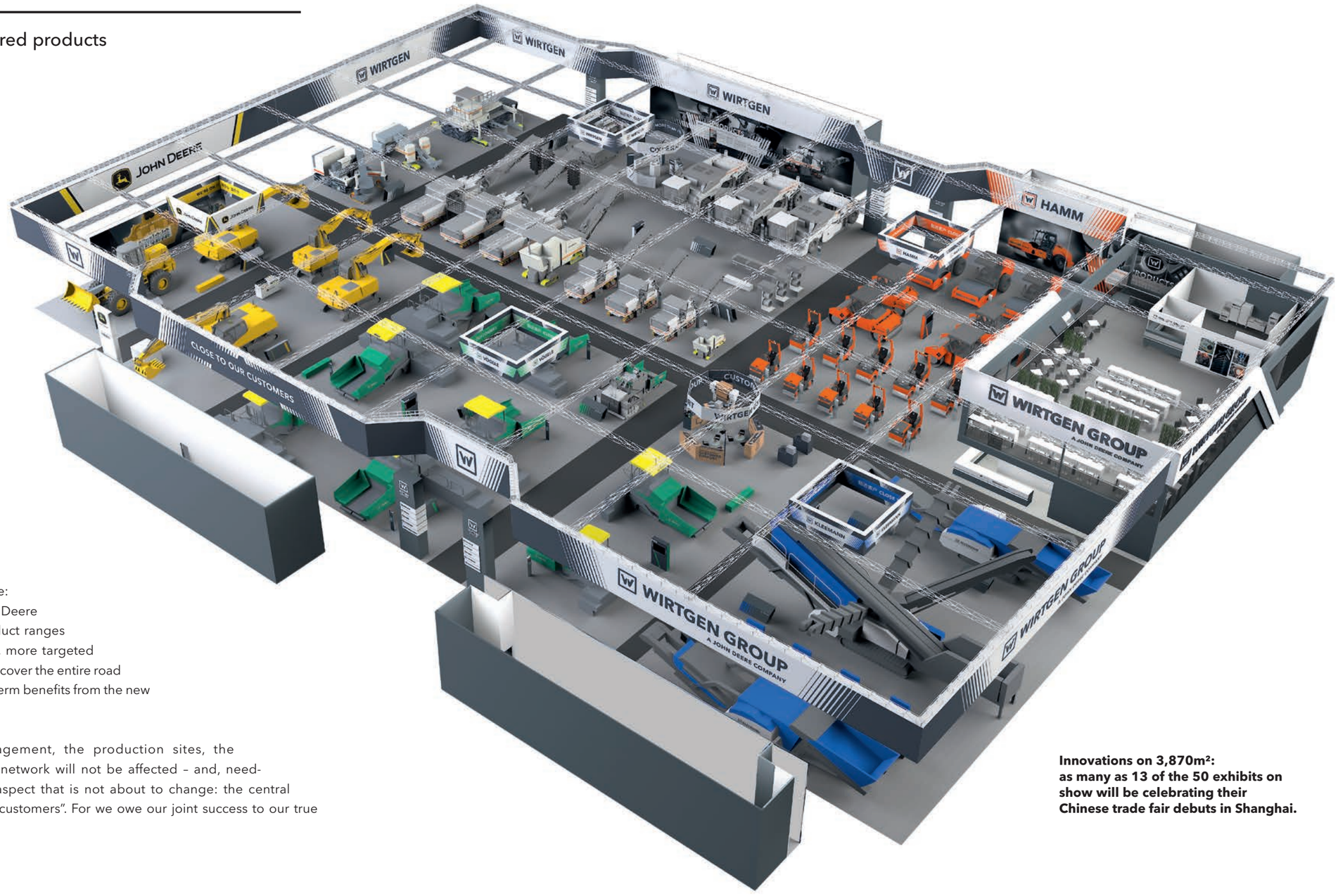
Best wishes,

Ulrich Reichert
CEO and Managing Director
WIRTGEN (CHINA)
Machinery Co., Ltd.

New solutions, time-tested customer proximity

The WIRTGEN GROUP will be showcasing tailored products for the Chinese market at Bauma China 2018.

bauma CHINA
WIRTGEN GROUP



Machines and plants that go the extra mile. Innovations that enhance efficiency and quality. And a team that makes all the difference when it comes to personal contact with our customers and users. The WIRTGEN GROUP is all set for Bauma China 2018 and looking forward to your visit.

Visitors to our exhibition area will immediately spot one new feature: the WIRTGEN GROUP will be presenting itself together with John Deere for the first time at Bauma China 2018. The complementary product ranges of the two companies create a wide array of synergies and new, more targeted advancement opportunities for our market-leading solutions, which cover the entire road construction process. Our customers and users stand to reap long-term benefits from the new scale of our enterprise in the road construction industry.

The existing WIRTGEN GROUP product brands, the management, the production sites, the employees and the WIRTGEN GROUP's own sales and service network will not be affected – and, needless to say, this also applies in China. And there is one more aspect that is not about to change: the central pledge of the WIRTGEN GROUP is and will remain "close to our customers". For we owe our joint success to our true closeness to customers.

Innovations on 3,870m²: as many as 13 of the 50 exhibits on show will be celebrating their Chinese trade fair debuts in Shanghai.

WIRTGEN DURAFORCE milling and mixing rotor:

A rotor for every requirement

Demanding and varying field conditions constantly bring new challenges for cutting tools used in cold recycling and soil stabilization. For the WR series, WIRTGEN have developed a solution that is more than a match for even the most extreme requirements in both applications: the new DURAFORCE milling and mixing rotor. This development marks the end of unprofitable tool changing times, maximizing lucrative operating times instead.

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With its centrepiece, the DURAFORCE milling and mixing rotor, the WR series guarantees success in cold recycling and soil stabilization.

Intelligent geometry

The optimal interplay of rotor, holder base, quick-change toolholder system and point-attack tools is essential if the milling and mixing capacity is to remain high in the long term. The use of high-grade materials and the intelligent geometry of the components ensure that the milling and mixing rotor has a long service life even in tough applications – such as stabilizing soil containing larger stones, stabilizing very abrasive material or granulating.

Optimum mixing results

The tool spacing and arrangement of the cutting tools on the milling and mixing rotor are tailored to the individual machine capacity, so that a high-quality mix is produced in a smooth, quiet milling and mixing process. The ingenious geometry of the holder base and the large diameter of the DURAFORCE rotor combine to produce a mixing chamber whose size varies according to the milling depth, ensuring that materials are mixed homogeneously. The high resistance to wear and durability of the holder base, combined with the streamlined geometry, minimizes resistance in the milling and mixing process. The optimal material flow ensures that the engine output is utilized highly efficiently while keeping wear to a minimum.

Long service life and maintenance intervals

All components of the cutting system are configured for a long life and low maintenance requirements. The point-attack tools of Generation Z have a high wear and impact resistance. The extremely long-lasting HT22 quick-change toolholder system minimizes interruptions to operation, while high-grade tool alloys give maximum strength to the holder base. The highly stressed quick-change toolholder systems on the corner ring segments of the DURAFORCE milling and mixing rotor are also easy to access, supporting rapid changes of the segments, should the need arise. »»

DURAFORCE

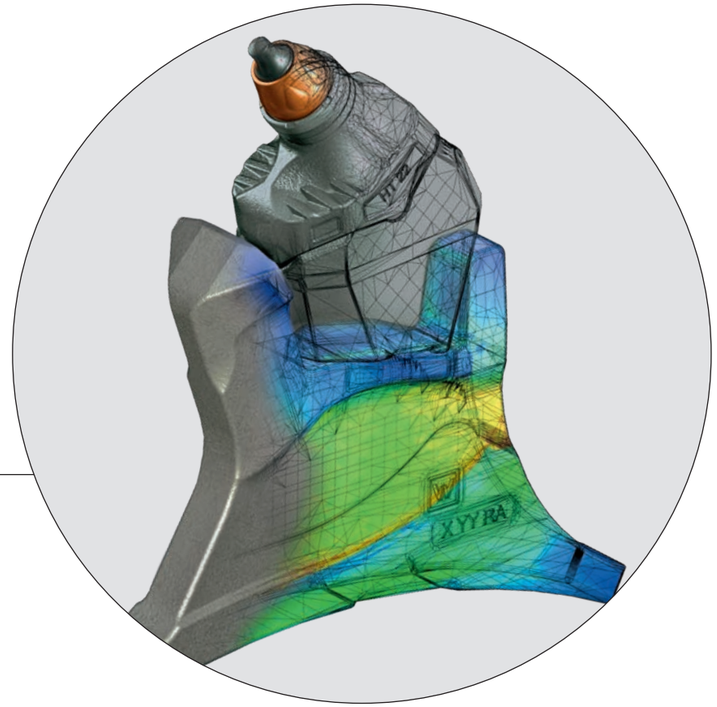
Meeting a wide variety of requirements

Demands on the milling and mixing rotor in soil stabilization applications:

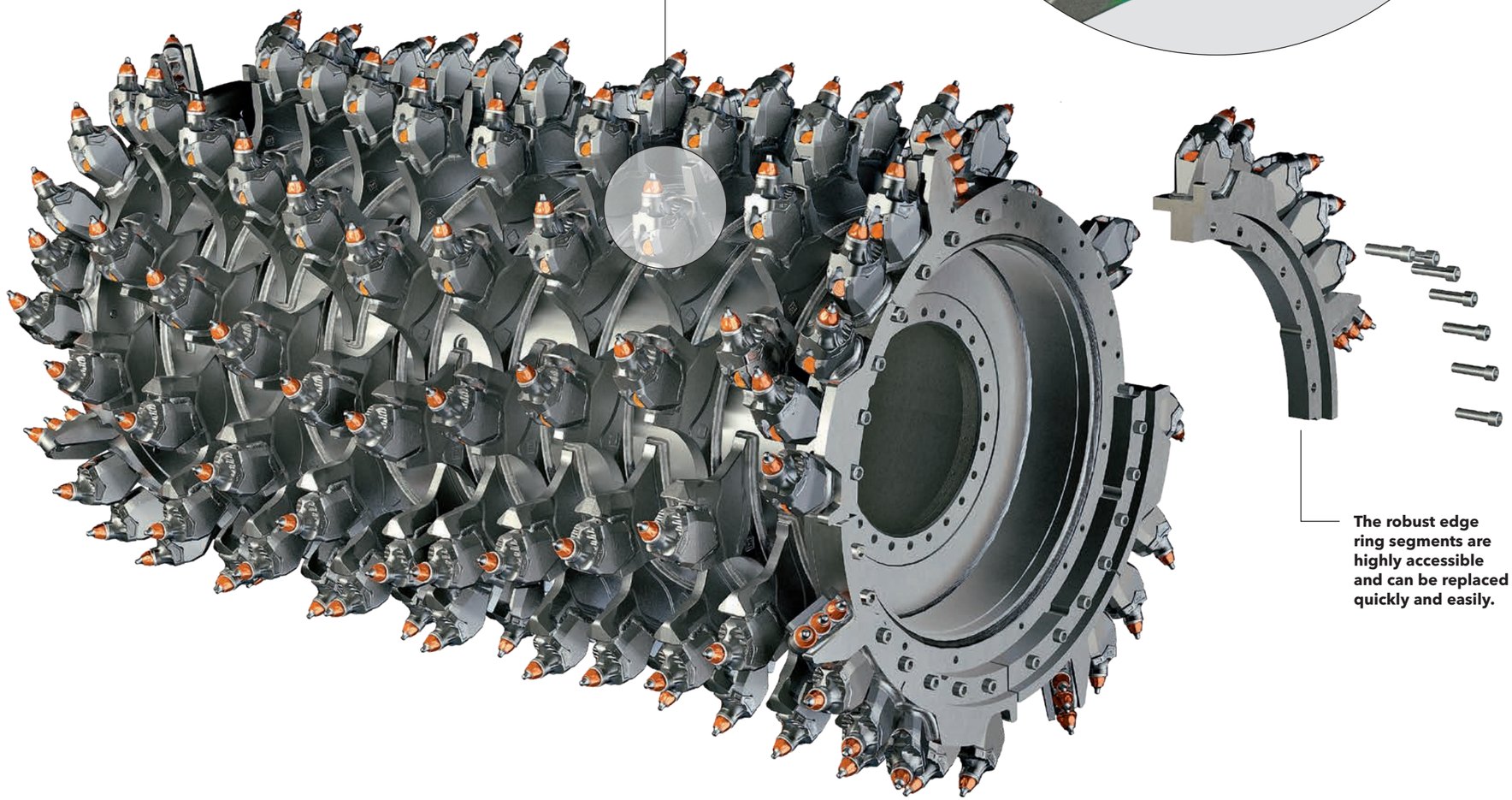
- Effective splitting and crushing of the soil to optimize binding agent effectiveness
- Uniform distribution and homogeneous mixing of binding agents and, where appropriate, water to produce a mixture of high strength
- Maximum cutting performance even in tough, hard soil to ensure high productivity and low fuel consumption
- High impact strength when operating in soils interspersed with coarse-grained rock to ensure extended uptimes
- High wear resistance in abrasive, cohesive soils to ensure maximum economic efficiency

Demands on the milling and mixing rotor in cold recycling applications:

- Steady milling process to prevent oversized particles and to ensure high-quality results
- High milling performance and low wear even in hard, abrasive material to ensure high economic efficiency
- Compliance with the specified grading curve to ensure the lasting stability of the new base layer
- Homogeneous mixing of the binding agents to ensure high adhesion (bonding strength) between the individual particles and thus maximum bearing capacity ///



Combined with the intelligent material distribution, the streamlined geometry of the holder bases allows an optimal distribution of forces – especially of peak loads resulting from transverse forces.



The robust edge ring segments are highly accessible and can be replaced quickly and easily.

Tried-and-tested forging process

The holder bases of the DURAFORCE milling and mixing rotor are given an intelligently designed 3D geometry using the tried-and-tested forging process. In addition to even load distribution and thus maximum stability, this process results in an optimum flow of material and homogeneous mixing of construction material.

New SUPER 1600 L: Reduce to the max

Robust systems, easy operation and uncompromising VÖGELE quality: these are the key features of the new SUPER 1600 L. They make this Universal Class tracked paver from VÖGELE an economical investment that is cost-efficient in operation.

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No compromises on quality: the SUPER 1600 L with extra large material hopper incorporates advanced VÖGELE technology modelled on the SUPER 1880 L.

Highlights of the new SUPER 1600 L tracked paver

- Maximum pave width of 7.8m opens up a wide range of paving applications
- Maximum laydown rate of up to 600t/h
- Transport width 2.55m
- Simple operation with the intuitive and innovative ErgoBasic operating concept
- Powerful Cummins diesel engine of the latest generation, with a rated output of 116kW and ECO mode
- Professional material management ensures high-quality paving
- High precompaction with the AB 480 TV Extending Screed with tamper and vibrators

New tracked paver is modelled on the SUPER 1880 L

The new SUPER 1600 L tracked paver follows in the footsteps of a successful role model: the SUPER 1880 L. Both pavers are members of VÖGELE's Universal Class, which can economically handle a wide range of small to mid-sized jobs. The 2 machines also incorporate a number of components identical to those of VÖGELE's pioneering "Dash 3" generation of SUPER pavers, such as the high-traction crawler tracks and the material conveying and auger systems. The main difference between the SUPER 1600 L and the SUPER 1880 L: while the multifunctional SUPER 1880 L paver is ideal for a high material throughput and wide pave widths, the SUPER 1600 L hits the mark in the growing road rehabilitation market segment.

Getting everyday tasks under control with the ErgoBasic operating concept

Even the best technology is of no use if it isn't intuitive and easy to operate. This conviction is what stands behind ErgoBasic. VÖGELE developed this operating concept based on the proven ErgoPlus 3 operating system on their "Dash 3" pavers, with the aim of making the ErgoBasic pavers just as quick, precise and intuitive to operate. At the heart of ErgoBasic are the robust paver operator's and screed operator's consoles. But ErgoBasic encompasses more: a remote control unit for operating the VÖGELE Niveltronic Basic System for Automated Grade and Slope Control, which can be combined with all "Dash 3"-generation sensors.

A perfect match for the SUPER 1600 L: The AB 480 TV Extending Screed

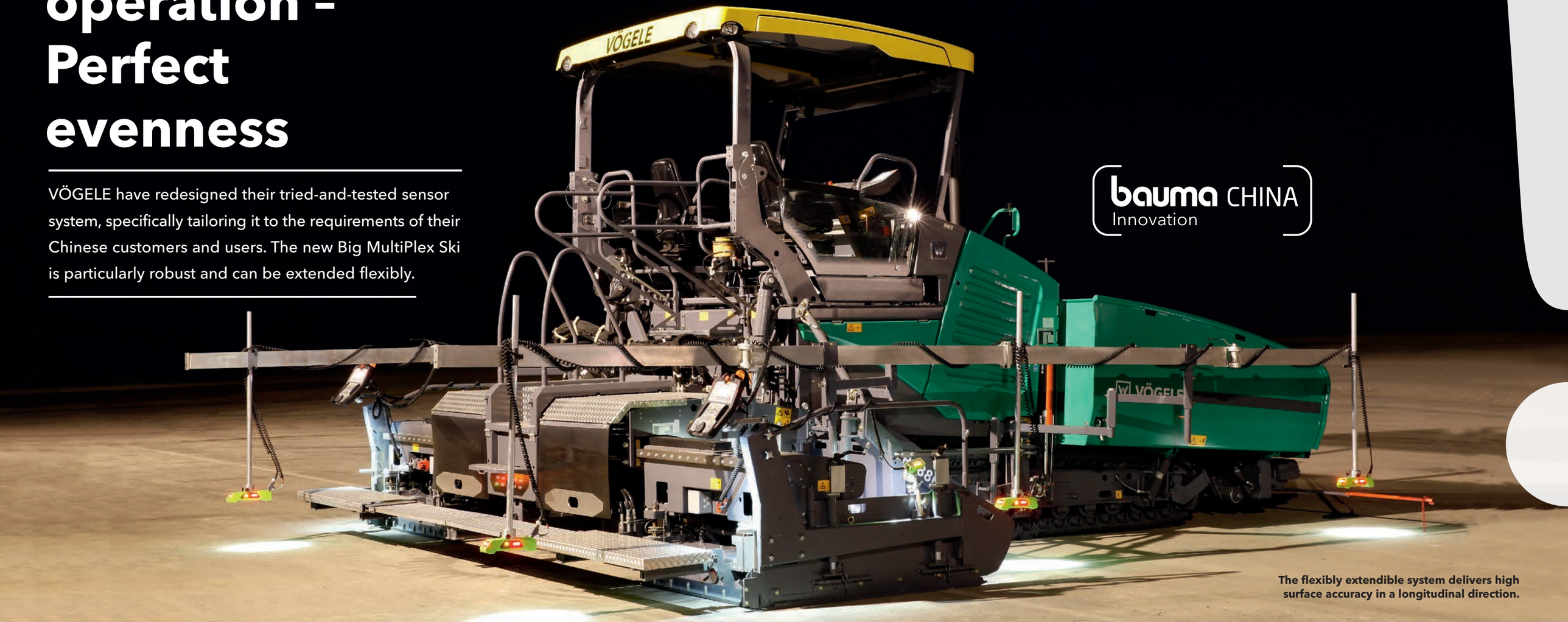
VÖGELE have the perfect screed for the SUPER 1600 L. The AB 480 TV Extending Screed can be infinitely extended to 4.8m thanks to a robust single-tube telescoping system. The maximum width of 7.8m is achieved with bolt-on extensions. The designation "TV" refers to the tamper (T) and vibrator (V) compacting systems, which achieve excellent degrees of precompaction across the entire pave width. The decisive advantage of VÖGELE tamper technology is evident in the quality: it guarantees impressively level paving results across the entire width. The electric screed heating also contributes to quality. It eliminates the need to transport gas cylinders and heats the screed plate and tamper quickly and automatically.

Read the Job Report on page 40 to see how the SUPER 1600 L performs in practice. ///

New VÖGELE Big MultiPlex Ski:

Easy operation – Perfect evenness

VÖGELE have redesigned their tried-and-tested sensor system, specifically tailoring it to the requirements of their Chinese customers and users. The new Big MultiPlex Ski is particularly robust and can be extended flexibly.



The flexibly extendible system delivers high surface accuracy in a longitudinal direction.

Measuring with up to five sensors

With its extendible aluminium beam, the redesigned Big MultiPlex Ski sensor system – ideal for levelling long irregularities – features variable ski lengths. The ski lengths extend between 5 and 13m. The well-conceived design makes for simple installation. The system is supplied as standard with three multi-cell sonic sensors. Depending on the application, up to five sensors can be connected to pavers of the "Dash 3" generation, while up to four can be fitted on pavers with ErgoBasic. The system operates according to the same principle, regardless of the number of sensors used: VÖGELE's Niveltronic Plus or Niveltronic Basic System for Automated Grade and Slope Control calculates a mean from the measurements recorded across the entire measuring range, for a high surface accuracy.

Quick start-up

Connecting the sensors to the VÖGELE Niveltronic Plus or Niveltronic Basic Systems for Automated Grade and Slope Control is likewise easy and follows the "plug & play" principle both with ErgoPlus 3 and ErgoBasic. The sensors are set up at the press of a button on the screed operator's consoles. That brings a key advantage: with VÖGELE, the sensor technology comes from the same source as the machine technology, so they are perfectly coordinated.

Clarity thanks to LED displays

A positioning aid in the form of an LED strip makes the set-up process much easier for users by notifying them of the correct distance from the reference. During paving, two further highlights of the new sensors ensure that the screed operators can concentrate entirely on the paving job: the LED display on the sensor, known as an LED cross, provides constant information on whether the target and actual values coincide – and if the light conditions are poor, or during the night, a powerful LED also integrated in the sensor helps the screed operator by brightly illuminating the reference to be scanned. ///

SUPER 1100-3 and SUPER 1103-3:

Compact design, leading technology

VÖGELE will be presenting the two Compact Class pavers at Bauma China, showcasing leading technology in a compact design. Both the SUPER 1100-3 tracked paver and the SUPER 1103-3 wheeled paver incorporate all the innovations of the cutting-edge „Dash 3“ paver generation.

Compact and manœuvrable: the SUPER 1103-3 is the smallest wheeled paver from VÖGELE. Thanks to the optional VÖGELE Pivot Steer steering brake, it has an outside turning radius of just 3.8m.

Leading technology for cost-efficient operation

Compact dimensions, a wide range of applications and an efficient drive concept – VÖGELE's Compact Class certainly raises the bar when it comes to cost-efficiency. The machines owe these qualities to a host of innovations, the first and foremost being their design. For instance, they have a slender transport width of 1.85m and a length of just 4.95m, making the SUPER 1100-3 and the SUPER 1103-3 the ideal choice for powerful performances in tight spaces. Since they can be used to construct or rehabilitate footpaths and cycle paths, farm tracks, minor roads and squares, a high capacity utilization is easy to achieve. A modern German-built 74.4kW Deutz diesel engine combines high laydown rates of up to 300t/h with a low fuel consumption, which can be further reduced by operating in ECO mode. This feature further extends the longevity of the machines. What is more, the pavers are also excellent value for money.

VÖGELE AB 340 V Extending Screed for perfect paving results

VÖGELE have developed a special extending screed for the Compact Class pavers. Based on the design of the large screeds, it is perfectly tailored to the range of applications. The SUPER 1100-3 and the SUPER 1103-3 achieve an excellent and extremely uniform degree of precompaction with the AB 340 V Extending Screed with vibrators – across the entire pave width, even when operating with bolt-on extensions. A typical VÖGELE feature is also found in this screed: it comes with electric heating, which heats up the screed plate, for instance, quickly and evenly, ensuring a smooth paving result while cutting operating costs. Moreover, the AB 340 V Extending Screed can be adjusted with millimetre precision using the tried-and-tested single-tube telescoping system – which is infinitely variable within a range of 1.8 to 3.4m, and up to 4.2m with bolt-on extensions. ///

Highlights of Compact Class pavers

- Laydown rate up to 300t/h
- AB 340 V Extending Screed with vibrators and a maximum pave width of 4.2m
- Transport width of just 1.85m
- SUPER 1100-3: high traction thanks to powerful separate drives in the sprockets of the crawler tracks
- SUPER 1103-3: small outside turning radius of just 3.8m (with the Pivot Steer option) and fast transport at up to 20km/h under its own power
- Powerful Deutz diesel engine of the latest engine generation, with a rated output of 74.4kW and ECO mode
- Tried-and-tested intuitive ErgoPlus 3 operating system with numerous additional ergonomic and functional advantages

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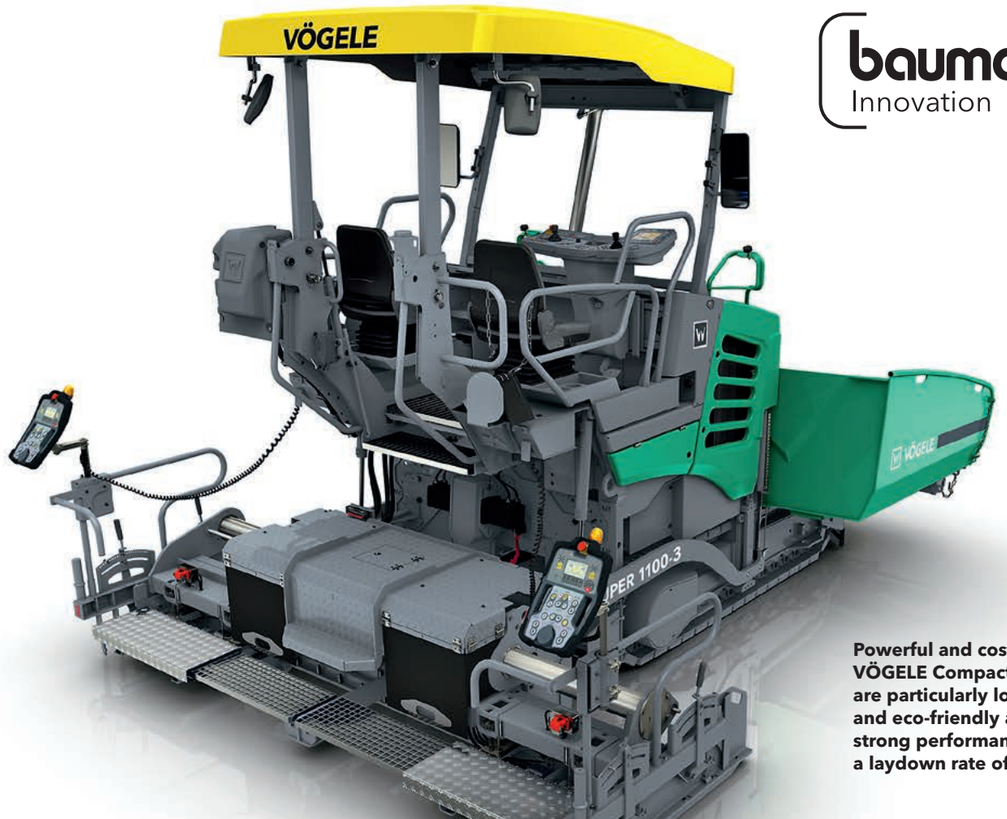

Powerful and cost-efficient: VÖGELE Compact Class pavers are particularly long-lasting and eco-friendly and deliver a strong performance, achieving a laydown rate of up to 300t/h.

Compact tandem rollers – Uncompromisingly good

From China, for China: the HD 30 and HD 35 compact rollers bring the premium quality of HAMM to even the smallest job site.

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Made in China – Made for China

The Langfang facility has now been producing HAMM rollers for over five years. In addition to heavy tandem rollers and compactors, compact rollers of the types HD 30 and HD 35 have also been rolling off the assembly line in recent months. Like all other HAMM rollers produced in China, they offer proven and ingenious HAMM compaction technology. "The new compact rollers also meet the requirements of our market in every detail, offering precisely the options that are important in China," explains Wang Zijie, Head of Design and Development at WIRTGEN GROUP in China.

HD CompactLine: 2 models specifically for China

The rollers of HAMM's HD CompactLine are a global success. Now HAMM have developed 2 models of these versatile and highly compact rollers specifically for the Chinese market. The HD 30, which has a maximum operating weight of around 3.2t, and the HD 35, weighing just short of 3.5t, are produced in WIRTGEN GROUP's Langfang production facility. They offer all the benefits of the HD CompactLine and are easy to operate, super-fast to load and highly productive, yet cost little to run, making them a perfect match for the requirements of the market. And little wonder: the development team was made up of experts from both WIRTGEN GROUP in China and from HAMM's brand headquarters in Germany. »»

Highlights of the HD CompactLine

- Optimum visibility
- Compact dimensions
- High compaction performance
- Reliable water sprinkling
- Easy transport, easy loading
- Easy servicing
- Simple, intuitive and language-neutral operation
- Ergonomic operator's platform

The development team tailored every detail of the compact rollers to the Chinese market, taking everything into consideration in terms of service and the availability of wearing parts, too.

Top compaction performance

The rollers of the HD CompactLine also boast an impressive compaction performance. That is primarily due to the large roller drum diameters, which actively counter the formation of fissures and bumps and help to ensure a high compaction quality. The rollers of the HD CompactLine also have a high static linear load and deliver very great centrifugal forces.

Reliable sprinkling

The water system of the HD CompactLine is similarly geared to quality and productivity. The water is filtered three times: with a self-cleaning water filter, a filter at the filler neck and filters in front of the sprinkling system. The volume of water can be adjusted on the dashboard during the compaction process, and the operator can also activate an extra burst of water by means of a foot-operated button.

3-point articulation

The 3-point articulation ensures an even distribution of weight on both axles while at the same time ensuring high stability against overturning even on tight bends. Not least, it supports a very small turning radius while delivering maximum driving comfort.

Perfect visibility

HAMM's characteristic "wasp waist" design offers unparalleled visibility. It delivers an outstanding view of the drums and the area immediately around the roller. The design of the engine hood also allows an optimum view of the area in front of the machine.

Rapidly checked

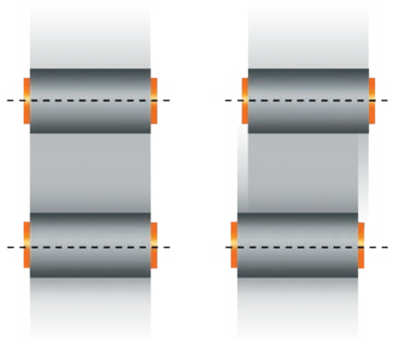
Maintenance work is an efficient process. The central water outlet, for instance, is located at the lowest point of the machine. The water tanks in the rear part of the roller can be emptied completely in just one move. The self-cleaning water filter can also be checked in a matter of seconds. The rest of the daily maintenance is quickly done, too, because all service points are located on one side of the machine and, with an engine hood that opens widely, can be easily accessed without the need for tools. ///

Easy transport

Transporting the compact rollers is just as straightforward as operating them: the handrail serves as a central suspension point – loading couldn't get any easier!

50mm track offset

The new tandem rollers of HAMM's HD CompactLine can operate with a track offset of 50mm. That makes it easy to compact and manœuvre right up to walls, kerbs and other boundaries.



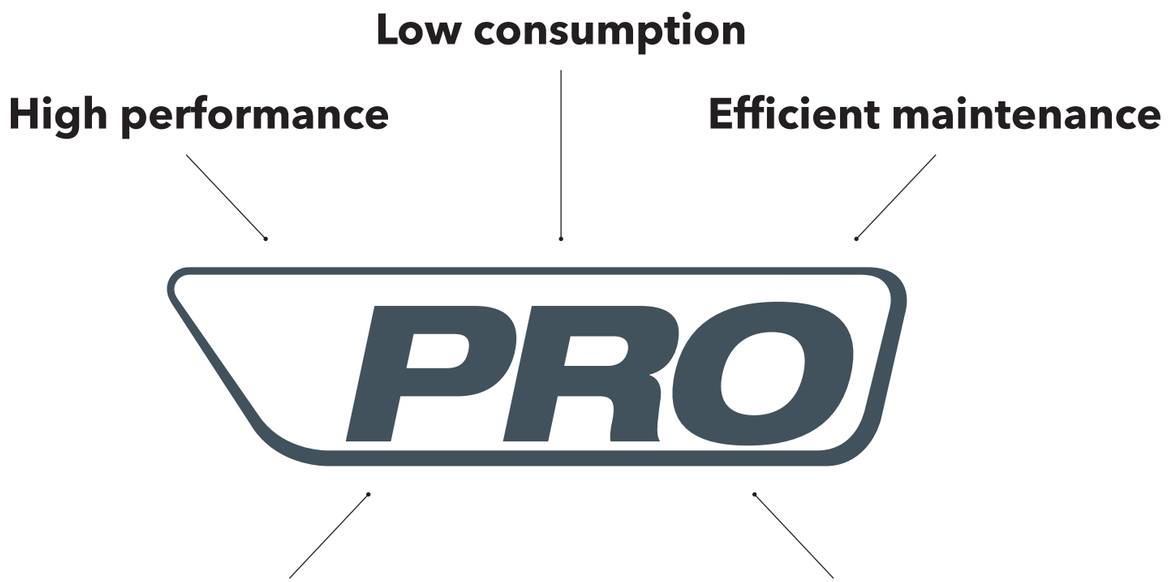
Easy operation

Self-explanatory operation and the clearly structured display, with all key operating data and easy-to-understand symbols, make working with the rollers of the HD CompactLine a straightforward process. The displays have no text at all, meaning that operators need no knowledge of a particular language – an important safety enhancement.

A 22.6kW Kubota engine that meets the requirements of the CN II exhaust emissions standard is installed in the compact tandem rollers.

Poised for GREATNESS

KLEEMANN are presenting their new PRO line at Bauma China 2018. Configured for demanding quarry operation, it sets new standards in robustness and efficiency. The first plants in the line are the MC 120 Z PRO jaw crusher and the MCO 11 PRO cone crusher.



Made for the quarry

Crushing large lumps of rock, delivering precise grain sizes and shapes and utilizing energy efficiently – the KLEEMANN PRO line is certainly poised for greatness. That much is demonstrated by the MC 120 Z PRO jaw crusher and the MCO 11 PRO cone crusher. The design and technology of the PRO line, which is configured for continuous operation in the quarry, are uncompromisingly robust. The plants also feature low-maintenance operation and high availability. The option of operating both plants in combination by means of line coupling, thereby automating the crushing process, turns the pair into true team players. »»

The new PRO line overturns the logic that greater capacity means greater consumption. The diesel-electric drive concept ensures efficient operation, but the plants can alternatively be supplied with power from an external source.

MOBICAT MC 120 Z PRO: High performance in the first crushing stage

Automatic teamwork: if the plant is coupled with the MCO 11 PRO, the CFS Continuous Feed System is active in both plants, ensuring that both crushers are utilized to their optimum capacity.

MOBICAT PRO

Configured for high performance in quarry operations, the MOBICAT MC 120 Z PRO boasts an impressive feed capacity of up to 650t/h in natural stone applications. The high performance of the jaw crushing plant is already apparent in the dimensions of the feed opening – 1,200 x 800mm – and the extra-long design of the mobile crusher jaw, which makes even larger stones easy to handle. To ensure that the operator can concentrate fully on his job – feeding the usually blasted rock – the Continuous Feed System (CFS) adjusts the conveying speed to the filling level of the crusher. Production output is thus maximized automatically. If material blockages do occur, however, the crusher unit of the MC 120 Z PRO does not need to be painstakingly cleared by hand, as is the case with many jaw crushing plants. In the MC 120 Z PRO, the optional crusher unblocking system remedies the situation. The electric crusher drive is put into reverse and the blockage is removed within a short space of time. Thanks to a frequency converter, this system also supports operation at different speeds, allowing the speed of the crusher to be adapted optimally to the material and application.

Prescreening and crusher bypass boost productivity

The less fine material reaches the crushing process, the better the productivity and final product quality. That is why the MC 120 Z PRO is equipped with an independent double-deck prescreen with an extra-large screen surface of 3.5m². The medium grain material – the term used for the aggregate fractions that already have a defined final grain size on feeding – can also be routed past the jaw crusher via a crusher bypass. The plant is controlled from a 12-inch touch panel using SPECTIVE, the intuitive control concept. The operator is guided step by step through the menu, preventing operating errors and enhancing productivity. »»

Highlights of the mobile MOBICAT MC 120 Z PRO jaw crusher

- Large feeding unit configured for feeding with large excavators, hydraulically folding and self-locking
- Effective prescreening thanks to independent double-deck prescreen with extra-large screen surface
- Continuous crusher feed with the CFS (Continuous Feed System)
- Easy-to-operate rock chisel
- High-performance jaw crusher – with optional crusher discharge chute for protecting the crusher discharge conveyor
- Powerful and efficient diesel-electric drive, optional external power supply
- Simple and intuitive SPECTIVE control concept
- Wide, robust crusher discharge conveyor with reliable magnet
- Accessibility and safety: optimum accessibility of all components relevant to operation
- Transport: quickly and easily transportable

MOBICONE MCO 11 PRO: Efficiency and maximum final product quality in the second crushing stage

Perfectly tailored to the MC 120 Z PRO jaw crusher, the MOBICONE MCO 11 PRO is the perfect partner for networked operation by line coupling. That's because this plant for the second crushing stage was developed to meet the high requirements in natural stone processing in quarry operations. This means meeting high quality and quantity standards at the same time. The fully automated crushing gap adjustment function, for instance, makes it possible to adjust the final grain sizes in continuous operation, ensuring high precision. The performance is equally impressive: the MCO 11 PRO can process up to 470t of material per hour, making it the ideal fit for the new PRO line from KLEEMANN. To mobilize this immense performance, the highly efficient diesel-electric drive is designed for a particularly powerful output of 250kW. Using the option of an external power supply can boost economic efficiency further.

Continuous material flow

KLEEMANN attach great importance to an optimum material flow when developing new crushing plants – a focus which is much in evidence in the MCO 11 PRO. The hydraulically adjustable feeding unit, for instance, allows the best possible discharge pattern to be set. The Continuous Feed System (CFS) is also used in the MCO 11 PRO: the conveying capacity of the feeding conveyor is adapted to the crusher level. This means the crusher always reaches its optimum filling height, so that a high-quality end product can be delivered continuously. The reliable overload system protects the crusher in the event of uncrushable material. If the plant is operated in combination with a KLEEMANN primary crusher such as the MC 120 Z PRO, the CFS also regulates the feeding of material in the upstream crushing stage to maximize utilization of the entire interlinked plant combination. The MOBICONE plant likewise uses the non-series-specific SPECTIVE operating concept for control, creating further synergies. ///

Highlights of the mobile MCO 11 PRO cone crusher

- Robust feeding unit made of wear-resistant steel or with replaceable wear lining (optional)
- Continuous crusher utilization with Continuous Feed System (CFS)
- Cone crusher with great stroke length for maximum crushing capacity
- Convenient automatic adjustment of the crushing gap via touch panel
- Powerful and efficient diesel-electric drive, optional external power supply
- Simple and intuitive SPECTIVE control concept
- Wide and robust crusher discharge conveyor
- Easy to transport thanks to hydraulically folding crusher discharge conveyor and slide mechanism
- Optimum accessibility of all components relevant to operation and high safety standards

The MOBICONE MCO 11 PRO from KLEEMANN is optimally equipped for heavy-duty applications in natural stone processing and is tailored to the performance of the MC 120 Z PRO jaw crusher.

Concentrated power in Shenzhen

No less than five KLEEMANN plants are in use in Shenzhen, Guangdong. They are crushing granite in a quarry for concrete and asphalt production in southern China.

Guangdong // Shenzhen

Shenzhen is a thriving city in southern China. The metropolis connects Hong Kong with the mainland and is well known for its shopping centres and leisure parks. Shenzhen is considered one of the fastest-growing cities in the world. It is also the location for many quarries in which granite is crushed. These include the quarry in the Shajing district, which is operated by Shenzhen City Fusheng Investment Co., Ltd. The granite crushed here is used in the production of concrete and asphalt in southern China over a radius of up to 400km.

Job site details

Processing of rock and stone at a quarry in Shenzhen, Guangdong

Material

Feed material:	Granite
Feed size:	0–600mm
Final product:	0–5mm, 5–10mm and 10–22mm

Working parameters

Feed capacity:	320–340t/h

Equipment

KLEEMANN MOBICAT MC 120 Z PRO jaw crusher
KLEEMANN MOBICONE MCO 11 PRO cone crusher
KLEEMANN MOBISCREEN MS 953 EVO screening plant
KLEEMANN MOBICONE MCO 9 S cone crusher
KLEEMANN MOBISCREEN MS19 D screening plant

Generations of expertise

Shenzhen City Fusheng Investment Co., Ltd. is a third-generation company in the quarry sector. In response to new government requirements, the machinery in the equipment park is currently being switched to mobile machines. Quarries with stationary plant are gradually being shut down, the reason being that the quarries are very large, making the journeys from the place of extraction to the processing plant too long. Mobile plants, on the other hand, can be repeatedly transported to the place of extraction.

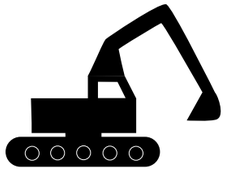
A strong team: Interlinking KLEEMANN plants

This is where the mobile crushing and screening plants from KLEEMANN come into play. They are powerful and robust, yet mobile. In the Shajing quarry, Shenzhen City Fusheng Investment Co., Ltd. use no less than 5 coupled KLEEMANN machines. First, the MOBICAT MC 120 Z PRO jaw crusher crushes the feed material, which is 0–600mm in size. From here the granite continues to the MOBICONE MCO 11 PRO cone crusher, which breaks the aggregate down further. After sorting in the MOBISCREEN MS 953 EVO classifying screen, the oversize grain goes on to the MOBICONE MCO 9 S EVO cone crusher. Finally, in the MOBISCREEN MS 19 D screening plant, the product is divided into the desired final grain sizes of 0-5mm, 5–10mm and 10-22mm, a standard product for the whole of China.

Three-stage crushing process for high quality

This three-stage crushing process ensures a very good final product quality. It also allows a much greater performance per hour to be achieved than in a smaller plant combination. The company already had an MC 110 Z EVO, MCO 9 S EVO and MS 19 D before this project in Shenzhen. This combination would have enabled a feed capacity of 190t/h. But the final combination of 3 crushers and 2 screening plants delivers a feed capacity of as much as 340t/h. The plants of the PRO and EVO series work perfectly together because they can be flexibly adapted to each other. While the PRO plants at the start of the interlinked chain are configured for performance and large feed sizes, the MCO 9 S EVO at the end of the chain performs the precision work, turning the oversize grain delivered from the MS 953 EVO into the desired cubic final product. »»

Interlinked operation in Shenzhen: Optimum material flow thanks to 5 KLEEMANN plants



Material fed by bucket excavators:
Feed capacity: 340t/h
Feed size: 0-600mm

1. Crushing stage in the MOBICAT MC 120 Z PRO
Final grain size: 0–10mm, 25t/h
Material transfer – oversize grain: 315t/h

2. Crushing stage in the MOBICONE MCO 11 PRO
Material transfer – oversize grain: 315t/h

Final grain size screening in the MOBISCREEN MS 953 EVO
Top deck overpass: 22–60mm, 140t/h
Middle deck overpass: 10–22mm, 117t/h
Bottom deck overpass: 5–10mm, 27t/h
Bottom deck underpass: 0–5mm, 30t/h

Oversize grain

3. Crushing stage in the MOBICONE MCO 9 S EVO
Material transfer: 140t/h

Final grain size screening in the MOBISCREEN MS 19 D
Middle deck overpass: 10–22mm, 80t/h
Bottom deck overpass: 5–10mm, 26t/h
Bottom deck underpass: 0–5mm, 34t/h
(last screen media in the top deck removed)

The process diagram shows the flow of material through the 5 KLEEMANN crushing and screening plants that are interlinked in Shenzhen and classify three final grain sizes precisely. The distinguishing feature is that there is a third crushing stage and a second screening plant for efficient operation and to avoid fines.

Ease of operation

The ease of operation of machinery is vital if a smooth process, rapid trouble-shooting and the highest levels of safety are to be guaranteed. All KLEEMANN plants come with an easy-to-understand control system. The MC 120 Z PRO and the MCO 11 PRO are even equipped with SPECTIVE, the intuitive control concept. The user interface of all plants can also be set to display Chinese characters. But it was not just their user-friendliness that persuaded Project Manager Wei Shuhui of the merits of the KLEEMANN machines: "I appreciate the productivity, the ease of transport and the environmental friendliness of the machines. I am certain that mobile plants from KLEEMANN will increasingly be chosen for future urban development projects."

Line coupling boosts productivity

The plants are interlinked by means of the line coupling option. The crushing process between the crushing plants is automated so that the material is conveyed optimally through the machines and the machines themselves do not overflow. A probe installed at the crusher discharge conveyor of the upstream plant monitors the filling level of the feeding unit of the downstream plant. Once the filling level reaches a defined height, the performance of the upstream plant is temporarily reduced. The Continuous Feed System of the individual plants ensures optimum utilization of the crusher. In terms of safety, all crushing plants – plus the MS EVO screening plant – are connected to one other by means of cables. If an emergency stop is activated anywhere within the interlinked plant combination in an emergency situation, all the machines are stopped safely. ///

BEIJING

Beijing New International Airport in figures

Terminal area:	700,000m²
Capacity:	up to 100,000,000 passengers/year up to 2,000,000t cargo/year up to 620,000 aircraft movements/year

Designed for over one flight movement per minute: the traffic areas of Beijing New International Airport in Daxing need to withstand extremely high loads.

Precise pavement

When it opens in October 2019, the Beijing New International Airport in Daxing will be one of the largest international airports in the world. A fleet of WIRTGEN slipform pavers is on site for the construction of the enormous apron area, with a parking capacity of 268 aircraft.

Job site details

Construction of an apron area on Beijing New International Airport in Daxing, China

Working parameters

Pave width:	5m
Layer thickness:	42cm
Concrete reinforcement:	steel dowels
Levelling and steering:	stringline sensors

Equipment

4 WIRTGEN SP 500 slipform pavers

100 million

is the passenger capacity that Beijing New International Airport will be able to handle after completion

Beijing's mega-airport

Beijing is the main passenger hub in Asia. The new airport is located 67km from the capital city along the border to Hebei province. It will relieve pressure on the existing airport northeast of Beijing, currently the world's second-largest in terms of passenger volume. The new airport will initially serve 45 million passengers but will have a total capacity of 100 million. The concrete paving is being carried out by 4 WIRTGEN SP 500 slipform paver units and with full application support from the WIRTGEN GROUP subsidiary in China.

Mature processes for concrete paving

Low temperatures of around 0°C during the cold winters in Beijing were one of the challenges the Beijing Sino-Aero Construction Engineering Co., Ltd. team had to face during the construction period of the large apron area. A total of 4 WIRTGEN SP 500 slipform pavers were paving single-layer concrete slabs 5m wide and 42cm thick over fixed forms. Levelling and steering parameters were communicated to the WIRTGEN machine control system via stringline sensors. To withstand the high aircraft loads, the concrete slabs are reinforced by means of steel dowels. Thanks to the productive performance and the high machine availability, daily production targets could easily be achieved so the tough timeline was adhered to.

Highest cost-efficiency and quality

On large-scale job sites, every saving has a significant effect on the final costs. When choosing the equipment fleet for such a venture, the contractor must consider several factors. Minimizing manpower was one of the main criteria considered by Sino-Aero Construction Engineering; they concluded that the WIRTGEN slipform pavers were the right solution for automated, efficient concrete paving. The process ran smoothly and exactly as scheduled, and the robust paving mould slipformed the concrete, exceeding the required specifications. Electrical vibrators emitting high-frequency vibrations ensured optimum compaction of the concrete during the slipforming process. Last but not least, the oscillating beam and super-smoother put the finishing touches to the brand new pavement. »»

New WIRTGEN SP 60 series: Flexibility is the key

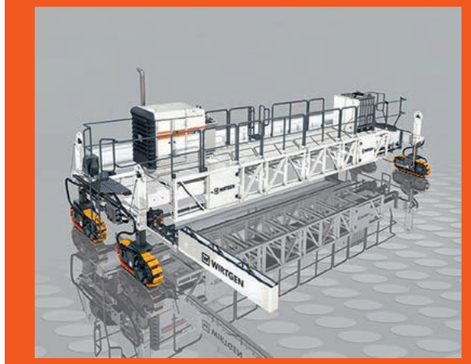
bauma CHINA Innovation

The SP 61, SP 62 and SP 64 models feature a maximum working width of 7.5m and a standard thickness of 450mm (greater thicknesses are available upon request) in inset applications and a working width of up to 3m and maximum height of 2.2m in offset applications. With this series, WIRTGEN have developed a new generation of slipform pavers that combine the diverse functions of the globally successful SP 500 with the state-of-the-art technology of the larger WIRTGEN SP 90 series. WIRTGEN's new series has not only expanded the variety of applications but also created a link between their range of inset and offset pavers. The SP 60 series thus rounds off the high end of the offset line, comprising the SP 15 and SP 25. In terms of inset pavers, it bridges the gap between the small and the mid-range models in the SP 90 series, with pave widths up to a maximum of 9.5m. The large slipform pavers with a maximum pave width of 16m complete this product family. »»

Thanks to its versatility in inset and offset applications, the SP 60 series is the new multi-talent in concrete paving. The SP 64 inset paver will be celebrating its debut at Bauma China 2018.

Texture curing machine: The ideal co-pilot

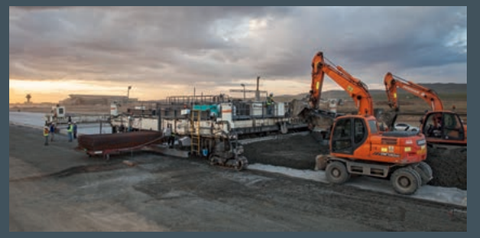
WIRTGEN also offer the ideal co-pilot to accompany their slipform pavers: self-propelled texture curing machines, such as the new TCM 180 or the TCM 95. As soon as the concrete has been placed by the slipform pavers it must be protected without delay to prevent it from drying out, as this causes tension which, in turn, leads to cracks. The texture curing machines guarantee success in the professional curing of concrete pavements. They are equipped with an automatic spraying and texturing system. Once the surface has been textured, the spraying unit applies a curing compound to the fresh concrete surface to prevent it from premature dehydration which would cause unintended stress and cracks.



WIRTGEN offer the full range of concrete paving solutions for airport projects.

Howard Shen, Senior Product Manager
WIRTGEN GROUP in China

Machines and application examples in inset and offset paving

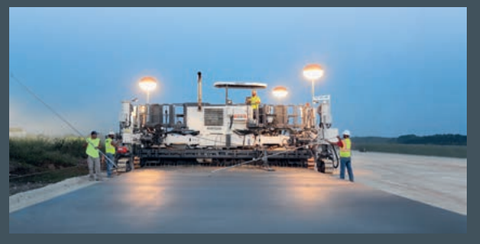


Construction of runway, taxiway and aprons at New Airport in Ulaanbaatar, Mongolia

Equipment:	SP 1600 inset paver
Pave width:	5,000–16,000mm
Pave thickness:	max. 450mm

Construction of v-shaped canal in Pune, India

Equipment:	SP 25 inset and offset paver
Application:	offset
Pave width, offset:	max. 2.500mm
Pave height, offset:	max. 2.000mm

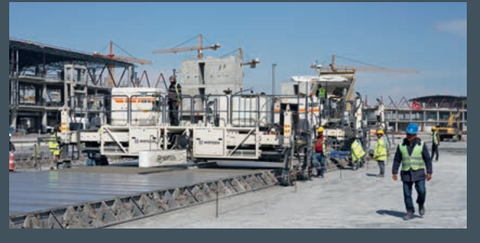


Reconstruction of runway at Memorial Airport Jefferson City, Missouri, USA

Equipment:	SP 94i inset paver
Pave width:	3,500–9,500mm
Pave thickness:	max. 450mm

Construction of roadway in Hamburg, Germany

Equipment:	SP 25 inset and offset paver
Application:	inset
Pave width, inset:	1,000–3,500mm
Pave thickness, inset:	max. 400mm



Texturing and spraying of taxiways at New Istanbul Airport, Turkey

Equipment:	TCM 95 texture curing machine
Working width:	max. 9,500mm
Working height:	max. 500mm

Construction of concrete safety barrier in Lianyungang, China

Equipment:	SP 15 offset paver
Pave width, offset:	max. 1,800mm
Pave height, offset:	max. 1,300mm

Job for a WIRTGEN W 195 cold milling machine and a VÖGELE SUPER 1600 L paver:

Innovations at work

Set to make their trade-fair debut at Bauma, the new WIRTGEN W 195 large milling machine and the new VÖGELE SUPER 1600 L paver have several things in common: both machines help customers to carry out projects cost-effectively and to a high quality. The two innovative machines have earned their credentials in the field, too – when rehabilitating National Highway 104 in Yuhang district.

W 195 meets challenging requirements

The increasing heavy goods traffic on the already highly frequented National Highway 104 had led to the formation of cracks, ruts and deformations of the asphalt surface course, making its renewal unavoidable. Hangzhou Haoting Construction Engineering Co., Ltd., who were commissioned with the milling job, decided to use the WIRTGEN W 195 large milling machine in order to create a level, profile-aligned base onto which the new surface course could be paved: "The particularly simple and reliable operating concept makes for an exceptional milling performance and high daily production rates," says General Manager Ye Ting, explaining a decisive criterion behind the choice of the WIRTGEN model. With a milling width of 3.75m along a the 2km long section, the area to be milled totalled 10,000m². "Thanks to its low diesel consumption, the two-metre milling machine is also very cost-efficient. This saves us time and money on every cubic metre of asphalt milled." »»

Ye Ting and Li Feng, Service Manager from WIRTGEN GROUP's local dealer Zhejiang Luzhiyou Engineering Machinery Co., Ltd., agreed: "The W 195 is the right choice when it comes to cost-efficient milling, flexible applications and high daily production rates."

The W 195 saves us time and money on every cubic metre of asphalt milled.

Ye Ting, General Manager
Hangzhou Haoting Construction Engineering Co., Ltd.

Job site details

Rehabilitation of National Highway 104 in the Yuhang district highway section, Hangzhou

Project length:	2km in each direction
Project area:	10,000m², approx.

Working parameters

Working width of milling machine and paver:	3.75m
Layer thickness of milling machine and paver:	5cm
Working speed of milling machine:	15m/min

Material

Surface course:	AC 13

Equipment

WIRTGEN W 195 large milling machine
WIRTGEN W 50 H small milling machine
VÖGELE SUPER 1600 L paver with
AB 480 TV Extending Screed

Cold milling expertise from WIRTGEN: Leading in applications know-how and technology

The planning, construction and maintenance of infrastructural construction measures are subject to continuously increasing demands. This does not only apply to structural, operational and mechanical engineering know-how; ecological conduct based on sustainable processes is becoming an increasingly important aspect. With their application-optimized cold milling technology and machines, WIRTGEN are continuously creating innovative solutions that help customers meet these requirements, enabling asphalt and concrete surfaces to be removed quickly and efficiently.

Advanced and economical milling

Equipped with a 410KW, 15-litre Cummins diesel engine, the W 195 delivers enormous engine power with milling widths of 2,000mm and milling depths of up to 330mm. The machine control system automatically sets the working speed once the milling process has begun and the machine automatically enters idle mode when the milling process is complete. This not only reduces fuel consumption, but also considerably reduces the noise emissions generated. What is more, with a multitude of new and invaluable features, the W 195 dovetails with the established WIRTGEN features to optimize the milling process, offer high flexibility in use and make operation of the milling machine considerably easier. The new large milling machine is suitable for all milling operations typical of the two-metre-class, including complete pavement removal and fine milling jobs. Its optimized weight even maximizes the cost-effectiveness of milling operations as the W 195 is easy to transport quickly from one job site to the next to ensure high flexibility. »

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Together with the W 205 and W 215 models, the W 195 represents WIRTGEN's new large milling machine series for the Asian market.

Advanced – Cold milling machine for economical applications

- Two-metre front loader in tried-and-tested design for efficient milling operations
- The machine is suitable for all milling applications typical of the two-metre class
- High daily production rates can be achieved thanks to an exceptionally simple and reliable operating concept
- Optimized weight and advanced machine technology ensure high flexibility in operation
- The cold milling machine is exceptionally cost-effective thanks to low diesel consumption and tool use

New Delta 18 milling drum technology: Increasing milling performance at low operating costs

The new Delta 18 milling drum technology and three adjustable milling drum rotation speeds of 104rpm, 116rpm and 129rpm ensure high performance at low operating costs. With Delta 18, the W 195 achieves an even higher milling output due to the optimized arrangement of the cutting tools in the outer ring and the conveying and ejecting areas of the milling drum, while simultaneously reducing cutting tool wear.

Levelling precision is essential

The condition of the milled surface has a key impact on the quality of the new surface courses, their service qualities and on the economical and efficient execution of the other construction measures. An evenly milled surface, true to line and level, is a crucial factor when it comes to paving surface courses of uniform thickness and avoiding costly correction measures in the form of asphalt levelling courses. No problem for the customer who could rely on LEVEL PRO PLUS, the new levelling system developed by WIRTGEN. Operators especially like the intuitive, easy operation with a system which is completely integrated into the machine's control system. In this application hydraulic sensors were used but in general the "plug & play" interface allows additional sensors to be connected to the levelling system easily. This enables extra options to be added as required, such as the optional multiplex system.

Using WIRTGEN's multiplex system

In the multiplex system, for instance, three sensors on each side of the machine scan the height. The automatic levelling system factors all three measurements – collected on a reference line with a length of 8m to ensure maximum surface evenness – into its analysis so that the preset target milling depth is met exactly, but any unevenness in the road surface is not copied. This is a highly effective way of levelling out longitudinal undulations. What is more, defined surface profiles can be created, such as specified cross slopes for draining off rainwater. This allows the entire road structure to be rehabilitated if necessary. »»

Precision meets intuition: Highlights of the LEVEL PRO PLUS levelling system

- Maximum precision for a high degree of evenness
- Simple, intuitive handling
- Fully integrated into the machine management system
- Large choice of sensors
- New hydraulic cylinders at the side plates with integrated displacement sensors

LEVEL PRO PLUS can work with different sensors – cable, hydraulic cylinder, sonic and slope sensors or laser and sonic ski sensors as well as multiplex systems – and can be extended as required. 3D levelling can also be carried out by means of installed interfaces that are compatible with 3D systems from common manufacturers.

Paving with the SUPER 1600 L – Amid flowing traffic

> The SUPER 1600 L did an excellent job right from the word go.
>
> **Long Aibing, General Manager Hangzhou Hongde Engineering Machinery Co., Ltd.**

Once the carriageway had been precisely milled off, it was time to pave the new surface course. A paving team from the contractor Hangzhou Hongde Engineering Machinery Co., Ltd. took on the job using the VÖGELE SUPER 1600 L paver. Like the prior milling operation, paving was carried out in several sections, each 3.75m wide, amid flowing traffic. After all, closing National Highway 104 completely was not an option, since the road is so heavily trafficked.

"In this project, it was important to minimize the disruption to traffic and to complete the asphalt paving work as quickly as possible," says General Manager Long Aibing, "The VÖGELE paver did an excellent job right from the word go. The performance was spot on and the surface we built is absolutely even and of a superb quality." Hangzhou Hongde Engineering Machinery Co., Ltd. opted to use the VÖGELE Universal Class paver, because it perfectly matched the company's range of applications. Indeed, the SUPER 1600 L is a true master of asphalt paving, in smaller and larger projects alike. The excellent experience the company has had with other VÖGELE machines such as the SUPER 1880 L, as well as other WIRTGEN GROUP machines, for instance the HAMM HD 128 tandem roller, added to the paver's appeal. »»

ErgoBasic makes paving straightforward

Paver Operator Zhai Zhengliang confirms the positive impression: "It was the first time I had worked with a VÖGELE paver. Thanks to ErgoBasic, the machine is simple to operate and you really do get to grips with the functions very quickly. And the performance of the SUPER 1600 L is excellent." Zhai was particularly taken with the push-buttons. "You can feel that a button has been pressed without taking your eyes off the paving process or the feeding of mix from the lorry. This means I can focus fully on my work, an aspect which also benefits the paving quality."

VÖGELE extending screed with perfect asphalt handling

Paving work on National Highway 104 not only progressed quickly, but to a high quality. The quality of asphalt paving is crucially evident in the surface accuracy or truth to line and level of the traffic area produced. The new SUPER 1600 L tracked paver hits the mark in this respect with its AB 480 TV Extending Screed. It combines great variability with high precision, because it is particularly stable with its single-tube telescoping system. The 3-point suspension enables the pave width to be adjusted gently and quickly without jerking. The tamper and vibrator compacting systems are another key quality feature. The tamper, in particular, is important, since it packs the asphalt mix under the basic screed, achieving high degrees of precompaction. This assures the paving quality and evenness of the resultant pavement across the entire width. "This VÖGELE technology is a particularly great asset when we have to work to a tight schedule like in Yuhang district," reports Long Aibing. ///

bauma CHINA Innovation

Uncompromising VÖGELE quality: The SUPER 1600 L has the same sophisticated drive technology and material management as the "Dash 3" Universal Class pavers.

AB 480 TV Extending Screed: Perfect asphalt handling for perfect paving results

The VÖGELE AB 480 Extending Screed can be adjusted hydraulically over a range of 2.55m to 4.8m; with bolt-on extensions, the maximum pave width of the SUPER 1600 L is 7.8m.

A typical VÖGELE feature found in the AB 480 Extending Screed is the powerful and above all cost-effective electric heating. The modern heating system brings the screed to operating temperature quickly and uniformly, ensuring a smooth surface and perfect asphalt paving.

7.8m

is the maximum pave width of the SUPER 1600 L

Great power.
Powerful performance.

Paving a cement-treated base layer along a 45km stretch: 2 SUPER 1880 L pavers with Heavy-Duty kit master the challenge and deliver first-class quality. National Highway 107 in Xuchang is now well equipped to withstand high traffic volumes.

Job site details

Paving the CTB layer on National Highway 107 in Xuchang, Henan

Length of section:	45.2km
Width of section:	Up to 33.2m total
Area of section:	1.5 million m², approx.
Investment costs:	1.613 billion RMB

Working parameters

Pave width:	2 x 8.3m-wide lanes in each direction
Layer thickness:	40cm
Laydown rate:	1000t/h
Pave speed:	3m/min

Material

Cement-treated base:	CTB 0/40

Equipment

2 VÖGELE SUPER 1880 L pavers
with SB 300 HDT Fixed-Width Screed
1 HAMM 325 compactor
1 HAMM 3625 HT compactor

Henan // Xuchang

A city of 4.3 million, like Xuchang in Henan province, needs an efficient infrastructure and this is why National Highway 107 in greater Xuchang was expanded in a project which involved constructing a new highway section. This main traffic artery, with a total width of up to 33.2m, will have to bear high traffic volumes in future. To make sure the road withstands the associated loads for as long as possible, the contractor, Tecfure Group, working on behalf of the Xuchang Municipal Highway Bureau Construction Unit, chose to deploy robust and reliable VÖGELE equipment, specifically 2 SUPER 1880 L tracked pavers. These multifunctional pavers for CTB and asphalt are very popular in China. The large-scale job site in Xuchang shows why.

Thirty days for 45km in both directions

"We really had a tight schedule on this job," said Jia Chaoju, Deputy General Manager of Xuchang Tengfei Highway Engineering Construction Co., Ltd. "We had to pave cement-treated base over a 45km section in just 30 days. There was no question that everything had to work like clockwork on a job like this if we wanted to successfully reach our goal for this part of the overall project. Together with the Tecfure Group, we found a way to achieve our objective." To support efficient job site logistics, the Xuchang Municipal Highway Bureau Construction Unit contracted 2 mixing plants and 16 lorries to supply the 2 SUPER 1880 L pavers with mix. But the VÖGELE pavers also made a key contribution to the achievement. "On this job site, we covered the entire length of the section with only 2 pavers. Such a feat is only possible when the equipment functions flawlessly. And considering how abrasive the cement-treated base material is, this is something you can't take for granted."

SUPER 1880 L with Heavy-Duty kit

The SUPER 1880 L is optimally equipped for paving CTB. The Heavy-Duty kit, with its ingenious design and proven performance, essentially shields the leading VÖGELE equipment against damage by large-grain-size gravel; the CTB material in Xuchang had a grain size of up to 40mm. VÖGELE also engineered the robust machine's screed for jobs like this: the SB 300 HDT Fixed-Width Screed, where "HD" stands for "Heavy-Duty" kit and "T" for "tamper". It boasts durable workmanship and achieves an extremely high degree of density, even when paving CTB in a high layer thickness. The special tamper geometry is what makes it possible. The tamper is a compacting system that packs the mix under the screed. In the case of the SUPER 1880 L, VÖGELE designed the tamper with a uniquely flat angle of attack that improves compaction and evenness, even when placing coarse material. Equipped with this machine technology, the paving teams were well up to the challenge of expanding National Highway 107. The pavers worked in echelon, i.e. with 2 SUPER 1880 L pavers operating alongside one another in a slightly staggered formation. »»

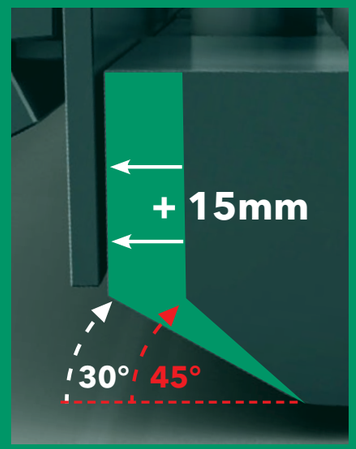
Road construction is teamwork: the paving team in Xuchang worked hand-in-hand, as did the machinery from the WIRTGEN GROUP. The VÖGELE pavers were followed by 2 model 325 and 3625 HT compactors with vibrating drums from HAMM.

1,494,000m²

is the area on which CTB was placed by the SUPER 1880 L pavers.

For hard work and high productivity: SB 300 HDT Fixed-Width Screed

The extremely durable SB 300 HDT with Heavy-Duty kit is designed specifically for paving CTB and other non-bituminous mixes. The screed plates are extra deep to ensure outstanding floating behaviour. The tamper geometry, with a significantly smaller angle of just 30°, is optimally adapted to the demands of CTB paving. With these features, the SB 300 HDT achieves higher compaction values. Tamper speed and stroke can be precisely adjusted and adapted to the volume of material, the type of mix and the layer thickness. The infinitely variable tamper speed can be regulated from either of the SUPER paver's consoles. A 2, 4 or 7mm stroke is ideal, depending on the layer thickness. The basic width is 3m, but can be expanded to 9.5m with bolt-on extensions.



SUPER 1880 L makes CTB paving efficient

When placing materials like CTB, a lot of contractors and users shy away from using premium machinery. Consequently, the cement-treated gravel is frequently spread with the help of excavators, wheeled loaders or graders. Compared to this method, pavers have the advantage of working continuously and therefore offering major cost-cutting potential. Particularly in markets like China, where countless new roads are being built, it is critical for machine fleets to be geared to meeting this requirement and equipped for CTB paving. However, the multifunctional SUPER 1880 L paver is not just a specialist for such jobs; it is also excellently suited to paving hot asphalt, because it incorporates the best of two worlds: in addition to the Heavy-Duty kit and the screed in the HDT version, this Universal Class paver also integrates the innovative highlights of its "big brother", the SUPER 1880-3 L, which sets the standard for asphalt paving in China. The 2 VÖGELE machines share a 158kW Dongfeng Cummins diesel engine, separate hydraulic drives and electronic control for each crawler track, an extra-long material hopper and a maximum laydown rate of 1,000t/h.

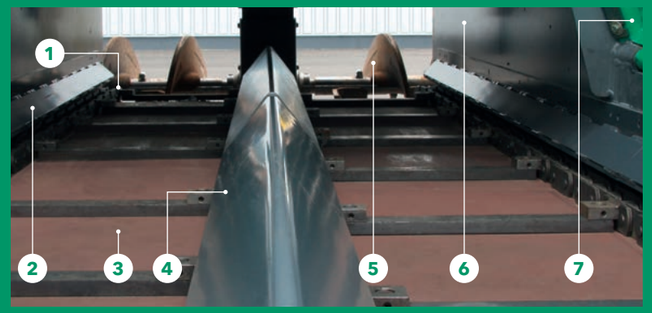
Sturdy technology, easy to handle with ErgoBasic

Having reliable control over the paving process prevents paving errors and guarantees quality results. World market leader VÖGELE developed their ErgoBasic operating concept in line with this principle. It centres on ergonomics for fatigue-free working, clear design and straightforward operation. In addition, the detail features of ErgoBasic show what a strong practical focus the VÖGELE engineers in China and at brand headquarters in Germany have, such as the backlighting that facilitates operation of the paver operator's and screed operator's consoles in poor lighting conditions and at night, or the design of the push-buttons: operators can feel when they have successfully pressed a button without taking their eyes off the paving process and even when wearing work gloves. ErgoBasic is a real advantage on the job, as confirmed by Zhu Xiaodong, one of the paver operators of Xuchang Tengfei Highway Engineering Construction Co., Ltd.: "I'm very happy with my VÖGELE paver. Partly because of ErgoBasic. The operating system is of simple design; I always feel in control in every situation." »»

Harder than gravel: The Heavy-Duty kit

Even in the standard version without the Heavy-Duty kit, VÖGELE pavers are extremely rugged and reliable, because all parts that come into contact with paving material are fabricated from highly durable steel. The bottom plates of the conveyors and the return pulleys for the conveyor chains are of highly wear-resistant design. All these features are standard at VÖGELE.

But even so, a paver like the SUPER 1880 L, designed for high-volume construction projects with non-bituminous mixes, requires special equipment. The multifunctional paver gets support from a Heavy-Duty kit. In this configuration, the paver is tailored to road base applications. Reinforced guards for the conveyor tunnel and chassis, as well as modified auger blades counteract abrasive wear.



The Heavy-Duty kit in detail

1. Reinforced return pulleys for conveyors
2. Reinforced lateral guards
3. Wear-resistant bottom plates
4. Optimized geometry of the central guard
5. Modified auger blades
6. Armoured material tunnel
7. Reinforced material hopper

Whether they are paving asphalt or thick CTB layers, with the SUPER 1880 L, our customers have every construction project under control.

Equipped to handle CTB with the Heavy-Duty kit: thanks to extremely robust materials and an ingenious design, the equipment functions as expected.

Interview

... with Luo Bingshen, General Manager of the Xuchang Tengfei Highway Engineering Construction Co., Ltd. , on the SUPER 1880 L, the job in Xuchang and his collaboration with the WIRTGEN GROUP in China.

Mr Luo, what convinced you to invest in the SUPER 1880 L pavers?

I have always been totally satisfied with VÖGELE quality and performance. The equipment is just so rugged and functions with such high precision – the way it should. Then there is the support from the WIRTGEN GROUP in China. I have 16 years of experience in the road construction industry and can say that they have always been fantastic to work with. Whether I need a regular servicing or applications advice, I get direct support for all my concerns.

What was the biggest challenge at the Xuchang job site?

We had to deliver quality under time pressure. A cement-treated base 40cm thick that has to bear extremely high loads: not many contractors would agree to do such a job in such a tight time frame, and especially not in a single pass. That's why it's so important for the equipment to function with one-hundred per cent reliability. With the Heavy-Duty kit for the SUPER 1880 L and the SB 300 HDT Fixed-Width Screed, VÖGELE have taken exactly the right steps for paving CTB.

How satisfied are you with the result?

Everything went extremely well. The cement-treated base is very level and our SUPER 1880 L pavers worked very efficiently despite the 40cm layer thickness. My paving crew did absolutely everything right; that of course was also very important. One reason is undoubtedly the simple ErgoBasic operating concept, which makes for straightforward operation. The WIRTGEN GROUP service technicians and application consultants in China, who lend us great support whenever we need it, also contributed to the good results. ///

VÖGELE quality and performance are simply impressive. Both SUPER 1880 L pavers worked very efficiently despite the 40cm layer thickness.

Luo Bingshen, General Manager
Xuchang Tengfei Highway Engineering Construction Co., Ltd.

Highlights of the SUPER 1880 L

- Great power, high efficiency: Dongfeng Cummins engine rated at 158kW
- ErgoBasic operating concept: super-easy paver and screed operation and excellent view of the entire machine and job site
- Heavy-Duty kit: reinforced guards for the conveyor tunnel and chassis, as well as modified auger blades counteract abrasive wear
- SB 300 HDT Fixed-Width Screed: with Heavy-Duty kit and Heavy-Duty tamper – ideal for paving CTB – as well as electric screed heating for rapid warming of the screed plates when paving asphalt
- Extra long, particularly low material hopper: for hitch-free feeding with all models of lorries currently used in China
- Highest product quality for great reliability and durability

HAMM Oscillation:

Successful in asphalt construction and earthworks for the last 35 years

Over 35 years ago, HAMM were the first roller manufacturer to introduce a drum with oscillation technology. Today this technology is an integral part of the HAMM product portfolio: one in four new HAMM tandem rollers is equipped with an oscillation drum. One reason behind HAMM's success is their broad range of products, including oscillation rollers in all weight classes and for all markets. The other reasons: with oscillation rollers from HAMM, you can complete high-quality compaction jobs quickly and cost-efficiently, and the range of applications is enormous. »»

35 YEARS

Oscillation from HAMM – The Video

Watch it now at

www.hamm.eu/oscillation

Oscillation from HAMM

Did you know that…

…HAMM is the pioneer of oscillation?

…HAMM has manufactured over 7,000 rollers with oscillation?

…today one in four HAMM rollers is ordered with oscillation?

Find out more about HAMM oscillation in the video – at

www.hamm.eu/oscillation

Oscillation from HAMM – The original

Product portfolio with over 35 oscillation rollers: apart from tandem rollers from 7–14t, HAMM is the only supplier worldwide to also manufacture oscillation rollers in the compact class (2.5–4.5t) and soil compactors with VIO drum that additionally support oscillation compaction.

35 YEARS

Fast, cost-efficient, high-quality

Tandem rollers from HAMM with one oscillation and one vibrating roller drum achieve at least the same degree of density as a double vibrating drum roller, but with fewer passes. At the same time, they emit significantly lower levels of vibration to the surrounding area. Another plus: oscillation rollers can begin dynamic compaction right behind the paver. What is more, they can handle the main compaction work. Even when asphalt temperatures are low at the end of the process, oscillation makes it possible to increase the degree of compaction without grain destruction. Overall, the time available for compaction is considerably longer with oscillation than with vibratory rollers.

Use in earthworks and asphalt construction

Oscillation rollers can be used for all layers encountered in earthworks and road construction. In earthworks applications, they are in demand wherever the upper layers need to be reliably prevented from re-loosening, for instance on landscaping jobs. Another important application is compacting surfaces in vibration-sensitive areas, such as above pipelines or in the vicinity of railway tracks. In asphalt construction, oscillation rollers reliably compact all base, binder and surface courses. They are particularly effective in compacting generally hard-to-compact asphalts, such as SMA or polymer-modified material mixes. This is because, in contrast to vibration compaction, the effective direction of the vibrations during oscillation promotes the desired redistribution of long-chain binding agents.

Demanding job sites

Other applications include work on thin layers (surface courses, thin overlay) in vibration-sensitive areas (bridges, confined urban spaces, buildings or parking decks) and anywhere where mix cools quickly (thin overlay, windy or cold environments). The compaction of joints is another important application: here, oscillation rollers compact hot asphalt without damaging the adjacent cold asphalt. »»

Rollers with an oscillation and vibrating roller drum compact faster and achieve higher degrees of density than double vibrating drum rollers.

HAMM – A pioneer of oscillation

- HAMM were the first to introduce oscillation rollers to the market and have since continuously advanced the technology.
- Today, HAMM have over 30 models equipped with oscillation technology in their range.
- HAMM are the only manufacturer worldwide to engineer rollers in the compact class and soil compactors with oscillation technology.
- HAMM offer oscillation rollers that meet different exhaust emissions standards (Tier 3 and Tier 4).

Advantages of oscillation

Oscillation has a positive impact
on the efficiency and quality of compaction

Advantage 1: High compaction performance – High efficiency

Oscillation rollers compact very rapidly. Put another way: their compaction performance is extremely high, thanks to the combination of dynamic shear forces and continuous static load resulting from the net weight of the machine. Significantly fewer passes are required as a result, particularly when compacting large surface areas. Therefore, using oscillation is very cost-efficient on many major projects, because thanks to the rapid increase in the degree of density, fewer rollers are required for an optimized process.

Advantage 2: Easy operation

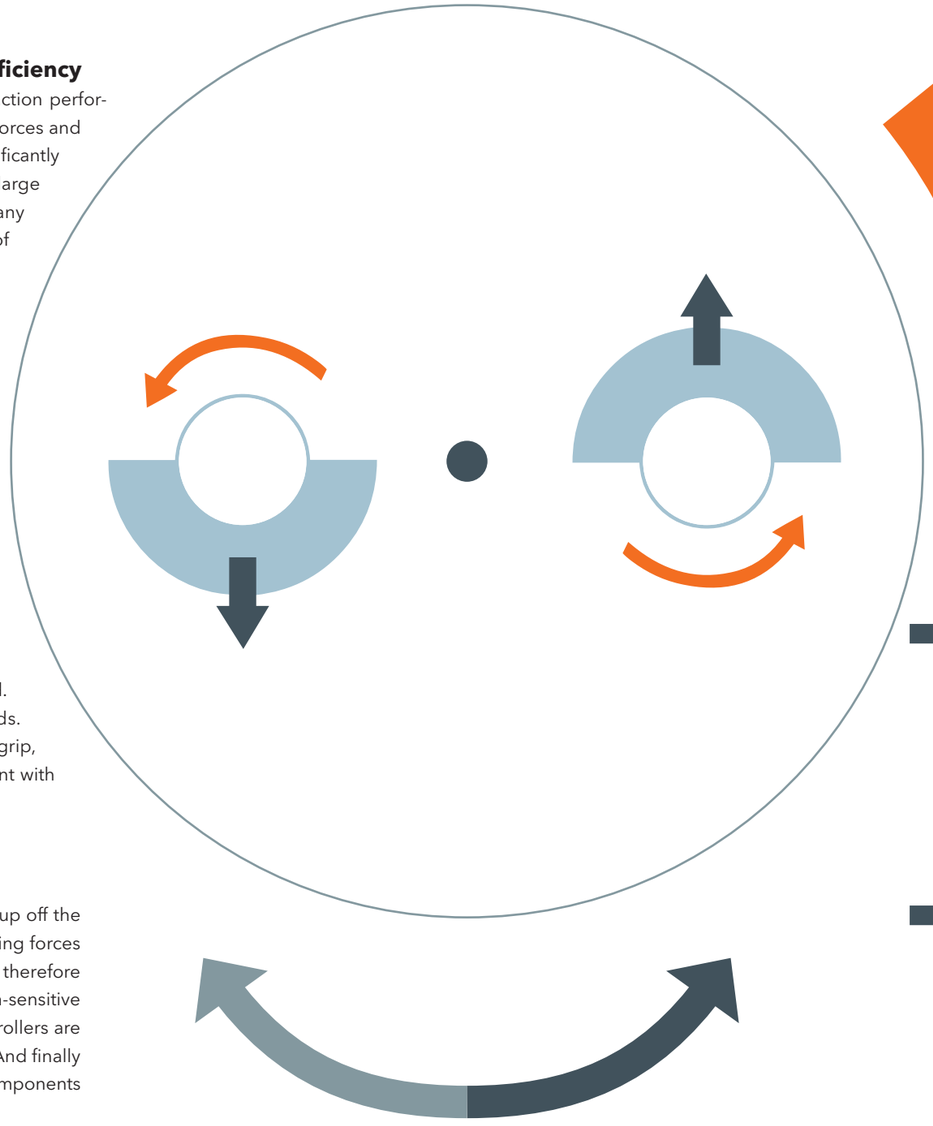
To generate vibration, HAMM harness the laws of physics in such a way that oscillation rollers are extremely easy to operate. Just switch on the machine and it automatically sets the right amplitude based on the rigidity of the material to be compacted. And it adjusts so quickly that compaction is at the optimal setting at all times, even when the type of ground varies. This way, HAMM also prevent operating errors caused by choosing the wrong settings.

Advantage 3: Level, non-skid surfaces

Oscillation rollers produce surfaces with outstanding longitudinal evenness, because the drum is in continuous contact with the ground. What is more, no undulations result, even at high operating speeds. Asphalt compaction with oscillation also produces an excellent initial grip, because the drum abrades the bitumen on the surface of the pavement with its oscillating motion.

Advantage 4: Low vibration load

In comparison with vibration technology, oscillation drums do not rise up off the ground during compaction and therefore only about 15% of the vibrating forces are conducted into the ground around the roller. Oscillation rollers can therefore easily be used for dynamic compaction in the direct vicinity of vibration-sensitive buildings or systems. Because they generate less vibration, oscillation rollers are also considerably quieter and contribute to environmental protection. And finally but importantly, low-vibration compaction is easier on all the machine components and relieves some of the stress on the roller operator.



The principle of oscillation

With vibration technology, a single eccentric shaft is responsible for the up and down motion of the drum. It hits the ground at high frequency. In contrast, two eccentric shafts rotate synchronously in the oscillation rollers, driven by a toothed belt. The eccentric shafts are mounted at an offset of 180°, which causes the drum to execute a rapidly alternating forward-backward rotation.

This motion conducts the compaction power, in the form of tangential shear forces into the ground towards the front and back. Unlike with vibrating roller drums, the compaction power acts continuously on the ground, because the drum is in continuous contact with it. Oscillation rollers thus compact dynamically but also statically at all times on account of their machine weight.

Advantage 5: Compaction does not damage the paving material

In vibration compaction, above a certain rigidity level, you risk destroying the material structure or destroying the grain. This is not the case with oscillation, which ensures non-destructive redistribution of the grain. In other words, oscillation avoids grain destruction or over-compaction. What is more, oscillation compaction produces dense, durable joints without damaging the cold asphalt.

Advantage 6: Wider temperature window

With oscillation, you widen the temperature window in which compaction is possible, because non-destructive compaction is possible for oscillation rollers even at relatively low temperatures. Oscillation is therefore particularly suitable for compacting thin overlay or on rapidly cooling surfaces, like bridge decks. Furthermore, this characteristic enhances the flexibility of the construction process. »»

Clients worldwide are choosing oscillation

Building authorities and private clients know that dynamic compaction with oscillation improves quality in road construction. Not least because oscillation has proven its worth on major construction jobs. The rapid increase in the degree of density optimizes the process and fewer passes are required. It's no wonder then that using rollers with oscillation technology for compaction is an increasingly common requirement when rapid completion, quality and durability are of the essence. ///

Road construction site in Ithaca, New York: oscillation is as much in demand in the USA as it is in Europe and Asia.

11 units of HD O128V had quick and effective compaction to the urban interior elevated road with a total length of 28km. Due to high construction efficiency, eliminating the resonance vibration and noise impact on the surrounding environment to great extent.

Construction of the Hong Kong-Zhuhai-Macao bridge in southern China: oscillation rollers dynamically compacted the thin asphalt overlay on the 35km-long bridge. The resultant surface was of outstanding quality, thanks to HAMM technology.

Construction of motorway section on the A61, Germany: oscillation rollers from HAMM achieved a high compacting performance and premium quality results.

Compaction of filling material between cement plates, HD 13 VO oscillation technology ensures that the filling material is fully compacted and didn't cause any damage to the original cement concrete plates.

Constructing the Formula 1 track in Baku, Azerbaijan: when building this city circuit, a premium-quality asphalt surface had to be produced despite confined conditions as well as underground parking decks and pipelines. Oscillation rollers were therefore mandatory on this job.

The HD O138V worked with a GRW 280 on a road rehabilitation project, fully displayed excellent construction technique and quality results. The oscillation roller had initial compaction on recycling mixture and the pneumatic tyre roller final compaction.

Traffic routing on multiple levels for faster mobility: urban canyon in Hong Kong.

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