

RoadNews

for new roads

The WIRTGEN GROUP User Magazine for China // No 01

 WIRTGEN

 VÖGELE

 HAMM

 KLEEMANN

 BENNINGHOVEN

Road and Mineral Technologies
from the WIRTGEN GROUP at Bauma China 2016

INNOVATIONS
TO THE POWER OF



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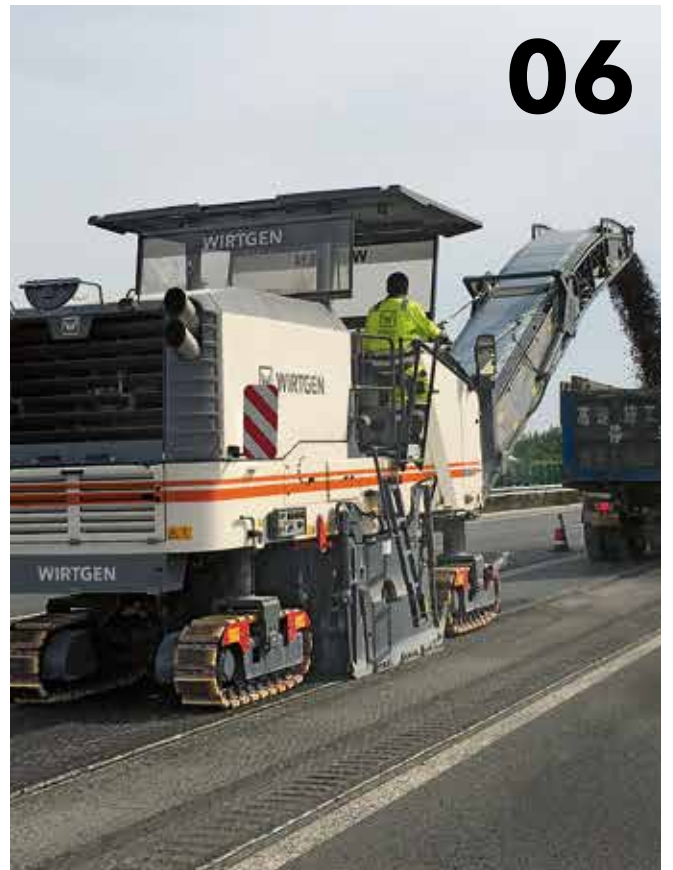
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Road construction power of 5

The WIRTGEN GROUP is the world's first and only enterprise to cover the entire process chain in road construction with its own technologies and premium brands: from crushing and screening, through mixing, paving and compaction

to milling and recycling. All from a single source. Reason enough to present this concentrated competence in Road and Mineral Technologies in our RoadNews.

KLEEMANN

KLEEMANN are an innovative manufacturer of mobile crushers and screens. We combine cutting-edge technology with outstanding applications know-how and offer our customers cost-efficient solutions that meet the highest quality standards.

BENNINGHOVEN

BENNINGHOVEN build the world's leading asphalt mixing plants. From assistance with planning starting on day one all the way up to final commissioning, we reliably support our customers' projects, providing made-to-measure solutions on request. With us, an ideal mix is guaranteed.

VÖGELE

VÖGELE are the technological leader worldwide and the No. 1 for pavers. In the world's most modern paver production facility, VÖGELE build machines of the highest standards and quality. Our customers benefit from a complete product range that continually raises the bar when it comes to ease of use and innovations.



on to the

In future, you will find our complete range of topics right here. For you, that means more know-how, more variety and even more job site reports from the world of road construction all in one magazine. Welcome to the new WIRTGEN GROUP RoadNews magazine.

HAMM

HAMM lead the world market for rollers and build innovative, high-quality compactors for road construction and earthworks. Our comprehensive product range includes the most advanced, intelligently designed, user-friendly products and solutions, meeting our customers' highest demands in terms of quality and cost-efficiency.







WIRTGEN

WIRTGEN not only lead the market for cold milling machines and recyclers used in road construction, they are also the quality and technological leader for slipform pavers and surface miners. Our mission is to deliver pioneering products and technologies, giving our customers a valuable competitive edge. And we gladly go the extra mile to achieve that aim.






Editorial

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Dear Reader,

This is the first edition of the new WIRTGEN GROUP RoadNews magazine. We look forward to reporting on exciting new technologies and innovations, information from the field of applications technology and impressive job sites. And from now on, all five WIRTGEN GROUP brands will be covered. Our editorial teams will be putting heart and soul into preparing professional reports and technical articles on WIRTGEN, VÖGELE, HAMM, KLEEMANN and BENNINGHOVEN. RoadNews China will always keep you right up to date on state-of-the-art developments and all the most important themes affecting our industry.

This edition naturally focuses on Bauma China 2016 in Shanghai. And how could it be otherwise? This year, too, the WIRTGEN GROUP will once more be presenting a host of attractive innovations and pioneering WIRTGEN GROUP technologies in China at Asia's biggest and most important road construction machine trade fair. This edition of RoadNews China provides an overview of our latest innovations.

We hope you enjoy reading this first edition of the WIRTGEN GROUP RoadNews for China.

Best wishes,



Ulrich Reichert
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WIRTGEN (CHINA)
Machinery Co., Ltd.

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Close to our customers to the power of 5

In China, the WIRTGEN GROUP will be demonstrating its strength, showcasing its latest innovations at Bauma China 2016.

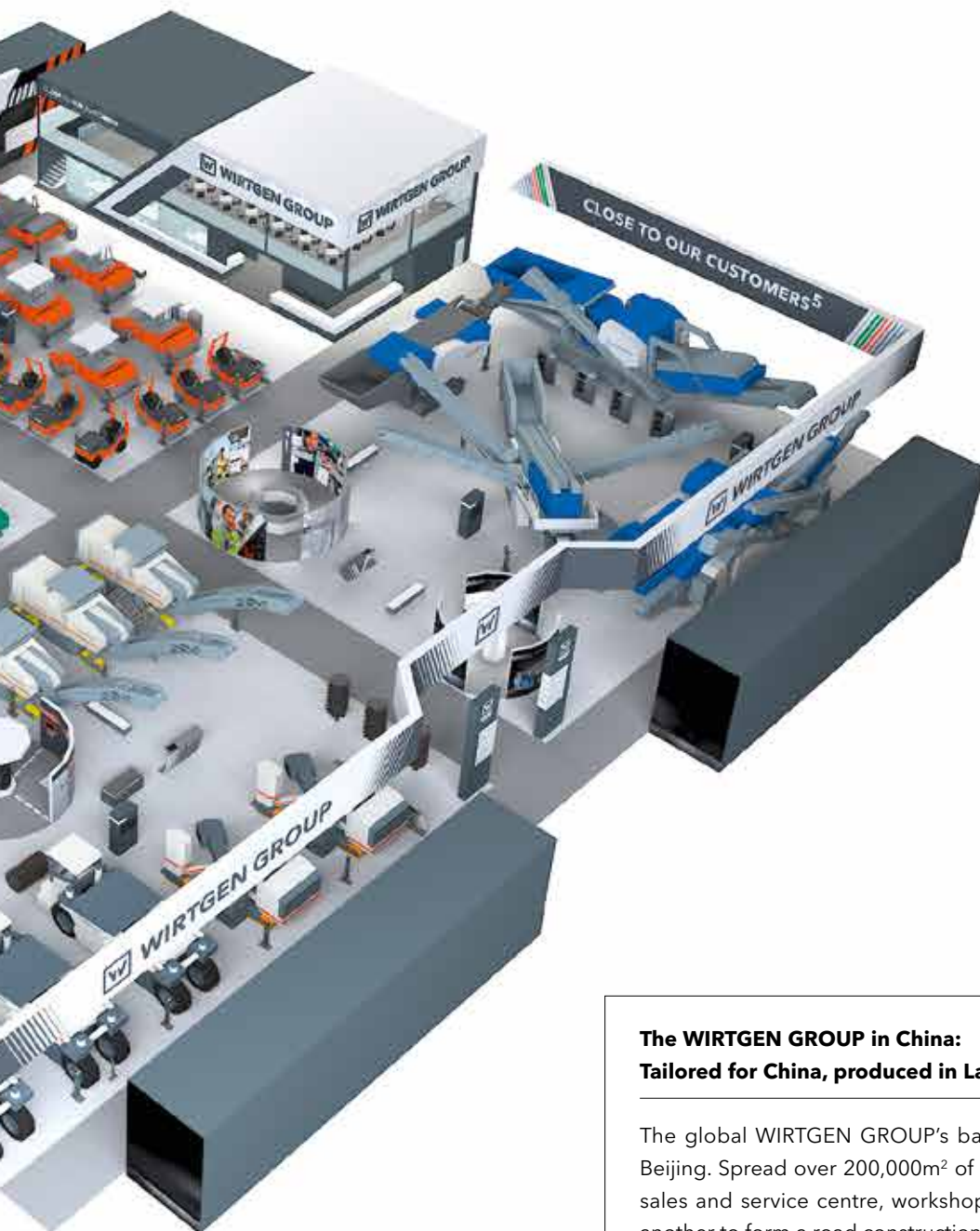


At Bauma China 2016, visitors can literally “feel” the WIRTGEN GROUP’s mission to always be close to their customers. The WIRTGEN GROUP in China has once again enlarged its already exceedingly wide, high-performance product range. This is evidenced by the uncompromising focus on customer and user needs, true to the central pledge of the WIRTGEN GROUP: Close to our customers.

This pledge is also expressed in the exhibition motto: Close to our customers to the power of 5. The power of 5 has a special meaning: at Bauma China 2016, visitors will be given comprehensive information on BENNINGHOVEN, the new product brand of the WIRTGEN GROUP. Steeped in a long and rich tradition, this manufacturer of leading technologies centred on asphalt processing – including granulators for asphalt recycling, mastic asphalt technology and burners for asphalt mix systems – represents an ideal supplement to the product range. As a result, the WIRTGEN GROUP in China can now offer its customers solutions for the complete road construction cycle from a single source: crushing, processing, paving, compaction and rehabilitation.

The other product brands from the Road and Mineral Technologies business sectors – WIRTGEN, VÖGELE, HAMM and KLEEMANN – will also be presenting true innovations in Shanghai in the form of new machines, technologies and services. The following pages present an overview of the most important exhibition highlights presented by the five product brands of the WIRTGEN GROUP.





**The WIRTGEN GROUP in China:
Tailored for China, produced in Langfang**

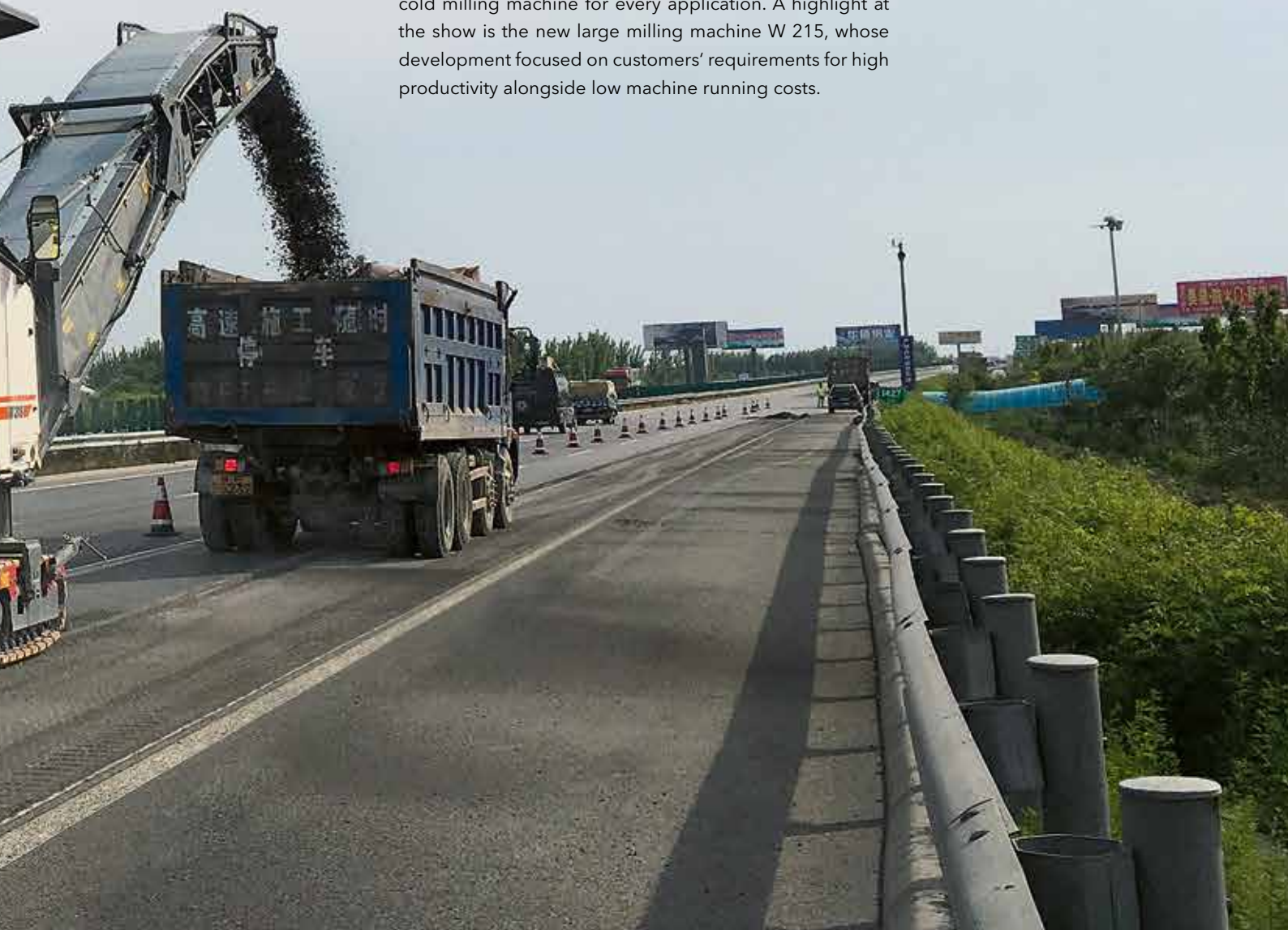
The global WIRTGEN GROUP's base in China is located in Langfang, near Beijing. Spread over 200,000m² of company grounds, the production facility, sales and service centre, workshop and spare parts store complement one another to form a road construction competence centre that is unique in all of China. WIRTGEN cold milling machines, VÖGELE road pavers and HAMM rollers are specially developed, built and marketed here to suit the local demands of road construction. The plant upholds the same, high quality standards as the brand headquarters in Germany.



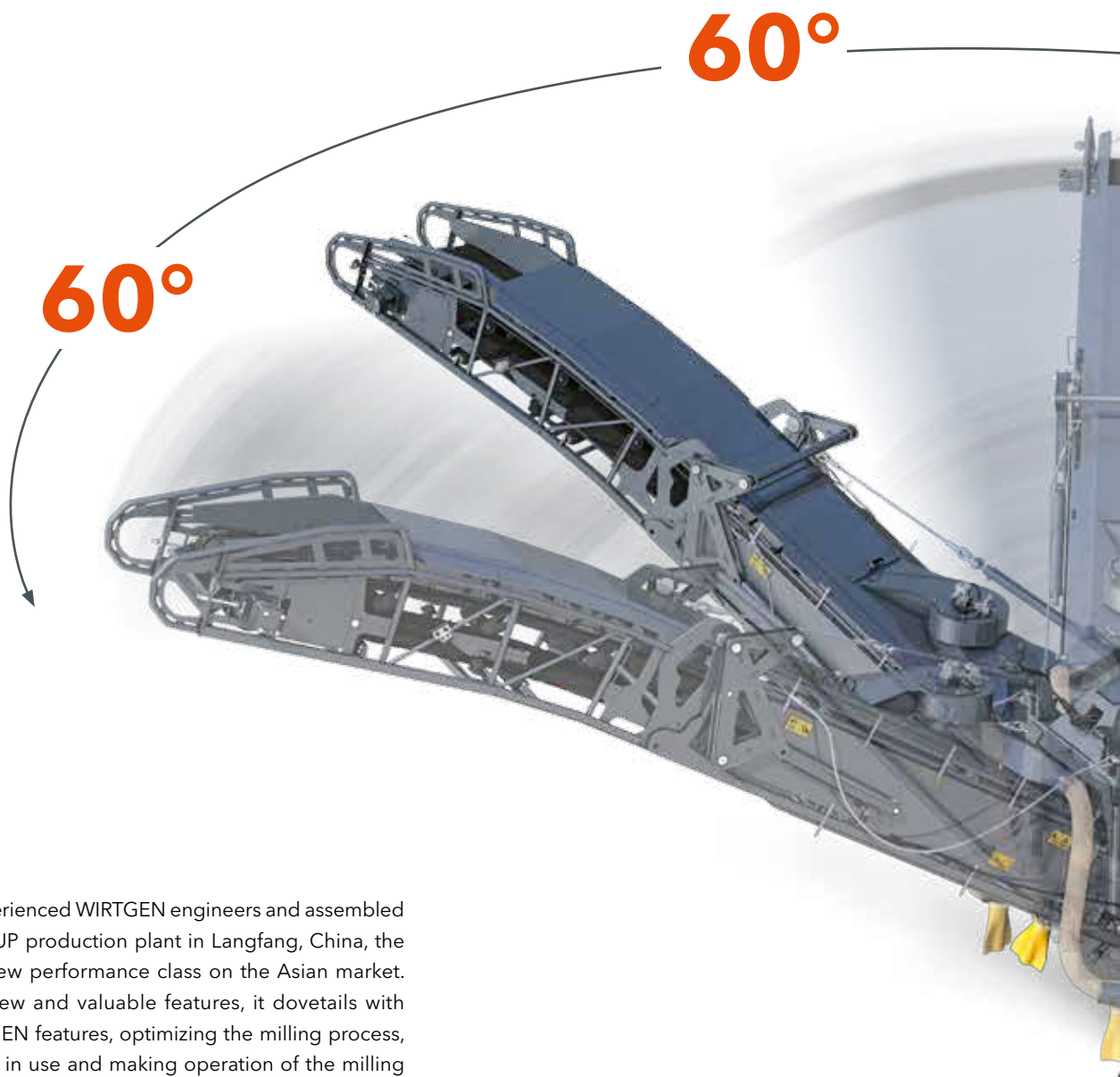
Asia's new flagship is launched

World premiere: WIRTGEN unveil
new cold milling machine W 215.

As market leader, WIRTGEN offer their customers the largest range of cold milling machines industry-wide, with milling widths ranging up to 4.4m. Whether small, compact or large, the road rehabilitation specialist can supply a suitable cold milling machine for every application. A highlight at the show is the new large milling machine W 215, whose development focused on customers' requirements for high productivity alongside low machine running costs.



New WIRTGEN large milling machine W 215: High performance, high efficiency



Developed by the experienced WIRTGEN engineers and assembled in the WIRTGEN GROUP production plant in Langfang, China, the W 215 represents a new performance class on the Asian market. With a multitude of new and valuable features, it dovetails with the established WIRTGEN features, optimizing the milling process, offering high flexibility in use and making operation of the milling machine considerably easier.

Simple operation promotes the work process

The chassis of the new W 215 is much narrower, giving the driver an improved view of the milled edge. LEVEL PRO PLUS, the brand-new levelling system developed by WIRTGEN, has been completely integrated into the machine's control system, where it ensures a precise, high-quality milled result thanks to its simple, intuitive operation. The preset target milling depth is accurately controlled via robust displacement sensors located in the hydraulic cylinders which are mounted on the side plates. It is indicated on the high-resolution LEVEL PRO PLUS colour display.

The extra-wide discharge conveyor and a slewing angle of 60° to both the left and right enable the milled material to be loaded quickly and flexibly.



Positioning of the large milling machine W 215

- › High-performance 2m milling machine with tremendous milling output
- › Minimized diesel and tool consumption maximizes cost savings
- › Ease of operation and precision control
- › FCS light for a broad range of applications
- › Exceptionally rugged and durable machine for milling pros





The very clear arrangement of the controls and the robust operating display simplify operation of the W 215.

High performance: 25% more power for reliable milling

More power equals more output equals faster working. This equation adds up because the W 215 offers 25% more milling output. Equipped with a 470kW diesel engine, the large milling machine delivers enormous engine power yet still consumes less fuel per cubic metre of milled asphalt. Three variably selectable milling drum speeds individually ensure the maximum milling performance across a wide range of applications. The high-precision steering system on the front and rear crawler tracks also make for superb manoeuvrability.

Intelligent solutions for milling drum and discharge conveyor

The milling drum assembly is bursting with technology. "Delta 18", for instance, the new milling drum technology, guarantees a high milling output while reducing cutter costs. Incorporating additional ingenious solutions in milling and loading, the W 215 does its job very flexibly while attaining a high level of performance. Combined with a faster conveyor speed, the extra-wide loading conveyor achieves a phenomenal output, permitting continuous RAP loading. The conveyor's extremely wide slewing angle of 60° to both the left and the right makes it possible to transfer material even on difficult job sites, such as at roundabouts or intersections.


FCS Light: Maximum range of applications

With the Flexible Cutter System Light, or FCS Light for short, WIRTGEN offer the optimum solution for high capacity utilization of the machine: milling drums with different tool spacings can be exchanged in a short space of time. That makes it possible to perform a range of milling operations with one and the same machine. As a result, the W 215 is extremely versatile to use, covering everything from standard

applications through fine milling for the creation of new, level road surfaces to the use of what are known as ECO cutters for a particularly high area performance - up more than 20% on standard milling drums. This increases the capacity utilization of the large milling machine, boosting its economic efficiency in the process.



FCS Light:
Application flexibility to the power of three



ECO cutter
Milling width: 2,000mm
Milling depth: 0 - 330mm
Tool spacing: 25mm



Standard milling drum
Milling width: 2,000mm
Milling depth: 0 - 330mm
Tool spacing: 18mm



Micro-fine milling drum
Milling width: 2,000mm
Milling depth: 0 - 30mm
Tool spacing: 6 x 2mm

Cutting operating costs with WIDRIVE

To minimize the need for manual interventions in the milling process, the operator is supported by intelligent, computer-aided automatic functions. In WIRTGEN's high-performance cold milling machines such as the W 215, for instance, the operator is supported by the WIDRIVE machine management concept – a proprietary WIRTGEN

development – that is integrated into the machine. WIDRIVE allows the diesel engine, the advance, milling drum and conveyor drives, the water system and the LEVEL PRO PLUS levelling system to be controlled centrally, eliminating some 50% of the manual interventions usually required of the operator.

Control system

The intelligent machine control system allows work processes to be automated effectively. A wide range of sensor signals are processed and converted into mechanical motion or physical variables by means of actuating elements (e.g. hydraulic control valves or electrical switches). Actual and set values are constantly compared and corrected.

Conveyor drive

The automatically controlled speed of the discharge conveyor guarantees minimum wear on the belt, which is fitted with large belt cleats. The belt stops automatically on reverse travel, improving occupational safety.

Advance drive

The ISC (Intelligent Speed Control) traction control system controls the advance of the machine within the optimum engine utilization range and minimizes the slippage of individual crawler tracks, guaranteeing optimum traction for the best milling results.





LEVEL PRO PLUS levelling system

Precision and easily understandable operation – that's what LEVEL PRO PLUS, the intuitive and ergonomic levelling system developed by WIRTGEN, delivers. It supplies information about the levelling process, allowing the milling depth to be controlled from the operator's stand.

Diesel engine

Speed is adjusted automatically in line with the work process in order to reduce diesel consumption.

Water system

In milling mode, WIDRIVE regulates the activation and deactivation of the water system automatically, reducing water consumption by 30 to 40%.



Half a metre, all the versatility

Premiere in Shanghai: New small milling machines W 50 H and W 55 H.

The WIRTGEN W 50 H and W 55 H machines are cost-efficient all-round machines for all standard small milling tasks. The spacious operator's stand, the intuitively operated control panels and the unobscured view of the edge being milled all add up to a cleverly designed workplace that is tailored to the operator. A large locking angle to either side and a maximum speed of 8km/h allow the machine to be relocated quickly and easily on the job site. All-wheel drive and a four-wheeled chassis deliver the best possible traction and stability on the road. The 82kW diesel engine of the half-metre small milling machines ensures powerful and efficient processing of the surface to be milled. Both machines can achieve a maximum milling depth of 180mm at a working width of 500mm. To make them even more versatile, a variety of milling drums is available.

Positioning of the small milling machine W 50 H / W 55 H

- › High-powered, highly manoeuvrable half-metre small milling machine for economical milling operations
- › Large choice of milling drums for a tremendous range of applications
- › Low diesel and tool consumption for increased cost efficiency
- › State-of-the-art machine control also with integrated LEVEL PRO levelling system
- › Compact machine also available in rear-loading design

With its loading conveyor, the WIRTGEN small milling machine W 55 H can transfer the milled material straight to a lorry. The new milling machine will be presented to the trade for the first time at Bauma China.



The top-performing WR 250

The WR 250 is a high-performance machine with a 2,400mm working width designed to cater to particularly demanding applications. Its tremendous milling and mixing performance enables the WR 250 to tackle even the toughest jobs in soil stabilization and pulverize hard asphalt layers. With a host of advantages to recommend it, the WR 250 represents the yardstick when it comes to handling the greatest challenges in soil stabilization and cold recycling.



The fantastic three

The finely calibrated WIRTGEN WR series has the right product for every requirement in soil stabilization and cold recycling.

The multipurpose WR 240

The WR 240 is the all-rounder in the WIRTGEN fleet with a 2,400mm working width. It offers maximum flexibility for all applications in soil stabilization and cold recycling thanks to its large working width and working depth paired with high milling and mixing performance.

The compact WR 200

The WR 200 is easy to transport thanks to its compact design and low weight. The machine is suitable for a wide range of applications in both soil stabilization and cold recycling.



The wheeled recyclers and soil stabilizers are suitable for efficiently stabilizing soils with insufficient load-bearing capacity over a large area and are equally proficient at rehabilitating damaged asphalt surfaces.

More quality in earthworks: Soil stabilization with the WR series



SOIL STABILIZATION WITH LIME

The binding agent spreader distributes lime as the binding agent. Behind it, the powerful milling and mixing rotor of the WIRTGEN WR mixes the soil with the pre-spread binding agent to form a homogeneous mass. After precompaction with a HAMM compactor and subsequent grading with a motor grader, HAMM rollers compact the soil.





Stability for soils with insufficient load-bearing capacity

Heavy, boggy soil makes life hard for road-builders, because roads need a reliable base. That is why the load-bearing capacity of the soil must be assured before every road construction project. Soil stabilizers transform soils with insufficient load-bearing capacity into ground with ideal properties for paving and compacting.

Delivering high performance at low cost

Soil stabilization is a far superior option to soil exchange as it requires fewer lorry transports, results in shorter construction times, saves resources and reduces CO₂ emissions. When operating as a soil stabilizer, the WR uses its powerful milling and mixing rotor to mix pre-spread binding agents, such as lime or cement, into the existing, insufficiently stable soil at working depths of up to 560mm to convert it into a construction material of high quality in an in-situ process. The resulting homogeneous soil-binder mixture offers high comprehensive strength and shear strength values as well as long term water resistance, frost resistance and volume stability. Typical applications include the construction of path, roads, motorways, foundations, parking lots, sports grounds, industrial parks or facilities, airports, embankments, backfills or landfills.

Its perfect ergonomic design and visibility concept, high performance and excellent mixing quality, maximum all-terrain mobility, automated features and numerous other highlights make the WR a pioneer on all soil stabilization sites in terms of delivering high performance at low cost.



More quality in road construction: Recycling with the WR series

When used for recycling, a WR machine mills and granulates asphalt pavements, injects binding agents and water in precisely metered quantities and mixes everything together – all in a single operation. Lime, cement, water, bitumen emulsion and foamed bitumen can be used as additives and binding agents. The thorough mixing

of the milled material with binding agent and water and the ease and simplicity of operation together with precise levelling ensure optimum work results – from recycling thin asphalt layers on minor roads to recycling asphalt courses up to 250mm thick on highly frequented, heavily trafficked motorways.



RECYCLING WITH CEMENT SLURRY AND FOAMED BITUMEN

A bitumen tanker and WIRTGEN WM 1000 slurry mixer supply the WIRTGEN wheeled recycler with binding agents. The powerful milling and mixing rotor of the recycler granulates the damaged layers. At the same time, foamed bitumen and a water-cement slurry is injected by two microprocessor-controlled injection bars. Once the prepared material has been finish-graded, it is compacted by a variety of HAMM rollers.



Cost-effective cutting technology

Cutting technology is a core competence of WIRTGEN. A long service life and high machine output depend above all on optimum interaction between milling drum, toolholder and cutting tool. At Bauma 2016, WIRTGEN are presenting new developments specially designed to meet requirements in cold recycling, soil stabilization and cold milling.

Cold recycling and soil stabilization

WIRTGEN will be presenting two optimally matched innovations that meet the special requirements of cold recycling and soil stabilization: the point-attack cutting tools of GENERATION Z and the HT22 quick-change toolholder system.

Next cutter generation for cold recycling and soil stabilization

The GENERATION Z point-attack cutting tools for WIRTGEN cold recyclers and soil stabilizers have been significantly revised to cater to current demands in the mixing and cutting process. For one thing, the reshaped carbide tip has been additionally reinforced and the quality of the carbide material precisely tailored to meet requirements. In addition, the steel body, wear plate and clamping sleeve have been optimized with regard to their wearing properties. All these features help to extend the tool life of the cutters and to prolong protection of the toolholder.



The WIRTGEN cold recyclers' and soil stabilizers' performance and cost-efficiency are improved by the quick-change toolholder system HT22 in combination with point-attack cutting tools of the new GENERATION Z.



The new SP 60 series combines the range of applications of the globally successful SP 500 model with the state-of-the-art technologies of the next biggest series, the SP 90.

Precise and cost-efficient paving

With the slipform paver SP 64 and the texture curing machine TCM 180, WIRTGEN offer flexible solutions for high-grade concrete paving, be it for inset or offset applications.



SP 60 series: Unrivalled for inset and offset applications



TCM 180: A handy solution

Self-propelled curing units, such as the new TCM 180 from WIRTGEN, guarantee the success of professionally cured concrete surface courses. As soon as concrete has been placed by the slipform paver it must be protected without delay to prevent drying out, as this causes tension which, in turn, leads to cracks. The modular design of the TCM 180 permits working widths between 4m and 18m. The new engine meets the latest emission standards and can be fitted with an additional diesel particulate filter (DPF). Thanks to the new operating concept, operation is now intuitive, as on the WIRTGEN slipform pavers of the SP 90 and SP 60 series. The range of possible surface textures has likewise been enlarged.

Together with the SP 61 and SP 62 models, the SP 64 makes up the new SP 60 series that will replace the SP 500 slipform paver in future. The SP 64 can optionally be fitted with four hydraulically operated swivel arms for the crawler tracks, allowing it to change from travel mode to working mode even more rapidly than the SP 500. In combination with the Paving Plus package, also available as an option, the swivel arms can actively bypass obstacles during the paving process. A walkway, for the first time available across the full width of the machine, a central control system and four additional decentralized control systems provided as standard permit simple and at the same time flexible operation of the machine. Remote controls can be connected to each of the crawler tracks to speed up the process of setting up the slipform paver, such as positioning and zeroing the crawler tracks and swivel arms. Adding further machine components to cater to complex, customer-specific job requirements is a simple process, enabling the SP 60 series to handle a wide variety of applications. In addition to different mould



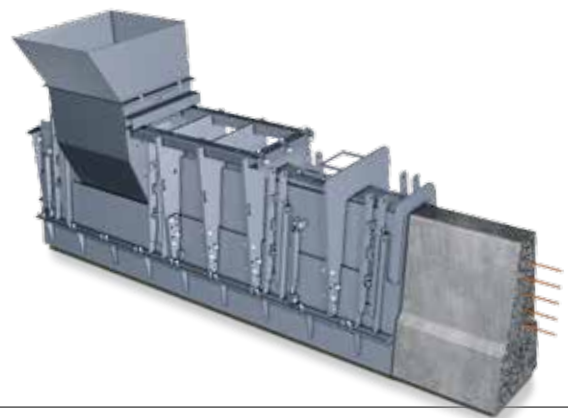
Great versatility and excellent quality for both inset and offset operations: with their fully developed technologies, WIRTGEN slipform pavers can tackle almost any conceivable design, including special shapes.

systems for inset applications, offset moulds can also be fitted with options typically required in offset paving, such as trimmers and a variety of conveyors and augers for feeding the offset mould.

Pave widths up to 7.5m

Inset slipforming allows the SP 64 (four crawler tracks on swivel arms) and SP 62 (track steering) to pave slabs up to 6m wide and, in the standard version, up to 350mm thick. Even widths of up to 7.5m can be paved when working with electric vibration (without a dowel bar inserter).

In offset operation, the SP 60 series and in particular the SP 61 in the versions with three or four crawler tracks can pave small to large monolithic profiles. Whether standard or customized, contours of almost any shape or size are produced cost-efficiently and in a high quality.



Offset applications: The right slipform for all profiles

WIRTGEN supply a large variety of slipforms for monolithic concrete profiles, such as robust safety barriers and roadway edgings, water gulleys or narrow paths.

The robust all-rounder...

VÖGELE are presenting two new pavers in the Universal Class:
the multifunctional paver SUPER 1880 L and the asphalt specialist SUPER 1880-3 L.



The robust multifunctional paver for cement-treated base and for asphalt: the SUPER 1880 L with a maximum pave width of 9.5m.

SUPER 1880 L: Multifunctional paver for cement-treated base and asphalt

A machine that gives as good as it gets – that's the SUPER 1880 L. Among the highlights of the particularly robustly designed paver is the large layer thickness of up to 50cm. When combined with a Heavy-Duty kit, it can even be used for laying cement-treated bases. Reinforced guards for the conveyor tunnel and the chassis, as well as modified auger blades, help to withstand high abrasive wear. The SB 300 HDT Fixed-Width Screed reliably withstands high stresses. It is fitted with a tamper for compaction and electric screed heating, allowing the screed to produce a high quality of asphalt. In addition, the VÖGELE AB 500 TV Extending Screed can be used for asphalt paving.

Smooth and precise operation thanks to ErgoBasic

The goal in developing the SUPER 1880 L was to offer leading technology at an attractive price. One feature that was key in achieving this is the new ErgoBasic operating concept. In terms of functionality, ergonomics and design, it is based on the ErgoPlus 3 operating system installed in VÖGELE's modern large pavers – and is perfectly tailored to the applications of the multifunctional paver.

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New Universal Class paver delivering 158kW: Great power, high efficiency

The new pavers are supremely proficient in the all-important 9.5m class. Thanks to their powerful material handling system, the SUPER 1880-3 L and the SUPER 1880 L can lay down as much as 1,000t of material per hour. To ensure that both pavers actually achieve these high targets in tough everyday use, they are equipped with an extra-long and particularly low material hopper that allows easy feeding from all lorry types common in China. A 158kW Dongfeng Cummins diesel engine drives the crawler tracks and the material handling system to maximum performance.

... and the innovative specialist.

SUPER 1880-3 L: The ultra-modern paver of the "Dash 3" generation.



The innovative high-grade asphalt specialist SUPER 1880-3 L with a maximum working width of 9.5m.



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The innovative high-grade paver is an acknowledged specialist in paving asphalt with premium quality results. It is simply bursting with innovations, such as hydraulic auger height adjustment for precise adaptation to different layer thicknesses and cutting-edge screed technology with electric heating. Also on board is the VÖGELE EcoPlus low-emissions package. It delivers a significant reduction in fuel consumption thanks to measures such as a splitter gearbox with the ability to disengage hydraulic pumps, the energy-optimized tamper, an efficient hydraulic oil temperature circuit and a variable-speed fan. The principle behind it? Systems that are not needed are deactivated – and consequently use no fuel. By these means, VÖGELE EcoPlus makes a huge contribution to both environmental compatibility and profitability.

Innovative ErgoPlus 3 operating system

With its innovative “Dash 3” technology, the SUPER 1880-3 L raises the bar even higher when it comes to workplace and operating comfort, energy efficiency and pavement quality. Not least thanks to ErgoPlus 3. Alongside the clear, logically arranged consoles and remote control units for paver operators and screed operators, the operating concept also features an ergonomic operator platform offering an exceptionally good view of all the main points on the job site and the paver.



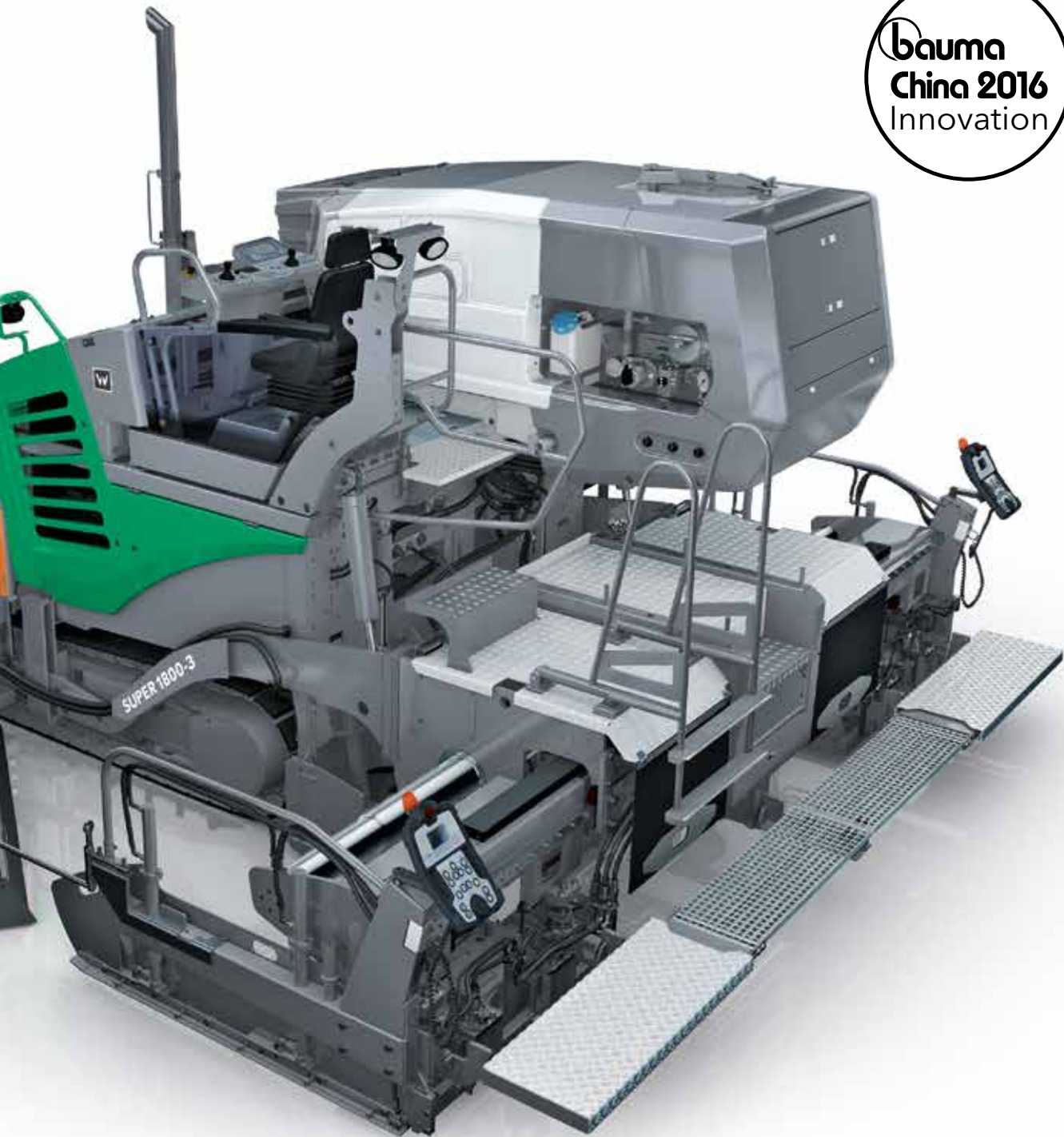
»» Experience the new Universal Class pavers in action - read the first field reports beginning on page 56.

The innovation that eliminates an entire pass

Up front with leading-edge technology: SUPER 1800-3 SprayJet, the “Dash 3” generation paver for spraying as well as for standard paving jobs.

**The innovations of the spray paver
are all designed with one aim in mind:
to improve the bond between layers
and hence the pavement quality.**







Unequalled - Highlights of the SUPER 1800-3 SprayJet:

- › World's only spray paver for paving thin overlay as well as conventional surface and binder courses
- › The bitumen emulsion is applied and the asphalt paved in a single pass - without soiling and in a variable working width
- › Emulsion sprayed at a rate of 0.3 to 1.6kg/m² in a clean and controlled process
- › Electrically heated tank for bitumen emulsion (2,100 litres as standard, can be increased to 7,100 litres with optional extra tank)
- › Incorporates all the advantages of the "Dash 3" paver generation
- › Control panel for the SprayJet module integrated into the ErgoPlus 3 operating concept
- › Ultramodern ErgoPlus 3 operating concept for paver and spray module
- › AutoSet Plus automatic functions for rapid relocation of the paver on the job site and storage of paving programs



VÖGELE SUPER 1800-3 SprayJet: Spray paver, standard paver, pioneer

There can be no reliable bond between layers without a tack coat: this principle has always been considered sacrosanct when it comes to paving multi-layer asphalt pavements. Yet VÖGELE have refined the process of applying the bitumen emulsion – and attained a new level of efficiency. The result is the SUPER 1800-3 SprayJet, which combines cutting-edge technology with outstanding process safety. The spray paver comes with a SprayJet module that consists of a heated emulsion tank, five spray bars for applying the emulsion and the control panel for the SprayJet module integrated into the ErgoPlus 3 operating concept. That makes the spray paver as easy to operate as a standard paver – and it can also be used as one, with pave widths of up to 9m as opposed to 6m when used as a spray paver.

Spraying and paving in a single pass – With compelling benefits

When used as a spray paver, the SUPER 1800-3 SprayJet offers an array of compelling benefits. All the difficulties that spraying entails are now a thing of the past. For instance, thanks to its ingeniously designed spray nozzles, which operate in pulsed mode, the SprayJet module effectively prevents misting and soiling of the job site area. In addition, the emulsion is applied immediately before the asphalt pavement is laid, producing an intensive bond between layers – partly also because lorries do not drive over the pre-sprayed area. And of course the SprayJet module eliminates an entire pass – spraying with bitumen emulsion – a step that previously had to be carried out by a separate machine, requiring additional manpower.

Innovations that pay off: The machine technology of the SUPER 1800-3 and the SprayJet module

1. The unique VÖGELE SprayJet module

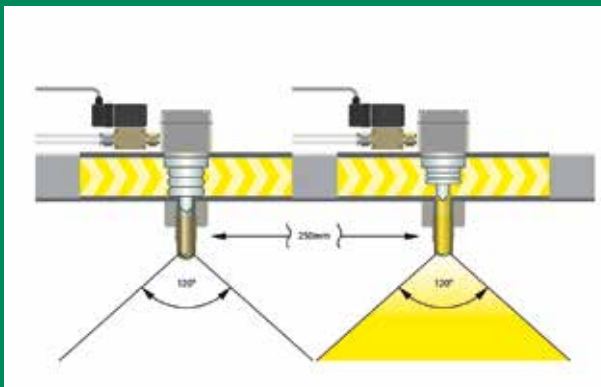
VÖGELE are uncompromising when it comes to technology, as is evident from the SprayJet module. Integrated electric heating delivering 2x7kW, for instance, brings the emulsion in the insulated tank up to the ideal temperature for spraying. An emulsion pump, which is also heated, circulates the bitumen emulsion in the tank, ensuring it remains homogeneous. The tank itself is already capacious with a capacity of 2,100 litres. An optional extra tank brings the volume up to 7,100 litres. The emulsion tank has a filling port on the right and left side, allowing it to be filled up from either side – depending on the situation on the job site – without interrupting operation. And a compressed air system is integrated into the SprayJet module for pneumatic operation of the nozzles on the spray bar.

It is easy to convert the machine from a spray paver to a standard paver: if the SUPER 1800-3 SprayJet is to be used for conventional paving for a long period, the SprayJet module can be dismantled quickly and with the minimum of fuss. When used for conventional paving, the possible pave width increases from 6m to 9m.



2. Intelligent spray technology

The VÖGELE SUPER 1800-3 SprayJet has five spray bars with a total of 24 high-quality spray nozzles. Spaced 250mm apart with a spray cone of 120°, these ensure the seamless application of emulsion. Depending on the type of emulsion and nozzle size, the rate of spread can be varied between 0.3 and 1.6kg/m². All the paver operator has to do is set the required quantity before spraying starts. This produces an absolutely uniform film of emulsion which covers the entire surface without overlaps. The nozzles of the VÖGELE SUPER 1800-3 SprayJet operate in pulsed mode rather than continuously. This, combined with the low spraying pressure of just 3 bar, means that misting is almost completely prevented.



3. VÖGELE extending screeds for perfect pavement quality

The AB 500 and AB 600 Extending Screeds are available for the SUPER 1800-3 SprayJet. Both can achieve spray widths up to 6m. The AB 600 comes with a basic width of 3m and extends hydraulically up to 6m. The maximum pave width of the AB 500 can be built up with 75cm bolt-on extensions for 6m jobs. The screed's maximum width is limited electronically to 6m. If used as a standard paver without spray functionality, the maximum pave width is 9m with the AB 600 and 8.5m with the AB 500. Both screeds are available with tamper and vibrators and, in the TP1 version, with a pressure bar. Like all VÖGELE screeds, the two extending screeds are equipped with highly effective electric screed heating.

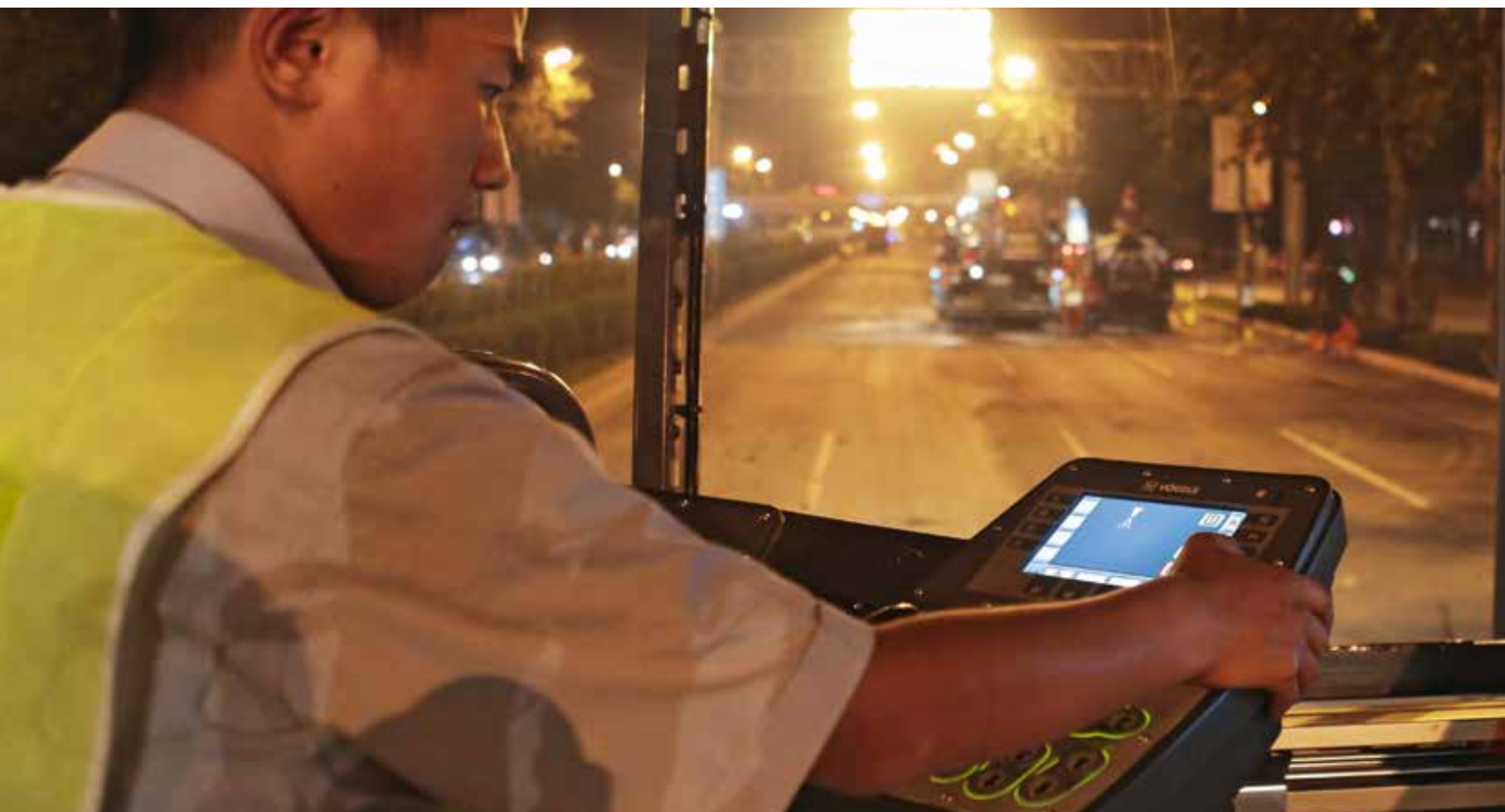


4. ErgoPlus 3 control panel for the SprayJet module

Operation has been made very simple to allow the operator to concentrate fully on paving, even when using the spray paver. The machine is operated using a colour touch-screen display of the SprayJet module whose design, symbols and functional principle VÖGELE have consistently based on the ErgoPlus 3 operating concept. It is mounted directly on the module, within easy reach of the paver operator, and offers a multitude of convenient automatic functions which cater to practical needs. For the operator, they simplify preparation of the spray module, the spraying process itself and maintenance of the spray module. All the settings required for replenishing, circulating and heating the emulsion can be entered and monitored directly via the touch screen.

5. Advanced "Dash 3" features

Be it the VÖGELE EcoPlus low-emissions package, or even the AutoSet Plus automatic function – all the innovations of the "Dash 3" paver generation from VÖGELE are also integrated in the SUPER 1800-3 SprayJet. After all, advanced, user-friendly technology is the foundation for perfect traffic surfaces. That is why all "Dash 3" features are consistently designed to improve the operator's control of the machine and the paving process, as well as to make the paver more eco-friendly. The ErgoPlus 3 operating system, for instance, which has long proven its worth on job sites, includes a new colour display with high-contrast screen that ensures outstanding visibility in all light conditions. And the innovative VÖGELE EcoPlus low-emissions package includes a number of features for significantly reducing fuel consumption and noise levels.



The SprayJet module is operated entirely via the touch screen integrated into the spray module.



6. Process safety thanks to automated work flows

Technology that actively prevents operator errors: on the new SUPER 1800-3 SprayJet, the circuits for spraying and circulating the emulsion as well as for cleaning the lines are switched automatically via electronically controlled ball valves. This makes operation of the individual functions very much simpler. Work sequences are set automatically in accordance with the function that has been selected and activated. For example, the control panel for the SprayJet module calculates the maximum pave speed as a function of the nozzle size used and the selected rate of spread and displays this value on the paver operator's ErgoPlus 3 console. This ensures uninterrupted application of the emulsion. The rate of spread can be set and the nozzles calibrated or individually activated and deactivated just as easily on the control panel of the module. In addition, the handy automatic functions "Start of Job" and "End of Job" are activated by the paver operator at the push of a button. This ensures that spraying begins and ends at exactly the desired point over the full pave width.



A compact machine that's big on performance

The new SUPER 700-3 from VÖGELE
is a small top-class paver.





The little giant - Highlights of the SUPER 700-3

- › Large range of uses, from backfilling narrow trenches and the construction of small and medium-sized roads to surfacing open areas with asphalt.
- › ErgoBasic operating concept ensures perfect all-round view and super-simple handling of paver and screed.
- › Deutz diesel engine with high power output of 54kW and ECO mode.
- › Ultra-modern AB 220 V Extending Screed with vibrators for pave widths from 0.5m to 3.2m.
- › Maximum laydown rate 250t/h.

The immense range of applications is its hallmark. With an outer track gauge of just 1.14m, a clearance width of 1.4m and a height of 1.98m, the new SUPER 700-3 has access to areas beyond the reach of other pavers. As a paver of the "Dash 3" Mini Class, it is the ideal candidate for cycle paths, footpaths, farm tracks, central reservations, spaces between tram tracks, small squares, industrial halls, underground parking areas or low projecting roofs.

Thanks to its hydraulically adjustable, asymmetrical hopper wall (option), lorries have no trouble feeding the paver with mix even in the most confined conditions. The SUPER 700-3 features a maximum pave width of 3.2m when fitted with the AB 220 V Extending Screed with vibrators, and a maximum pave speed of 30m/min. As a result, it is more than capable of handling larger projects, too. Thanks to the innovative ErgoBasic operating system and perfect all-round view, working with the machine is child's play.

Typical of the VÖGELE Mini Class: The new SUPER 700-3 is at home wherever confined conditions call for an extremely compact and manoeuvrable paver.

More than just compaction

HAMM compactors with (VC) crusher drum
break and compact rock in a single pass.



Breaking and compacting rock in a single pass – this is just what HAMM developed the 3625 HT VC compactor with crusher drum for. The key component of the 25t machine is a 2.22m-wide VC drum (VC = vibration crusher) with 150 picks. They break up the hard rock material with extremely high point loads while it is compacted by the vibrating drum.

This heavy-duty compactor, which can even handle gradients of more than 60% with ease, can improve efficiency, for example when building dams of rock in several layers. Pre-crushing or loosening rock for routing work is another interesting application, as is processing concrete rubble for recycling. In all these cases, the VC compactors streamline processes by reducing the number of machines and transports required. This improves the ecological balance – and cuts costs, too.

3625 HT VC: Ready to take on tough jobs

- › Excellent gradeability > 60%
- › Simple tool changes with VC quick-change toolholder system
- › Robust due to the use of heavy-duty components
- › Optimizes the crushing and compacting process
- › Can be used as a crushing or padfoot compactor



The EVOLution continues

KLEEMANN introduce the MS 953 EVO
mobile classifying screen.





KLEEMAN are presenting the MOBISCREEN MS 953 EVO, a mobile EVO classifying screening plant to complement the successful EVO crushing plants. The EVO series crushing and screening plants are optimally tuned to one another and work most efficiently in combination. They offer good transport properties, a great deal of flexibility and high performance.

Equipped for efficient results

An optimum material flow is critical to thorough screening. The feed hopper of the MS 953 EVO therefore has a very large capacity and opens in the direction of the material flow. For even levelling of the material, the feeding conveyor is generously dimensioned at 1,200mm and its incline can be adapted hydraulically to the material flow. The screen angle of the screen case can also be varied for different feed materials or applications. Thanks to the use of impact plates at the conveyor discharge and at the feed of the screen case, the material is evenly distributed and the plant protected against wear. With these features, the plant achieves a capacity of up to 500t/h.

Respond flexibly and wait comfortably

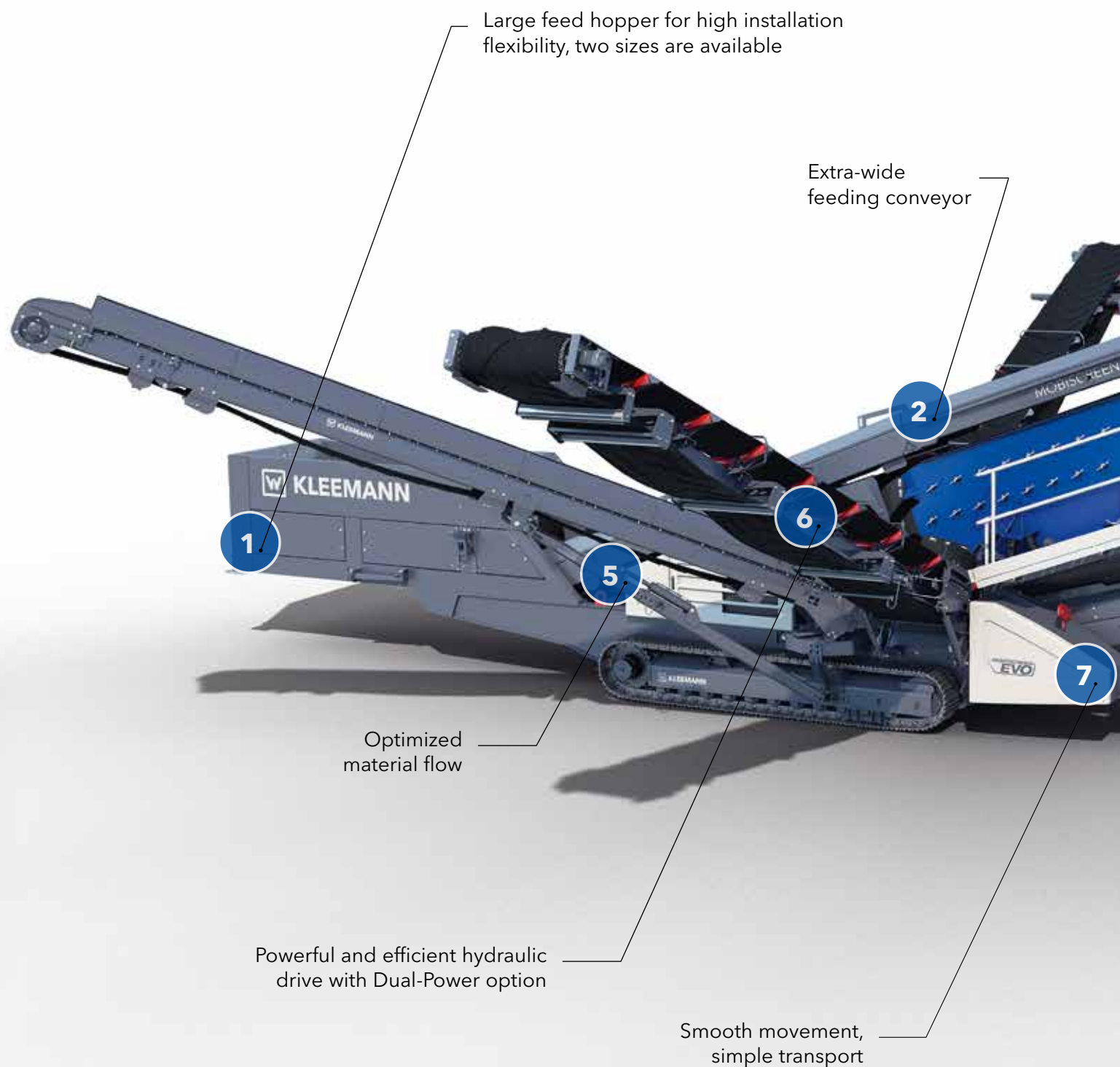
Like all EVO series plants, the MS 953 EVO is also easy to transport thanks to its space-saving transport position. For versatile use of the plant, it has to be possible to easily and quickly exchange the screen meshes. The screen meshes on the MS 953 EVO are therefore easily accessible from all sides. Thanks to the numerous KLEEMANN screen meshes, any application can be flexibly adapted to different materials. Another bonus for the operator is the good accessibility of the other service components. For instance, maintenance work is easy to carry out in the large engine compartment.

Simple and safe handling

The screening plant is controlled via a user-friendly, mobile control panel that can be connected at three different locations on the plant. This increases the safety of the plant operator by improving visibility of the folding and lowering functions. Operation is very easy because the control panel has an intuitive design with a clear, coloured display of all controllable machine functions. The emergency-off concept functions throughout all crushing and screening stages, meaning it also enhances the safety of the plant operator – a major advantage during operation of interlinked KLEEMANN EVO plants.

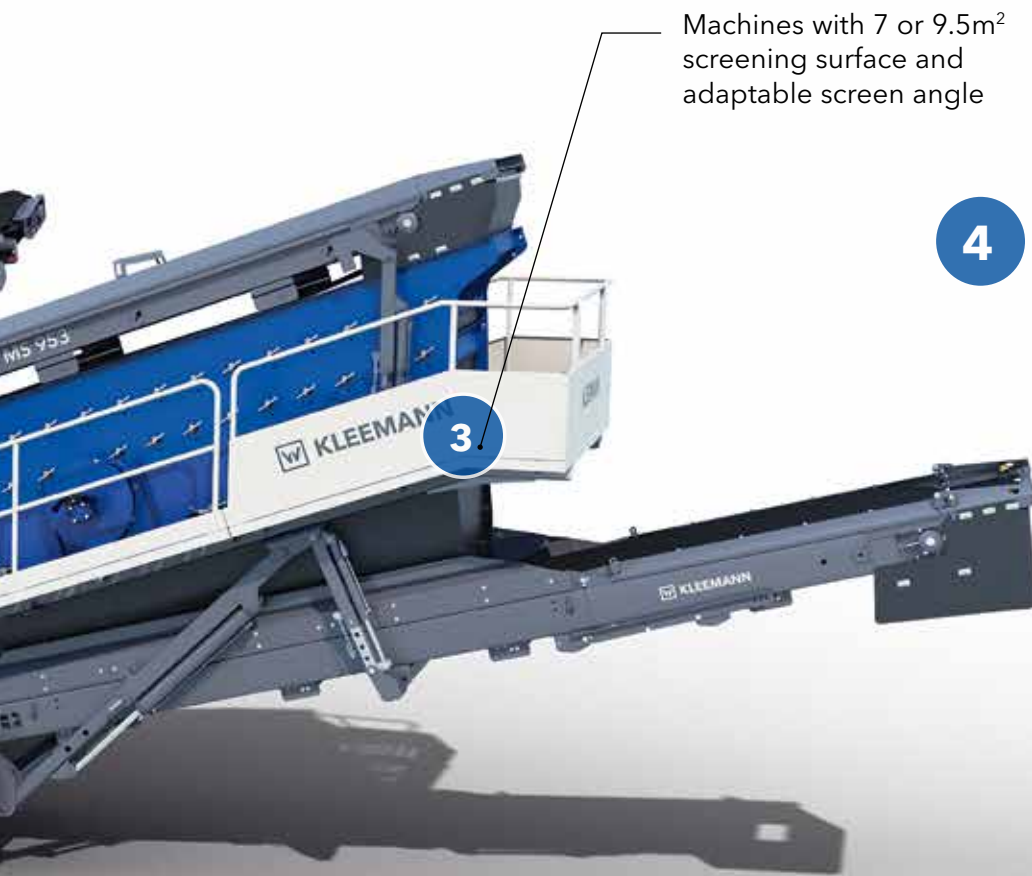


Highlights of the MOBISCREEN MS 953 EVO classifying screening plant



EVO screening plants

KLEEMANN are adding four innovative, track-mounted screening plants to their range of EVO systems. The double-deck MS 702 EVO and MS 952 EVO screening plants, and the triple-deck MS 703 EVO and MS 953 EVO have screening surfaces of 7m² and 9.5m² respectively on the upper deck. With their short setup times, good transport properties and high performance, they are the plants of choice for flexible use on alternating operation sites. They are suitable for use in both recycling and natural stone applications.



4

Easy-to-operate control system via mobile control panel

Technical data: KLEEMANN MOBISCREEN EVO

Machine overview:	MS 702 EVO	MS 703 EVO	MS 952 EVO	MS 953 EVO
Type:	Vibrating screen	Vibrating screen	Vibrating screen	Vibrating screen
Screen decks:	2	3	2	3
Screening surface (mm):	1,520 x 4,440	1,520 x 4,440	1,520 x 6,100	1,520 x 6,100
Transport weight (kg):	29,900	33,000	33,500	36,700

EVO JET -

The combustion technology from the market leader



BENNINGHOVEN burners pay for themselves thanks to state-of-the-art technology. Particularly as a retrofit upgrade solution in existing asphalt mixing plants of all manufacturers.

One of the most important components of any asphalt mixing plant is the burner. After all, it lays the foundation for the optimum drying result of the mineral and hence for the quality of the mix. When designing and constructing the famous EVO JET burner, BENNINGHOVEN - the newest member of the WIRTGEN GROUP - was able to call on expertise that is unparalleled anywhere in the world. And there is a reason for that: founded in 1909, the company initially manufactured burners for a variety of applications and is the inventor of the fully automatic ignition with photocell flame monitoring. This innovation played a crucial role in its decision to go into the manufacture of asphalt mixing plants in 1978. The company is still the only manufacturer of asphalt mixing plants to produce its own burners.

BENNINGHOVEN EVO JET burners have already proven their worth in China. They have been enjoying success on the market as a retrofit solution in existing plants for many years.

**Peter Koltes, Head of Combustion Technology
BENNINGHOVEN**



Unique: Four different energy sources in one burner

The EVO JET burner, which has earned itself legendary status, is still a key contributor to the success of BENNINGHOVEN today. "They are characterized by maximum reliability and can be run on up to four different fuels, such as fuel oils (extra light, medium and heavy), liquid gas, natural gas, solid fuels (coal dust, etc.) or combinations of several fuels - they're the only burners anywhere to do that," says Peter Koltes, Head of Combustion Technology at BENNINGHOVEN, explaining the benefits.

Highlights of the BENNINGHOVEN EVO JET burner:

- › High efficiency
- › Up to four different fuels possible without the need for mechanical conversion
- › Simple, modular and compact design with internal fan
- › Maintenance-friendly thanks to inspection flaps on both sides and the mobile burner for easier accessibility
- › More than 5,000 burners delivered to date with service lives of over 40 years in some cases
- › Long spare parts availability due to high proportion of in-house products
- › Rapid service response

The future of mastic asphalt paving

GKL SILENT is an innovative product from BENNINGHOVEN, a mixer so quiet that it can even be run at night.





“ The objectives were clear: we wanted to develop, design and manufacture a mastic asphalt mixer with horizontal agitator, direct electric drive, electric tilt function, electric cover for the filler port, electrically heated discharge chute and oil burner technology without any hydraulics.

**Heiko Steidl, Head of
Mastic Asphalt Technology
BENNINGHOVEN**

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Ever tighter requirements apply to mastic asphalt paving, particularly when it comes to occupational safety and noise levels. The GKL SILENT from BENNINGHOVEN is a genuine innovation and far ahead of its time. Equipped with a horizontal agitator and available in versions holding up to 10m³, the GKL (an abbreviation of "Gussasphaltkocher liegend", the German for "mastic asphalt mixer in horizontal design") can be installed on lorries, trailer beds or articulated trailers. The design is not its only winning feature: it also complies with all aspects of occupational safety, such as fall protection as well as ergonomic and ecological aspects.

No louder than a TV at moderate volume

Designed without hydraulic components and using an extremely quiet power generator as a direct, infinitely variable drive for the agitator shaft, the sound pressure level of the GKL SILENT does not exceed 60dB at a distance of 7m. That is no more than the noise from a TV at moderate volume. As a result, the mixer can even be operated at night and in sensitive areas, such as on inner-city job sites, near hospitals or in residential areas. The mixer consequently spells the end for the dreaded clattering diesel generator so frequently associated with mastic asphalt technology – a field which has so far remained largely untouched by innovation.



**It is controlled by
ultra-modern electronics.**



**The GKL SILENT is ideal for homogeneously
processing mastic asphalt and ensures optimum
mixing during transport.**

High efficiency through the use of electronic rather than hydraulic components

Yet the innovation from BENNINGHOVEN is much more than just quiet. With optional extras, such as electric cover for the filler port, central lubrication, electrically heated discharge chute and much more besides, the mastic asphalt mixer represents the height of excellence and is a real boon for its operator. Its highlights also include a specially developed control cabinet concept. A multifunctional display showing all parameters of relevance to the process has been integrated for the control of the system. Data can be called up at any time using a voucher printer.

Highlights of the mastic asphalt mixer GKL SILENT from BENNINGHOVEN

- › Hydraulics can be dispensed with completely
- › Efficient electric direct drive
- › Mains operation possible
- › Noise levels < 60dB at 7m distance (equivalent to a TV at moderate volume)



Turning RAP into black gold

Economical and environmentally friendly:
the BENNINGHOVEN granulator MBRG 2000
turns RAP into a resource for new mix.

Recycling technologies are on the advance around the world. This is mainly because the earth's resources are finite – but it is also due to the associated reduction in costs. In road construction especially, the advantages are obvious: when roads are being rehabilitated and resurfaced, cold milling machines remove asphalt layers. And this raw material can well be regarded as “black gold”. And recycling technologies from BENNINGHOVEN make this possible – particularly the granulator MBRG 2000. The mobile

plant breaks asphalt in blocks with an edge length of up to 1.8m down into its constituent parts without destroying the original grain structure. This careful crushing process ensures that almost 100% of the milled asphalt can be reused. Another great virtue of this crushing method is that it is associated with a much lower fines content. That means asphalt mixing plants from all manufacturers can process the granulated RAP without it sticking to the recycling drums and transport equipment.



Highlights of the BENNINGHOVEN granulator MBRG 2000:

- › Utilization of finite resources
- › Lower personnel costs
- › Minimal wear costs
- › Maximum cost-effectiveness
- › Minimal dust and noise emissions
- › Minimal fines content
- › Prevents blockage of the transport paths and the parallel drum to the greatest extent in the asphalt mixing plant
- › Can handle tramp iron

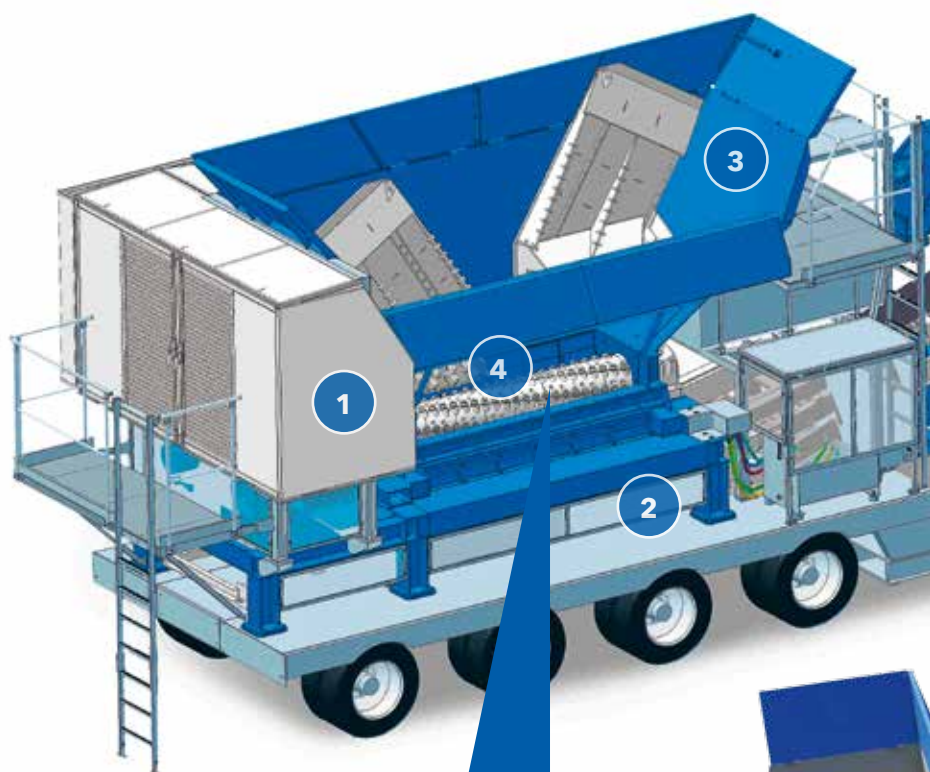


Saving money while protecting the environment

RAP that has been crushed with the BENNINGHOVEN granulator can be almost entirely processed to form new mix. That is because the gentle crushing technique produces no additional fines. And that in turn allows the MBRG 2000 to achieve high recycling rates, benefiting both operators and the environment – cutting white mineral, energy and emissions in one fell swoop. Recycling rates in Europe currently stand at around 30% – and this figure is rising around the world. Depending on the market and statutory requirements, granulated RAP is being reused in all layers of the road paving right up to the surface course. The requirements on quality, the grading curve and the asphalt formulas are met in full; only the formulas are adapted accordingly.

Incidentally, asphalt mixing plant specialist BENNINGHOVEN also offer a large number of systems for the cold and hot feeding of RAP into the mixing process, allowing RAP proportions of 25 – 90 + X% to be achieved. You can find out more in the next issues of RoadNews or beforehand at www.benninghoven.com ///

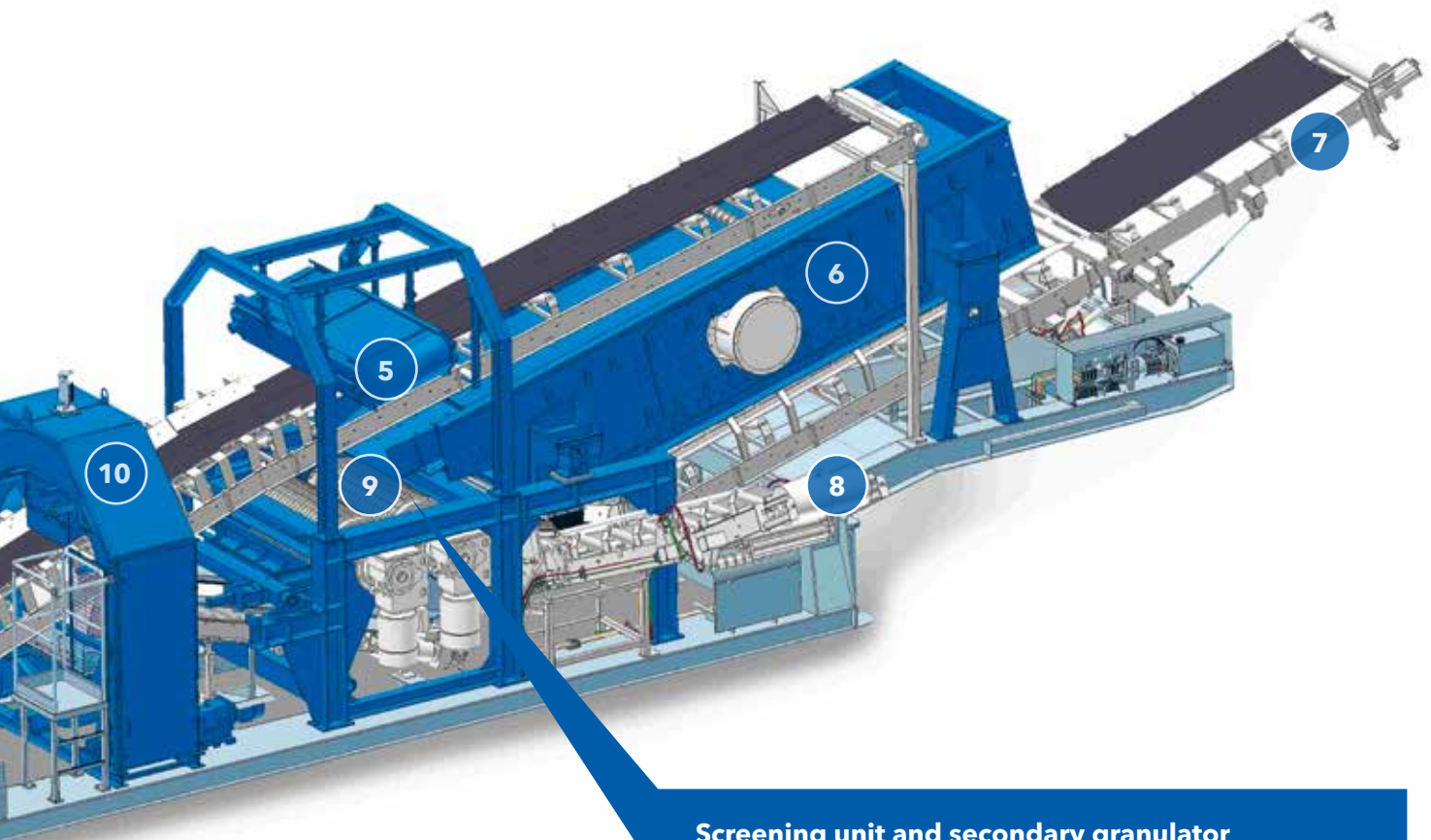
- 1 Power unit
- 2 Primary granulator
- 3 Pre-grinding of large slabs with reciprocating tampers
- 4 Primary granulator milling shaft
- 5 Magnetic separator
- 6 2-deck screen
- 7 Stockpile conveyor 1 (grain size 0 – 8mm)
- 8 Stockpile conveyor 2 (grain size: 8 – 22mm)
- 9 Secondary granulator milling shafts
- 10 Return of oversize aggregate



Primary granulator

A wheel loader loads the hopper of the granulator. Inside, tampers carefully push the RAP or asphalt blocks onto a milling shaft located underneath. This prevents bridges from forming and brings about speedy and reliable crushing in the range 0 – 70mm. The easily exchangeable milling shaft is absolutely reliable thanks to wear protection and special cutters.

The secret behind gentle crushing: Leading granulator technology



Screening unit and secondary granulator

The next stage of the journey through the granulator is the magnetic separator, where tramp iron is reliably separated. The pre-granulated material is then delivered onto an internal screening unit. Small grain sizes (0 - 8mm) are carried away directly by a stockpile conveyor. The fraction in the 8 - 22mm range, which already has the target size, is also transported away. The rest of the material goes into the variably adjustable secondary granulator, where it is crushed to grain sizes in a range $\leq 22\text{mm}$. The crushing process is carried out by the shafts of the secondary granulator with hard cast lug shells. The oversize grain still contained in the material is returned to the screening unit. This ensures that the output is free from oversize grain.



Tailor-made for China: New Universal Class pavers

The SUPER 1880-3 L and the SUPER 1880 L have gone into service.
Reports of the first three job sites.



Two new pavers of the 9.5m class arrive on the scene, ready to set new standards: launching their high-grade SUPER 1880-3 L paver and the multifunctional SUPER 1880 L paver, VÖGELE are introducing two machines that have been specially designed for the Chinese market – and produced by the WIRTGEN GROUP at their Langfang plant in China. Intensive collaboration between German and Chinese VÖGELE engineers ensures that the new Universal Class pavers combine the best of two worlds. The pavers of the Universal Class have now arrived on Chinese job sites. RoadNews reports on three different construction projects in the provinces of Shaanxi and Shandong.



SUPER 1880-3 L: The high-grade asphalt specialist

Highlights of the SUPER 1880-3 L:

- › Great power, high efficiency: Dongfeng Cummins engine rated at 158kW
- › ErgoPlus 3 operating concept: greater pavement quality, control and safety thanks to maximum operating comfort
- › VÖGELE EcoPlus low-emissions package: up to 24%* lower fuel consumption, emissions and noise levels
- › Hydraulic auger height adjustment: fast and precise adjustment of the auger system to varying layer thicknesses across the entire pave width
- › Advanced screed technology for pave widths up to 9.5m: electric screed heating prevents mix from sticking, and hydraulic Screed Lock function temporarily interrupts the float function to avoid irregularities in the pavement when resuming paving
- › 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

* Actual fuel consumption depends on multiple factors, e.g. machine configuration, type of job site and paving parameters.

Cutting-edge technology combined with the highest ergonomic and energy efficiency standards: the advanced pavers of the "Dash 3" generation meet the highest standards in terms of quality and productivity.



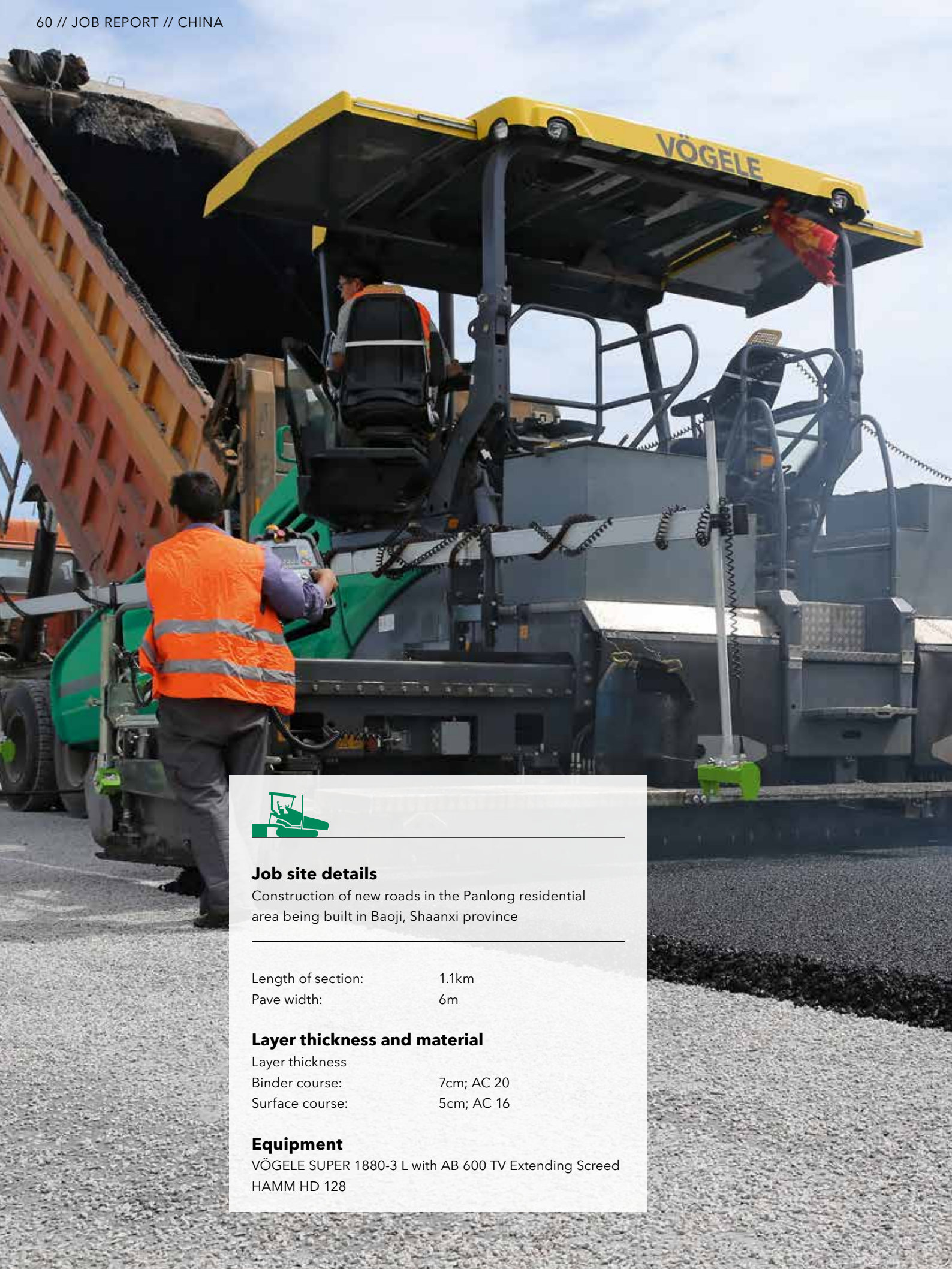
SUPER 1880 L: Multifunctional paver for CTB and asphalt

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, dual-circuit 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

Layers of cement treated base layer material up to 50cm thick and asphalt paving in good quality: the economical heavy-duty paver is as tough as they come.





Job site details

Construction of new roads in the Panlong residential area being built in Baoji, Shaanxi province

Length of section: 1.1km
Pave width: 6m

Layer thickness and material

Layer thickness
Binder course: 7cm; AC 20
Surface course: 5cm; AC 16

Equipment

VÖGELE SUPER 1880-3 L with AB 600 TV Extending Screed
HAMM HD 128



SUPER 1880-3 L: "Dash 3" generation for Baoji's new district

"Always have a keen eye for quality" – that is the motto of Mr Zhu, Vice General Manager of Shanxi Xinjiang Highway Road and Bridge Construction Project Co., Ltd. It is little wonder, then, that the building company relies on technology from the WIRTGEN GROUP and has invested in a new SUPER 1880-3 L. One of the first jobs took the innovative paver of the "Dash 3" generation to Baoji Panlong, where a new residential area for 300,000 people is being built. The new asphalt specialist demonstrated its phenomenal capabilities right from the start. One key factor here was ErgoPlus 3. The innovative operating concept from VÖGELE offers outstanding ergonomics and occupational safety. "The ErgoPlus 3 operating concept is logically structured, making operation very simple. That gives us confidence in hectic job-site situations, because every press of a button is perfectly executed," said Equipment Manager Li Shunli contentedly. >>>

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The reason we invested in a SUPER 1880-3 L was that we were very satisfied with the predecessor model, the excellent product quality and the strong product support. We have full confidence in the WIRTGEN GROUP and the VÖGELE brand.

**Mr. Zhu, Vice General Manager
Shanxi Xinjiang Highway Road and Bridge Construction
Project Co., Ltd.**

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“The SUPER 1880-3 L is tailor-made for China. That’s evident from details such as the extra large material hopper, which fits all standard lorries perfectly.

Li Shunli, Equipment Manager
Shanxi Xinjiang Highway Road and Bridge Construction Project Co., Ltd.

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SUPER 1880-3 L: VÖGELE power for the city motorway

When the heavily used Jintai Avenue in the centre of Baoji was removed and rehabilitated, the new SUPER 1880-3 L of Shanxi Xinjiang Highway Road and Bridge Construction Project Co., Ltd. operated at almost its maximum pave width of 9.5m – and still had plenty of power to spare. “The performance of the SUPER 1880-3 L is perfect for paving steep roads, too,” said a delighted Mr Zhu, Vice General Manager of Shanxi Xinjiang Highway Road and Bridge Construction Project Co., Ltd. It owes these capabilities to its 158kW Dongfeng Cummins 6-cylinder diesel engine, the power of which is every bit as impressive as its efficiency: along with exhaust emissions and noise levels, the VÖGELE EcoPlus low-emissions package also cuts fuel consumption significantly. These reductions are achieved through a number of individual measures, such as a splitter gearbox with the ability to disengage hydraulic pumps, the energy-optimized tamper drive, a variable-speed fan and a controlled hydraulic oil temperature circuit. >>>



Job site details

Roadway removal and rehabilitation of Jintai Avenue in Baoji, Shaanxi province

Length of section:	3.5km
Pave width:	9m

Layer thickness and material

Layer thickness	
Binder course:	8 - 10cm; AC 20
Surface course:	6cm; AC 16

Equipment

VÖGELE SUPER 1880-3 L with AB 600 TV Extending Screed
VÖGELE SUPER 1800-2 L with AB 600 TV Extending Screed
HAMM HD O128V
WIRTGEN W 2000



“ The SUPER 1880 L has surpassed our expectations. The paver delivers outstanding paving results, while the ErgoBasic operating concept also makes it easy to operate.

**Qiu Ruosen, Equipment Supervisor
Qingdao Fang Yuan Sheng**

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SUPER 1880 L:

Multifunctional paver meets high quality requirements

From CTB paving to processing asphalt – the SUPER 1880 L is the paver that can do it all. Produced at the WIRTGEN GROUP's plant in Langfang, the new VÖGELE paver is capable of top performances in terms of quality, too – as the paving team at Qingdao Fang Yuan Sheng impressively demonstrated on a new construction project in Jimo in the Qingdao administrative district. The multifunctional paver laid stone mastic asphalt on the new main traffic artery alongside an administrative building that is also being built in the city of 1.2 million people. The SB 300 HDT Fixed-Width Screed with the tamper compacting system delivered first-class quality over a pave width of 6.5m. "We are overjoyed with the new VÖGELE machine technology. The road surface of stone mastic asphalt – a very difficult material to process – speaks for itself. At the same time, the Heavy-Duty kit gave us the flexibility to process even abrasive materials such as CTB," said Yu Shuiyong, proprietor of Qingdao Fang Yuan Sheng. ///



Job site details

Construction of the new Chang Guang Road in Jimo,
Qingdao administrative district, Shandong province

Length of section:	1.1km (of a total of 5km)
Pave width:	6.5m

Layer thickness and material

Layer thickness

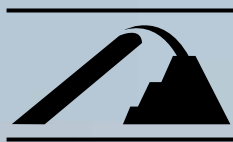
Base course:	7cm; AC 25
Binder course:	5cm; AC 20
Surface course:	4cm; SMA 13

Equipment

VÖGELE SUPER 1880 L with SB 300 HDT Fixed-Width Screed
VÖGELE SUPER 1800-2 L with AB 600 TV Extending Screed
HAMM HD 14 VV



New solutions in Zibo



Shandong Yichang Logistics Corporation invest in mobile equipment from KLEEMANN for their quarry.





A total of 10 machine sets, comprising MOBIREX impact crushers and MOBISCREEN screening plants, are doing an outstanding job in Zibo.





China // Zibo

On account of the extreme dust generation, stationary plants are increasingly being shut down at quarries in eastern China. To minimize dust emissions in the Zibo region and meet government requirements, Shandong Yichang Logistics Corporation faced a variety of challenges when it came to operating its quarry. After considering the possible alternatives, a decision was made to acquire mobile KLEEMANN crushers and screens.

Mandatory reduction in dust emissions

In 2008, Shandong Yichang Logistics Corporation began mining up to 100,000t of limestone a day over an area of 230ha using stationary plants. Five years later, the local government ordered the quarry to either halt operations or take measures to reduce dust emissions. The company went in search of alternatives, ultimately deciding to acquire mobile crushers and screens. Xu Yichang, President of Shandong Yichang Logistics Corporation, ordered mobile equipment from one of his long-time suppliers. But these crushers and screens did not achieve the targeted output. He soon became dissatisfied and contacted several other manufacturers of mobile processing plants. To make a sound decision, Yichang had them run their systems for a month at his quarry. »»



Job site details

Processing of rock and stone at a quarry in China's Zibo region

Material

Type of stone:	Limestone
Feed size:	0 - 450mm
Final products:	0 - 10, 10 - 25, 25 - 35 and 35 - 65mm

Equipment

8 machine sets comprising an MR 130 Z EVO2 and an MS 19 D
2 machine sets comprising an MR 110 Z EVO2 and an MS 19 D





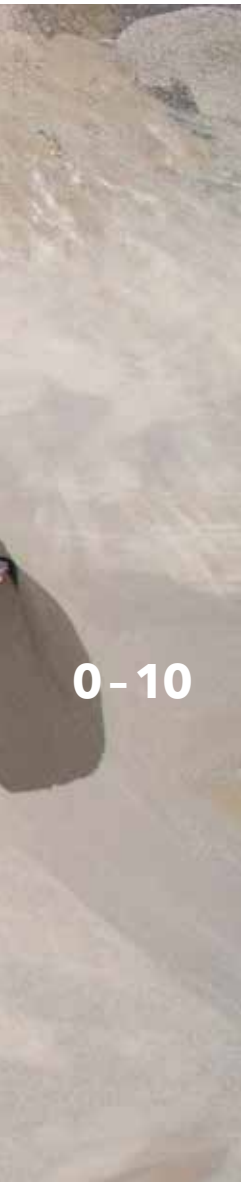
The MS 19 D triple-deck classifying screen separates four classified fractions. The figures in the diagram represent the grain size in millimetres.

KLEEMANN plants win the day in a direct comparison

The WIRTGEN GROUP in China provided him with a MOBIREX MR 130 Z EVO impact crusher and the mobile MOBISCREEN MS 19 D screening plant. "The MR 130 Z EVO and MS 19 D won me over with their reliable output of 300t/h. KLEEMANN's price and quality are just right on target compared to the competitors," said Xu Yichang. "What's more, it's very important to me to be able to rely on a company's service. I felt well-supported by the team at WIRTGEN GROUP China right from the outset." The diesel consumption was also significantly lower compared with competitor products. Yichang finally ordered five machine sets in 2015, comprising the MR 130 Z EVO2 and the MS 19 D. The MR 130 Z EVO2 is equipped with a spray system to reduce dust generation.

Mobile plants shorten transport distances

The plants can be used flexibly over the entire quarry grounds. "The mobile plants have the big advantage of enabling us to shorten transport distances at our quarry. Depending on mining progress, we can move the plants swiftly and save on time-consuming material transport," explains Xu Yichang. In addition, the plant operators have radios and can communicate with one another if material runs short or they encounter any other difficulties. The MR 130 Z EVO2 is equipped with an integrated secondary screening unit and produces in a closed circuit. The MS 19 D triple-deck classifying screen separates four classified fractions of limestone. The end products are sold to asphalt and concrete mixing plant operators. >>>

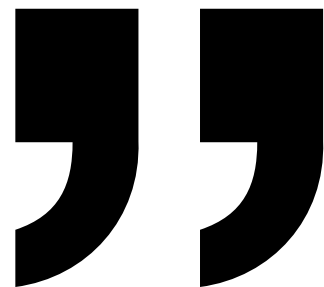


Benefits and opportunities of mobile crushing and screening equipment

- › Transport capability: mobile plants can be transported to different job sites
- › Flexibility in use: mobile plants can be used in quarries as well as recycling applications
- › Improved material handling: can be moved within the job site for optimal feeding process
- › Time savings: short setup times
- › Quality: new plant technology for best product quality
- › High performance: processing of up to 1000t/h possible
- › Costs: less investment risk for short term projects; projectable resale value
- › Permission: usually easier permission process
- › Possibilities: extensive product portfolio for a wide range of applications

” KLEEMANN’s price and quality are just right on target compared to the competitors.

**Xu Yichang, President
Shandong Yichang Logistics Corporation**



Additional challenges and investments in the future

The government approached Shandong Yichang Logistics Corporation again this year, demanding a total shutdown of the quarry. Yichang in turn requested subsidies, since securing and rehabilitating the quarry would be very cost-intensive and time-consuming. This request was rejected, and so he once again tried a new tack: he proposed financing the work himself and converting the grounds in such a way that a logistics centre could be built there several years on. Yichang Logistics Corporation's main line of business is logistics and transport, meaning that the investment would pay off in the long term. This idea was given the green light.

Expanding the fleet to 50 machine sets

Today, the work to create a new site is considered to be a pilot project illustrating how quarries in the vicinity of major Chinese cities can be dealt with. Turbine spray systems are to be used in the future to further reduce dust emissions. Yichang has also found it necessary to invest in additional screens and crushers, because he still has five years to prepare the grounds for their new purpose. This year, he purchased 2 MR 110 Z EVO2 and MS 19 D machine sets, and 3 MR 130 Z EVO2 and MS 19 D sets. In total, Shandong Yichang Logistics Corporation will be expanding its machine fleet to 50 crushers and 50 screens. ///

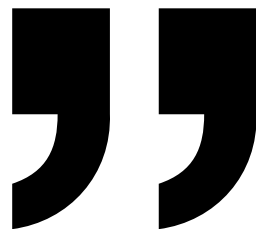
The track-mounted plants can be conveniently operated and positioned using a remote control unit.





It's very important for our customers to be able to rely on service. We at the WIRTGEN GROUP do everything we can to make this possible!"

**Liu Kaishan, KLEEMANN Service Engineer
WIRTGEN GROUP in China**







State-of-the-art technology for the Baku city circuit

HAMM rollers and VÖGELE pavers deliver excellence
for the first Formula 1 track in the Caucasus.





Job site details

Conversion of the city roads to a
Formula 1 circuit in Baku, Azerbaijan

Length of the circuit: 6,003m
Width of the circuit: 7.5 – 19m
Asphalt-paved area: 113,400m²
Slope + 12% to - 9%

Working parameters

Paved material quantity
Binder course: 10,400t
Surface course: 11,600t

Layer thickness
Binder course: 5cm
Surface course: 4cm

Material

Binder course: AC 16 BS SG
Surface course: AC 11 RT

Equipment

1 WIRTGEN milling machine W 2100
8 VÖGELE SUPER 1900-2 pavers with AB 600 TV
Extending Screed
4 HAMM HD+ 110 VO tandem rollers
4 HAMM HD+ 90 VO tandem rollers
2 HAMM HD 110 tandem rollers
2 HAMM HD 90 tandem rollers
2 HAMM HD 10 tandem rollers
1 HAMM HD 14 tandem roller



The race circuit in Baku features 8 righthanders and 12 lefthanders – including a lap around the historic city centre with a double chicane and an uphill section. At the end of the circuit, the Formula 1 racers reach top speeds of more than 340km/h on the approximately 2km straight.



Azerbaijan // Baku

Whenever the 22 Formula 1 pilots race around the track, vying for pole position, the air in one of the many metropolises around the world is charged with excitement. In June 2016, Baku, the capital city of Azerbaijan, got its first taste of this heady cocktail of top speeds, precision and thrills, glamour and celebrations. This spring, a city circuit was created at the centre of the Near Eastern capital, amid the centuries-old buildings, contemporary high-rise towers and the port on the Caspian Sea. To make sure that the pilots can safely keep their powerful 815hp (600kW) racing cars on the track, WIRTGEN, VÖGELE and HAMM machines built a high-quality asphalt pavement on the narrow streets and the wide boulevards of the city. >>>



First choice for the top league

Formula 1 races make the highest demands on the pavement. The asphalt must be particularly homogeneous and even – and naturally have an outstanding grip. Ideally, such circuits are paved on a defined sub-base. This was not possible in Baku, however, as the circuit passes straight through the city. At the beginning of the year, the streets were a mixture of normal asphalt roads and historic cobblestones.

Special formula for the ancient cobblestones

As a feature of a UNESCO World Heritage site, the historic cobblestones had to remain intact and be restored to their original glory after the race. “We solved this unusual challenge by separating the cobblestones from the asphalt with a layer of chippings. A pavement of base course, binder course and surface course was then paved. In the cobbled areas, a carbon-reinforced asphalt layer was integrated into the surfacing. It was designed to prevent the new asphalt pavement shifting over the cobblestone,” explains Dr Rainer Hart, an asphalt consultant.

On the other circuit sections, the contractor, AzVirt LLC from Baku, employed 3D-precision milling to create an exact, precisely pre-defined profile that met Formula 1 standards on the existing city roads. »»



AzVirt used several rollers following closely behind the pavers to compact the asphalt in the optimum time frame – an important aspect for meeting the highest quality demands.

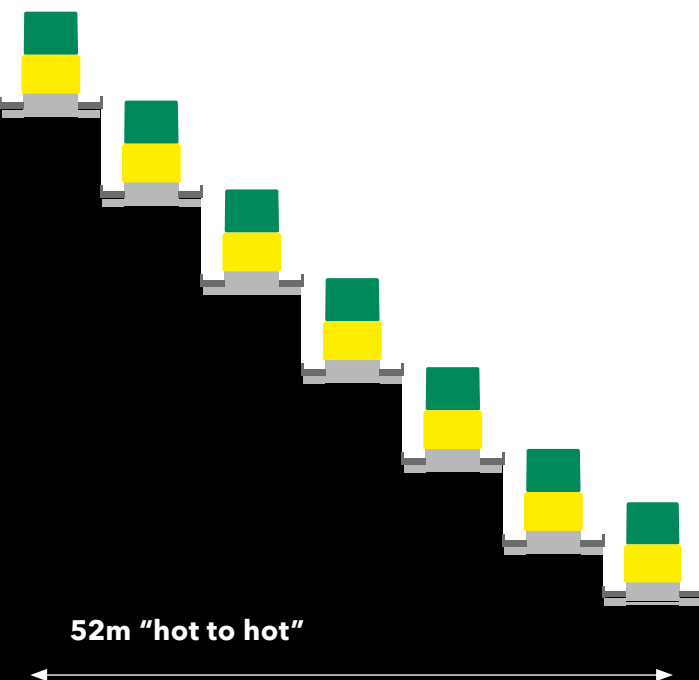


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At the moment, Baku can justifiably claim to have the best city roads in the world.

**Dr Rainer Hart, Managing Director
Hart Consult International GmbH**

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52m "hot to hot"

The perfectly interlocked asphalt pavement

The formation of the joints has a crucial impact on the service life of asphalt surfaces. This is because cracks at the joints or those resulting from heavy loads are the first places to be attacked by water. "Hot to hot" paving is therefore recommended to permanently prevent moisture from penetrating the asphalt pavement. At least two pavers simultaneously place the asphalt strips "hot to hot" in a slightly staggered formation. Two or more pavers working in echelon is the best way to ensure perfectly bonded longitudinal joints.

EXPERT TIPS

- › The distance between the individual pavers should be kept as short as possible so that the joint face of the first strip is still sufficiently hot.
- › Rollers with a light operating weight should follow directly behind the pavers. They should compact the surface from the outside inwards in the direction of the joint. It is recommended that the rollers work with an overlap of at least 15cm parallel to the longitudinal joint.
- › Joints should be offset in the individual pavement layers and produced with oblique faces.

Eight SUPER 1900-2 pavers with AB 600 TV Extending Screed

The binder and surface courses were then paved onto the previously prepared roadways. This was accomplished by an impressive armada of VÖGELE pavers and 15 HAMM rollers, with the machines sometimes working simultaneously on different sections; all in all, 8 SUPER 1900-2 pavers were used, each equipped with an AB 600 TV Extending Screed. The use of identical screed types was stipulated in the contract.



"Hot to hot" through Baku:
the VÖGELE pavers produced a perfectly
interlocked asphalt surface.

Perfect logistics

During paving, the asphalt production, transport and feeding were controlled so as to ensure that the pavers were able to work at an almost constant pave speed. More than 40 lorries transported the asphalt from three mixing plants to the pavers. Due to their careful preparation and planning, AzVirt were able to supply asphalt to the pavers just in time without stoppages, despite the difficult traffic situation in the city centre – an impressive feat of logistics and civil engineering.

Seven at one blow

The absolute highlight was the “hot to hot” paving in the area of the seafront, where 7 pavers plus 15 rollers featuring operating weights of between 2 and 14t built the asphalt pavement for the track and the spectator area in a single step. Their combined width spanned 52m – a true highlight for all involved! »»



HD, HD+ and HD CompactLine for high-quality compaction

The AzVirt experts know that final compaction has a decisive influence on the surface quality of the asphalt pavement. With this in mind, they exclusively used HAMM tandem rollers of the HD, HD+ and HD CompactLine series. The design of the articulated rollers already ensures a regular weight distribution – a key factor for outstanding pavement evenness without bumps and cracks. An added advantage is the excellent side clearance combined with the large track offset. Ideal for ensuring consistently precise and full compaction along curbs, road fittings and walls.

Safe and effective with unique visibility

All HAMM rollers feature outstanding visibility. On the HD+, this is guaranteed by the clever frame construction combined with the panoramic cabin. The compact machines of the HD CompactLine range provide drivers with a full view of the working area at all times due to the slim-line front end. This not only influences quality, but is also a safety aspect, particularly when a large number of rollers closely follow the pavers as in Baku.

Protecting historic buildings

Another decisive factor for the quality of the compacting work in Baku was the use of oscillation rollers. They cause significantly lower levels of vibration to the surrounding area than vibratory rollers.



The invitation to tender specified oscillation compaction, as the entire circuit is flanked by century-old buildings. In addition, there are gas pipes as well as underground car parks and tunnels under many of the roads. Vibration compaction was therefore an absolute no-go in most areas. For Manfred Martin, Head of the AzVirt Technical Division, there was no alternative to the HAMM rollers: "As a pioneer in this field of technology, HAMM have more than 30 years of experience with oscillation – much more than any other manufacturer."

Final finish with oscillation compaction

However, oscillation has a great deal more to offer than "just" low-vibration compaction. The special drum movement also creates even surfaces with a good initial grip – the second key point in favour of using oscillation in Baku.

The best city roads in the world

Oscillation compaction was also the first choice for the surface course of the F1 circuit, as areas compacted with oscillation have an excellent longitudinal evenness. The final quality control to check the position and evenness of the track showed that AzVirt had built a superb pavement on the originally inhomogeneous city roads and easily met the stringent surface accuracy requirements of 3mm over a distance of 4m. ///



Oscillation technology from HAMM was used for dynamic compaction of the circuit around the historic city centre, the modern government district and the stylish seafront, without impacting above-ground and underground structures. The compaction results achieved in the process were excellent.

Oscillation

Low-impact methods for the city

On city-centre job sites with confined conditions, dynamic compaction with oscillation is recommended, as it only introduces around 15% of the vibrating force into the surrounding area in comparison to vibration. This protects the surrounding buildings as well as the pipes and installations below the pavement.

ADVANTAGES

- Low vibrating forces in the area around the machine
- Dynamic compaction, also for vibration-sensitive areas

Perfect surfaces for Formula 1 races

Surfaces that are compacted with oscillation feature a very high degree of longitudinal evenness. This is because the drum is in constant contact with the ground. This type of asphalt compaction also produces an excellent initial grip, as the drum rubs the bitumen on the upper surface of the pavement with its oscillating movement. A clear bonus when it comes to safety.

ADVANTAGES

- Excellent longitudinal evenness, no irregularities in the surface
- High level of initial grip



The thronging streets around the Shanghai Tower, at 632m the highest building in China and the city's landmark.