CLOSE TO OUR CUSTOMERS



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PAVING THE WAY TO GREATER MOBILITY

WE LEAVE NO WISH UNFULFILLED. AS A STRONG PART OF JOHN DEERE AND WITH FIVE POWERFUL BRANDS, WE - THE WIRTGEN GROUP - COVER THE ENTIRE ROAD CONSTRUCTION PROCESS CHAIN, FROM PROCESSING, MIXING, PAVING, AND COMPACTING TO REHABILITATING. WE ACHIEVE THIS WITH ONE STRONG TEAM, OUR LEADING AND HIGHLY SPECIALIZED PRODUCT BRANDS, AND WITH INDIVIDUAL OPTIONS FOR EACH CUSTOMER - FROM A SINGLE MACHINE TO A COMPLETE PACKAGE FOR THE ENTIRE CYCLE.





5 product brands Corporate group



A PERFECT COMBINATION.

THE WIRTGEN GROUP IS A GROUP OF COMPANIES ACTIVE IN THE GLOBAL CONSTRUCTION MACHINERY INDUSTRY. OUR STRENGTH RESULTS FROM THE STRENGTH OF OUR FIVE SPECIALIZED PRODUCT BRANDS WIRTGEN, VÖGELE, HAMM, KLEEMANN, AND BENNINGHOVEN. WE OFFER INNOVATIVE AND RELIABLE SOLUTIONS IN OUR ROAD AND MINERAL TECHNOLOGIES BUSINESS SEGMENTS.

Our corporate group is at home all over the world. Five specialized production facilities in Germany; three local production facilities in Brazil, China, and India; a large number of our own sales and service companies; and a global dealer network make us successful around the globe. Despite our international alignment, we never lose sight of our roots. Our corporate culture is based on our history of delivering value - for the success of our customers on construction sites around the world. This is what motivates our employees to work together to develop innovative processes and manufacture high-quality products.

ROAD AND MINERAL TECHNOLOGIES

We have established a successful position in our two business segments: with our innovative solutions for the construction of new roads and road rehabilitation, we have become the market leader in the Road Technologies business segment. Our cost-effective and reliable products for the Mineral Technologies business segment offer cutting-edge technology for extracting and processing minerals, recycling building materials, and producing asphalt.

Our premium product brands focus entirely on their respective areas of expertise, united in a common focus on the needs of our customers.

WIRTGEN is the market leader for milling machines and recyclers in road construction and offers slipform pavers and surface miners with bestin-class quality and technology.

VÖGELE is the global market leader and sets the trends in the industry with a complete range of road pavers, screeds, and feeders.

HAMM is the specialist for rollers and unrivaled in asphalt compaction.

KLEEMANN is a global technology leader in the market for mobile crushing and screening plants.

BENNINGHOVEN builds the world's leading asphalt mixing plants.

The WIRTGEN GROUP is proud to be a strong part of John Deere's Construction & Forestry Division.





WHAT WE STAND FOR

PARTNERSHIP



WE STRIVE FOR NOTHING LESS
THAN THE LASTING SUCCESS OF OUR
CUSTOMERS ON CONSTRUCTION
SITES AROUND THE WORLD.



INNOVATION

WE SET TECHNOLOGICAL STANDARDS IN THE INDUSTRY AND SHAPE THE FUTURE OF ROAD CONSTRUCTION.



RELIABILITY

WE STAND FOR THE HIGHEST QUALITY AND LONG-LASTING VALUE OF OUR PRODUCTS AND SERVICES.



SPECIALIZATION

OUR FOCUS ON THE ROAD
CONSTRUCTION VALUE CHAIN MAKES
US RECOGNIZED EXPERTS.

A LONG TRADITION OF SUCCESS.

EACH OF OUR FIVE PRODUCT BRANDS BRINGS DECADES
OF EXPERIENCE IN THE CONSTRUCTION OF MACHINES
AND EQUIPMENT TO THE WIRTGEN GROUP - MORE THAN
500 YEARS IN TOTAL. OUR EMPLOYEES HAVE CONTINUOUSLY
IMPROVED THE PROCESSES IN THEIR CORE BUSINESS,
DECISIVELY SHAPING OUR PROGRESS.



Developed and operated inhouse - WIRTGEN invents and establishes milling as the standard process in road rehabilitation.



The towed spreader is the first paver manufactured by VÖGELE.

WIRTGEN GMBH

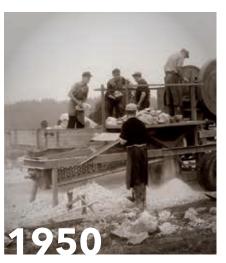
WIRTGEN's history began in 1961 and is marked by numerous innovations in road construction: imbued with a pioneering spirit, the company evolved to become the global market leader in road milling machines, setting milestones in cold recycling and perfecting the automatic paving of concrete surfaces.

JOSEPH VÖGELE AG

Many of the revolutionary inventions in asphalt paving come from VÖGELE, a company with a long tradition dating back to 1836. Whether automatic grade and slope control, electric screed heating, high-compaction technology, or a unique control concept - VÖGELE technologies have repeatedly set new standards and propelled quality in road construction to new heights.



HAMM builds the world's first road roller powered by a diesel engine.



Hand-fed wheeled mobile jaw crusher with drum screen from KLEEMAN.



BENNINGHOVEN entered the field of industrial combustion technology in the early 1950s.

HAMM AG

Since its founding in 1878, HAMM has been a trendsetter in the compaction technology market, repeatedly setting new standards. The first road roller powered by a diesel engine set a milestone in 1911, and was followed by further innovations, such as the first tandem roller with all-wheel drive or dynamic compaction with oscillation – HAMM's success story is studded with groundbreaking technologies.

KLEEMANN GMBH

Building on its experience since 1857, KLEEMANN first began manufacturing mobile machines for aggregate processing back in the 1920s. Its breakthrough came in 1976 when the company built the first wheeled mobile crusher for a customer in the Arab Emirates. A decade later, KLEEMANN ushered in a new era with its first tracked mobile crushing and screening plant.

BENNINGHOVEN GMBH & CO. KG

The specialist for asphalt mixing plants has been active in this field since the 1960s. What began in 1909 with the manufacture of gear wheels has now culminated in technological leadership as a manufacturer of asphalt mixing plants. A pioneering spirit and a long tradition combined with cutting-edge technology guarantee a steady stream of innovations from BENNINGHOVEN.





FOR A BRIGHTER FUTURE











ECO-FRIENDLY TECHNOLOGIES

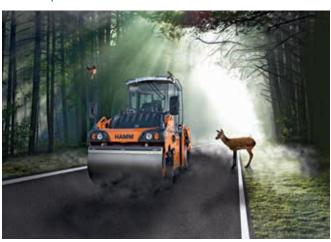
The future belongs to eco-friendly technologies and processes. WIRTGEN GROUP machines for road construction, extracting and processing minerals, and recycling construction materials already represent both environmentally friendly and, at the same time, cost-effective solutions today. Recycling is our primary focus when it comes to our road rehabilitation technologies, yet we never compromise on quality and costeffectiveness. In the extraction of high-quality minerals, our processes offer cost-effective and environmentally friendly solutions for the selective mining of all types of rock. And with our mobile plants, we also offer resource-friendly solutions for natural stone processing and recycling.

SUSTAINABLE PRODUCTION

The WIRTGEN GROUP's brand headquarters in Germany are among the most state-of-the-art manufacturing facilities in the world. Environmentally friendly production processes ensure that operations are efficient and conserve resources. By using waste heat to heat the workshops and offices, we have been able to significantly cut our use of external energy sources. In addition, thanks to geothermal probes under the employee parking lots, we can extract geothermal energy to help us heat and cool the administrative buildings. For example, at HAMM in Tirschenreuth, the company is able to generate 600,000 kWh of heating energy and 200,000 kWh of cooling energy annually from renewable sources. In the production halls, highspeed doors that only stay open for a short period of time also conserve heating energy. Closed-loop water systems reduce fresh water requirements, and low-emission wastewater treatment plants remove foreign matter from the wastewater and return it to

the halls in a purified state. Wastewater that cannot be treated is disposed of in an environmentally friendly manner. Retention basins prevent risks to adjacent bodies of water. By switching from wet painting to solvent-free powder coating, we have been able to reduce our emissions by about 90 percent. In addition, wet-chemical pretreatment isn't necessary, as components are cleaned with powerful blasting machines before coating. Together with a manufacturer of paints and coatings, for example, the team in Windhagen developed a powderin-powder process that requires only one curing pass without intermediate coating. This means the component spends less time in the kiln, which leads to energy savings due to lower oil and gas consumption and therefore also has a positive impact on the environment. We focus on keeping distances short - our suppliers are located in the immediate vicinity of our facilities wherever possible. We prefer to send machines and spare parts by rail, inland vessels, or sea freight. This is how we reduce CO₂ emissions.

> When it comes to our technologies for new road construction and road rehabilitation, we focus on recycling the reclaimed material in order to protect our environment.



> Intelligent logistics concepts at our state-of-the-art production facilities minimize transport routes and CO₂ emissions.





THE POWER OF INNOVATION.

OUR GOAL IS CLEARLY DEFINED, OUR STANDARDS EXTREMELY HIGH:
WE WANT TO MOVE THE WORLD BY CONTINUING TO DEVELOP
LEADING TECHNOLOGIES AND PROVIDING UNPARALLELED SERVICE
IN THE FUTURE. THIS IS HOW WE ARE CONTRIBUTING TO THE
ONGOING IMPROVEMENT OF THE WORLD'S INFRASTRUCTURE.

PAVING THE ROAD TO THE FUTURE

Being number 1 is an obligation - we take our market leadership in our Road Technologies business segment very seriously. We are also well aware of the fact that we have to work hard to maintain this lead every day. Our aspiration is to be a pioneer in the industry, and to reach this goal, we constantly work towards shaping the future of both road and mineral technologies as a leader. This is our mission and our motivation.

At our production facilities, we work with passion on developing the technologies of tomorrow and manufacturing the technologies of today to the highest standards of quality. At each of our brand headquarters in Germany, the focus is fully on brand's respective area of expertise. As a result of this specialization, we have achieved technological and market leadership and are passionately driving innovation in the industry. Our mission is to thoroughly meet the needs of our customers with our reliable products, technology, and services – worldwide.

By developing new technologies and entering new markets, we are securing the long-term viability of our company. In the process, we systematically use the positive experiences and knowledge from our Road Technologies business segment to continuously develop our second line of business, Mineral Technologies, into a leading position.

WE GO THE EXTRA MILE

We are growing our business with moderation and a long-term perspective. As a reliable partner, we are completely dedicated to our customers' lasting success. And we gladly go the extra mile for them.

A STRONG GLOBAL TEAM.

BEHIND EVERY MACHINE, BEHIND EVERY INVENTION, AND BEHIND EVERY GROUNDBREAKING TECHNOLOGY, YOU'LL ALWAYS FIND INDIVIDUAL PEOPLE: VISIONARIES, ENGINEERS, TECHNICIANS, AND USERS ALL WORKING TOGETHER TOWARD A COMMON GOAL. THEIR IDEAS AND THEIR DEDICATION HAVE MADE US WHAT WE ARE TODAY.

Our success story began in November 1961, when 20-year-old Reinhard Wirtgen took his first steps into the world of road construction with a concrete breaking machine. Now, more than 50 years later, his small one-man firm has grown into one of the world's leading construction machinery groups with more than 8,700 employees worldwide.

Then, as now, it was our employees who made us strong, stable, and successful as a company. In all four corners of the globe, they strive to achieve our common goal - to develop the very best machines for road and mineral technologies - and in doing so, guarantee our customers' success on job sites around the world.

CLOSE TO OUR CUSTOMERS

Besides innovative machines, the WIRTGEN GROUP has something else in abundance - passion - and it comes standard. And we share in our customers' passion for their business, because we know that it is impossible to achieve excellence without shared values such as unwavering dedication, a service- and solution-driven approach, or identifying with a project.

This is expressed in our value proposition CLOSE TO OUR CUSTOMERS, which all of our employees live and breathe on a daily basis. Their enthusiasm and individual responsibility for

our products and our service-minded approach combine to create genuine progress - for you.

We uphold our promise of delivering value by providing each customer with a personal point of contact at our company - no matter where in the world that customer may be located. Our dedication to our customers is reflected in our professional applications consulting and targeted training programs, we provide exemplary spare parts service, guarantee rapid repairs at our workshops, as well as reliable service at their job sites - wherever and whenever our customers need us. If required, we also offer sound financial assistance and project planning.

DRIVEN BY PASSION

Staying close to our customers is our top priority - in every respect. Our local specialists can always draw on additional assistance from our brand headquarters in order to provide our customers with the highest degree of machine expertise at all times.

This enthusiasm will continue to drive us in the future - because our passion is the best engine powering us along the road to success. Why not come along for the ride?



100

ч



FIVE SPECIALIZED

BRAND HEADQUARTERS











WIRTGEN - WHERE INNOVATION BEGINS.

What started out as a trucking company for construction materials in 1961 has grown over the years to become the largest of the WIRTGEN GROUP brand headquarters. Today, the WIRTGEN facility in Windhagen, located in the German state of Rhineland-Palatinate, manufactures cutting-edge road and mineral technologies. The production of road milling machines, cold recyclers, soil stabilizers, slipform pavers, and surface miners requires a versatile production system and the highest possible degree of vertical integration.

We continuously make advancements to WIRTGEN technologies so that our customers can work just as efficiently as we can - made possible by our decades of experience. All our inventions are based on worldwide road construction and road rehabilitation projects as well as mineral processing.

WIRTGEN BRAND HEADQUARTERS

Windhagen, Rhineland-Palatinate, Germany

Products: Cold milling machines, hot and cold recyclers, soil stabilizers, slipform pavers, surface miners Core competencies: Cutting technology, leveling technology, machine control 470 thousand m² site

92
machine
models

MILLING MACHINES FROM THE GLOBAL MARKET LEADER: DESIGNED FOR MAXIMUM PERFORMANCE.

THE WORLD'S ROADS MUST MEET EVER-INCREASING DEMANDS. OUR INNOVATIVE AND STATE-OF-THE-ART MILLING TECHNOLOGY HELPS ENSURE THAT ROAD REHABILITATION PROJECTS ARE BOTH COST-EFFECTIVE AND ENVIRONMENTALLY FRIENDLY. WE ARE THE ENGINE DRIVING CONTINUOUS ADVANCEMENT IN THE INDUSTRY.



VERSATILE REHABILITATION

The cost-effective removal of pavement during road rehabilitation has been one of WIRTGEN's core technologies for over 50 years. Road milling machines from WIRTGEN can mill off damaged surfaces layer by layer or remove entire pavement structures at full depth. The reclaimed milled material (RAP) is a high-quality construction material and can be fully reused. The new surface can be paved immediately after removing the old pavement, which keeps construction times to a minimum.

LARGEST RANGE OF COLD MILLING MACHINES

As the market leader, WIRTGEN offers the industry's most extensive range of cold milling machines, from maneuverable small milling machines to high-performance milling machines for large surfaces. Working widths range from between 14 mm and 3.8 meters. It goes without saying that the machines meet the statutory emis-

sions requirements so that customers worldwide can be supplied with the appropriate machine technology. With its specialized range of high-tech, cold milling machines, WIRTGEN offers innovative solutions that create real added value for customers on construction sites worldwide. The cold milling specialist consistently implements suggestions from the field when making advancements to its high-performance machines and developing intelligent features. This results in solutions that meet real-world requirements and achieve perfect milling results while optimizing the cost of milling operations.

W 50 Ri _ _ _ _ _ _ _ _ _ W 150 CFi _ _ _ _ _ _ _

> Small milling machines are specialists for spot road repairs such as milling out manhole covers or hydrants.



> The compact class combines the advantages of small milling machines, such as maneuverability and flexibility, with the productivity of large milling machines.



COLD RECYCLERS

Heavy loads do not drive over roads without leaving a mark - there comes a time when every road needs a general overhaul. With the world's largest fleet of recyclers, WIRTGEN supplies the leading technologies for this job. Environmental protection and resource conservation are factors of growing importance in road construction, too. This is where WIRTGEN recyclers the world over are playing their part for a brighter future. Depending on the type of damage, different recycling methods are used. Hot recycling is used to rehabilitate porous or deformed surface courses in the shortest possible time. If the entire road structure is affected, WIRTGEN cold recyclers give the roads new stability. WIRTGEN has been a pioneer in the use of environmentally friendly cold recycling right from the beginning.

SOIL STABILIZERS

WIRTGEN soil stabilizers are designed to improve the bearing capacity of soil or road structures. WIRTGEN soil stabilizers offer outstanding ground coverage and a working depth of up to 56 cm, and stabilize the earth by uniformly mixing previously spread binding agents into the unstable soil. Since the existing material is processed on site, soil stabilization is a fast and efficient process compared to the conventional method of removing and replacing the soil.



W 380 CRi

> During cold recycling, the road surface is milled in a single pass, its functional properties are enhanced with binding agents, and then it is repaved.



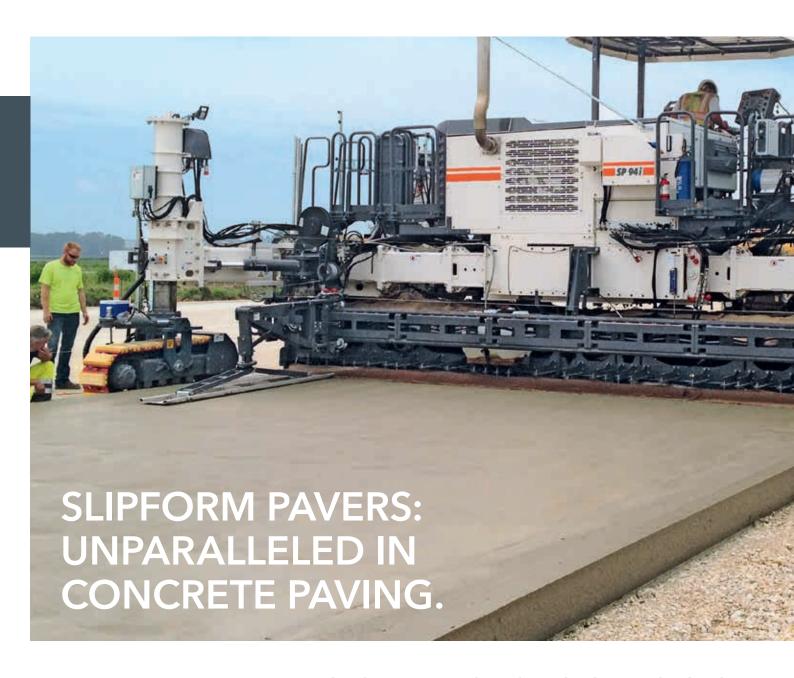
KMA 240I _ _ _ _ _ _

> The mobile cold mixing plant makes it possible to process milled material close to the paving site.





WITH THE WORLD'S LARGEST RANGE OF RECYCLERS AND SOIL STABILIZERS, WIRTGEN HAS THE RIGHT SOLUTION FOR EVERY APPLICATION. WHETHER THE SOIL HAS INSUFFICIENT BEARING CAPACITY OR A ROAD NEEDS TO BE REHABILITATED IN SITU, WIRTGEN COLD RECYCLERS AND SOIL STABILIZERS DELIVER FLAWLESS RESULTS.



ROADS AND RUNWAYS ARE SUBJECT TO IMMENSE LOADS.
CONCRETE SURFACES ARE DESIGNED TO WITHSTAND THIS HEAVY
WEAR FOR YEARS ON END. SLIPFORM PAVERS ARE AN INVALUABLE
TOOL FOR PAVING CONCRETE, AS THEY PRODUCE CONCRETE
PAVEMENTS AND A WIDE VARIETY OF MONOLITHIC PROFILES
WITH AN EFFICIENCY UNMATCHED BY ANY OTHER METHOD.



INSET PAVING

Slipform pavers from WIRTGEN perform precision work when paving heavy-duty, durable concrete pavements and other traffic surfaces such as runways, with working widths of up to 16 m. Texture curing machines then create the desired texture of the concrete surface. With the two-layer paving method, bottom-layer and top-layer concrete are paved in a single pass – saving manpower, time, and resources.

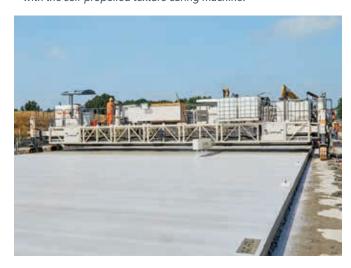
OFFSET PAVING

A further field of application is the continuous paving of monolithic concrete profiles such as gutters, concrete safety barriers, or roadway edges. The smaller slipform pavers can produce almost any profile using the offset method. In this case, the slipform can be mounted to the right or left side of the machine, meaning it can easily be adapted to the respective job site. An intelligent quick-change system makes the concrete pavers more flexible and allows them to complete a variety of on-site operations in one day.

INTELLIGENT AUTOMATIC FUNCTIONS

Numerous intelligent technologies work hand-in-hand in these fully-automated machines, from systems for continuous concrete feeding to 3D systems for precise leveling to modules that automatically insert side tie-bars. Whatever the requirements, WIRTGEN slipform pavers create a made-to-measure concrete surface with excellent load-bearing capacity and a precise pavement profile.

> The concrete surface is perfectly protected and textured with the self-propelled texture curing machine.



> The compact SP 25i slipform paver is capable of paving any type of offset profile as well as constructing a concrete safety barrier.



UNIQUE RANGE OF APPLICATIONS

Our WIRTGEN surface miners cut, crush, and load rock in a single operation. Alternatively, it can also be deposited to the side of the machine or in a windrow between the crawler tracks. WIRTGEN is the only manufacturer to offer both methods, making our surface miners extremely versatile. The crushed material is so fine that it can often be processed without further treatment. While materials of different grades are mixed together during blasting, mining with surface miners improves the quality of the minerals. Thanks to our state-of-the-art cutting technology, our customers can even selectively mine thin seams of the purest quality. But that's not all - since this process is vibration-free and produces little dust and noise, it allows minerals to be mined effectively right up close to residential areas and roads.

24/7 RELIABILITY

WIRTGEN Surface Miners can work around the clock. What's more, we offer our customers a unique individual service for major projects: In close collaboration between the brand headquarters and the local subsidiary, we can set up additional service bases near the project site. This gives us the ability to repair or overhaul the machines professionally and to stock spare parts locally as required. Furthermore, to ensure that these locations provide the highest standards of service, we keep our qualified experts on site 24 hours a day, seven days a week.



220 SM 3.8 _ _ _ _ _

> Mining and depositing coal in windrows with the 220 SM 3.8.



_2500 SM _ _ _ _ _ _

> The 2500 SM mining bauxite and loading it directly onto a dumper truck.





WHEN IT COMES TO MINING MINERAL DEPOSITS, DRILLING AND BLASTING HAVE LONG SINCE BECOME OUTDATED. SURFACE MINING IS THE COST-EFFECTIVE AND ENVIRONMENTALLY FRIENDLY SOLUTION. THE INNOVATIVE PROCESS CONSIDERABLY REDUCES THE AMOUNT OF EQUIPMENT, PERSONNEL, AND TIME REQUIRED COMPARED TO CONVENTIONAL METHODS.







VÖGELE -A WORLD OF QUALITY.

The WIRTGEN GROUP brand's promise is to offer our customers outstanding quality in all of our products and services. How do we keep this promise at VÖGELE? With unparalleled mechanical engineering. With sophisticated innovations and a seamless, cutting-edge product range that offers customized technology for every paving application. With employees who have broad expertise and with technology that not only delivers perfect results, but is also extremely user-friendly. This is how we give our customers a decisive competitive edge. With the knowledge and experience of the global market leader for pavers, we ensure that you always achieve outstanding paving results, no matter where you are. If you want to be number 1, you can't be satisfied with anything less.

Our factory in Ludwigshafen am Rhein is the world's most state-of-the-art paver manufacturing facility. There, our highly trained employees produce the world's most advanced pavers, paving screeds, and mobile material feeders for every application.

VÖGELE BRAND HEADQUARTERS

Ludwigshafen, Rhineland-Palatinate, Germany

Products: pavers, mobile feeders, extending screeds, fixed-width screeds, process documentation and optimization

Core competences: High compaction technology, grade and slope control systems and 3D control systems

370 thousand m² site

31/12
paver/screed models

www.wirtgen-group.com/voegele



WHEELED AND TRACKED PAVERS

VÖGELE offers a broad range of tracked and wheeled pavers for every paving need. From small mini and sidewalk pavers to large pavers capable of paving widths of up to 18 m, VÖGELE offers its customers state-of-the-art machines. VÖGELE pavers are known for their innovative and reliable technology. For example, each unit is equipped with state-ofthe-art control technology and robust material handling components. The tracked pavers are equipped with a drive system designed for maximum accuracy and traction, giving them a powerful advance rate at all times. Wheeled pavers are highly maneuverable and easy to transport under their own power.

In order to more clearly distinguish between the different models in its extensive product range, VÖGELE has divided it into two lines: the Premium Line and the Classic Line.

PREMIUM LINE

The Premium Line encompasses all of VÖGELE's pavers that are equipped with the latest cutting-edge technologies and feature advanced engineering. This includes all of the "dash 3" generation of products that are equipped with the intuitive and ergonomic ErgoPlus 3 operating concept. This new system offers additional features compared to ErgoBasic, such as the AutoSet Plus automatic functions, the PaveDock Assistant communication system, and the VÖGELE EcoPlus emissions reduction package.

CLASSIC LINE

The Classic Line is a range of pavers equipped with the easy-to-understand ErgoBasic operating concept. These models are characterized by a solid machine concept that offers a basic level of operator comfort. This does not mean that the machines lack anything that is of fundamental importance during day-to-day paving operations, however.

PowerFeeder MT 3000-3i Offset _ _

> The advanced and powerful material feeder, whose most outstanding feature is an uninterrupted, non-contacting supply of mix.



_SUPER 800i _ _ _ _ _ _ .

> The ideal small paver for a wide range of applications, such as the construction and repair of farm tracks, minor roads, footpaths and cycle paths.





CONSTRUCTION OF COMPACT ASPHALT PAVEMENTS USING THE IN-LINE _ _ _ PAVE PROCESS, PAVING THIN WEARING COURSES WITH SPRAYJET TECHNOLOGY OR OPTIMIZING ROAD CONSTRUCTION PROCESSES WITH WITOS PAVING: VÖGELE SUPPLIES INNOVATIVE SOLUTIONS FOR EVERY CONCEIVABLE REQUIREMENT. WITH TECHNOLOGIES FROM THE GLOBAL MARKET LEADER, CONSTRUCTION PROJECTS CAN BE IMPLEMENTED WITH THE HIGHEST QUALITY AND MAXIMUM COST-EFFECTIVENESS.



PAVING SCREEDS

VÖGELE offer paving screeds for a wide range of applications. They can be used to achieve working widths of between 0.5 m and 18 m and perfectly pave a variety of materials such as asphalt, concrete, gravel, or even special mixes. VÖGELE's high-compaction technology is particularly unique, producing asphalt layers with the extremely high degree of compaction required to ensure maximum evenness and durability.

THE INLINE PAVE PROCESS

VÖGELE's InLine Pave concept is a particularly innovative paving method designed especially for paving compact asphalt pavements "hot on hot." In this process, the binder course and surface layer are paved in a single pass, which not only creates a perfect bond between the layers but also ensures that the layers are thoroughly interlocked, which is crucial to the roads' durability.

SPRAYJET TECHNOLOGY

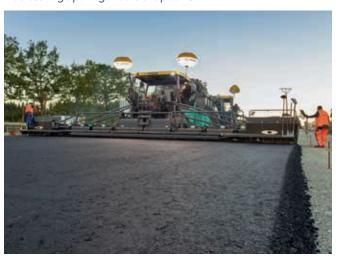
VÖGELE's SprayJet technology has proven its value for many years and is used for pavement rehabilitation and construction in many markets around the world. With this method, the paver sprays bitumen emulsion immediately prior to paving the new asphalt layer. The innovative SUPER 1800-3i SprayJet paves high-quality, extremely durable thin layers hot.

DOCUMENTATION AND PROCESS OPTIMIZATION

Maximum paving quality, tight deadlines - the demands are increasing. With WITOS Paving Docu and WITOS Paving Plus, VÖGELE's software-based solutions, contractors can document their job sites' process data or actively optimize their processes - thereby improving their operational efficiency.

EXTENDING SCREEDS _ _ _ _ _

> The SB 350 fixed-width screed guarantees maximum evenness across large paving widths of up to 18 m.



_ INLINE PAVE _ _ _ _ _

> In the InLine Pave process, two asphalt courses are paved in a single pass.











HAMM - OUTSTANDING COMPACTION.

The Upper Palatinate lies in the middle of Europe. Creativity and inventiveness have a long tradition in this region - numerous multinational companies located here that develop and produce high-tech products and solutions are a testament to this fact. One of these global players and technological leaders in the field of compaction technology is our company, HAMM AG.

Our rollers for road construction and earthworks compaction prove themselves each and every day on construction sites around the globe. As the world's leading manufacturer in this segment, we offer the construction industry a wide range of products. Our extensive range of machines includes tandem rollers, compactors, and pneumatic tire rollers. Numerous solutions for optimizing compaction processes round out our portfolio. As a result, we offer customized, real-world solutions for all compaction jobs in road construction and earthworks.

390

thousand m² site

180

machine models

HAMM BRAND HEADQUARTERS

Tirschenreuth, Bavaria, Germany

Products: Compactors, tandem rollers, pneumatic tire rollers, compact rollers

Core competencies: compaction technology, oscillation, compaction measurement and control, ergonomic machine design, state-of-the-art drive technology

ECONOMICAL AND EFFECTIVE: COMPACTORS FROM HAMM.

THE COMPACTOR'S JOB IS TO PRODUCE SURFACES WITH A HIGH BEARING CAPACITY. COMPACTORS FROM HAMM PERFORM THIS TASK WITH MAXIMUM PRODUCTIVITY AND QUALITY - WHILE AT THE SAME TIME BEING ECONOMICAL AND EASY TO OPERATE. THE COMPANY'S BROAD RANGE INCLUDES MACHINES FROM 5 TO 25 T WITH SMOOTH, STAMPFOOT, OR VC CRUSHER DRUMS.



INTELLIGENT MACHINE CONTROL SYSTEM

The sheer variety of possible applications makes HAMM soil compactors extremely versatile and therefore extremely cost-effective. For instance, when using VIO compactors, the operator can choose between vibration and oscillation. The Hammtronic electronic machine management system guarantees maximum performance in every situation. Hammtronic monitors all engine and vehicle functions, in particular advance drive, vibration, oscillation, and engine speed. The system adapts the vibration and advance speed to the respective operating conditions, prevents the drums or wheels from spinning, and even makes compaction on gradients of up to 63 percent possible. At the same time, Hammtronic keeps the compactors fuelefficient with low noise emissions.

HAMM COMPACTION QUALITY

HCQ modules can be used to measure compaction parameters such as the number of passes, the asphalt temperature, and the asphalt stiffness; evaluate changes; and document compaction results. This produces pavements of uniform bearing capacity, even over large areas with different sub-bases. In asphalt construction, the HCQ Navigator helps compactor operators systematically and homogeneously compact asphalt surfaces, avoiding over-compaction or under-compaction while simultaneously increasing compaction quality.

H 7i _ _ _ _ H 20i _ _ _ _ H

> The H CompactLine series of compactors are extremely easy to operate and feature a powerful advance drive.



> The 3-point swivel joint guarantees unsurpassed off-road mobility and maximum driving comfort.



THE RIGHT ROLLER FOR EVERY JOB

HAMM rollers for asphalt paving operations accelerate and decelerate extremely smoothly, preventing the formation of waves or ripples in the asphalt. With their harmonious overall design, the small rollers in the HD CompactLine series and the tandem rollers in the HD or HD+ series - machines with weights ranging up to 14 tons - give the driver a perfect view of the drums and surrounding job site. The DV+ series of tandem rollers with all-wheel steering stand out thanks to the Easy Drive operating concept and the automatic reversing system, in which the driver always faces the direction of travel. The HP series of pneumatic tire rollers rounds out the product range.

OSCILLATION

Achieving a higher degree of compaction with fewer passes and dynamically compacting where other rollers can only operate statically - this is what makes oscillation compaction from HAMM so special. The basic principle with these rollers is that the drum oscillates horizontally instead of vertically, always maintaining contact with the material being compacted. As a result, this technology improves compaction performance in standard applications, such as the construction of base layers and binder courses. But it has much more to offer, because it also makes dynamic compaction possible when paving asphalt on bridges, when compacting surface courses, when paving thin layers hot, or when compacting pavements in the vicinity of structures sensitive to vibration. The split oscillation drum has been patented by HAMM and is particularly suitable for compacting in curves and roundabouts as well as crossings and junctions.



HD COMPACTLINE SERIES _ _ _ _ _ _

> HD CompactLine compactors are also ideal for gardening and landscaping.



DV+ SERIES _ _ _ _ _

> The DV+ tandem roller offers the operator an ergonomically optimized, comfortable workplace.





HAMM TANDEM ROLLERS ARE KNOWN THE WORLD OVER FOR BEING EASY TO OPERATE, HIGHLY PRODUCTIVE, DESIGNED FOR REAL-WORLD SITUATIONS, MAINTENANCE-FRIENDLY, AND ECONOMICAL. SO IT SHOULD COME AS NO SURPRISE THAT NEARLY EVERY MODEL IN THE CURRENT PRODUCT RANGE HAS RECEIVED AN INTERNATIONAL AWARD FOR ITS USER-FRIENDLY AND INNOVATIVE DESIGN.









KLEEMANN -A TRADITION OF EXPERTISE.

KLEEMANN has been producing crushers and screens for stone processing since the 1920s. All of the company's manufacturing processes, from prefabrication to final assembly, are consolidated under one roof at the brand headquarters in Göppingen. All of its systems are manufactured with the highest degree of precision.

KLEEMANN uses a paced assembly line with state-of-theart parts logistics processes to assemble its crushing and screening plants. This increases productivity and minimizes delivery times. The quality of the core components manufactured by the company has been further improved by process innovations such as the environmentally friendly powder coating system.

An additional benefit of the facility is its large warehouse. This means that KLEEMANN can not only flexibly adapt assembly processes to the order situation at any time, but also effectively ship original parts all over the world.

KLEEMANN BRAND HEADQUARTERS

Göppingen, Baden-Württemberg, Germany

Products: track-mounted jaw crushers, impact crushers, cone crushers, and screens for processing minerals, track-mounted and wheeled stockpile belts

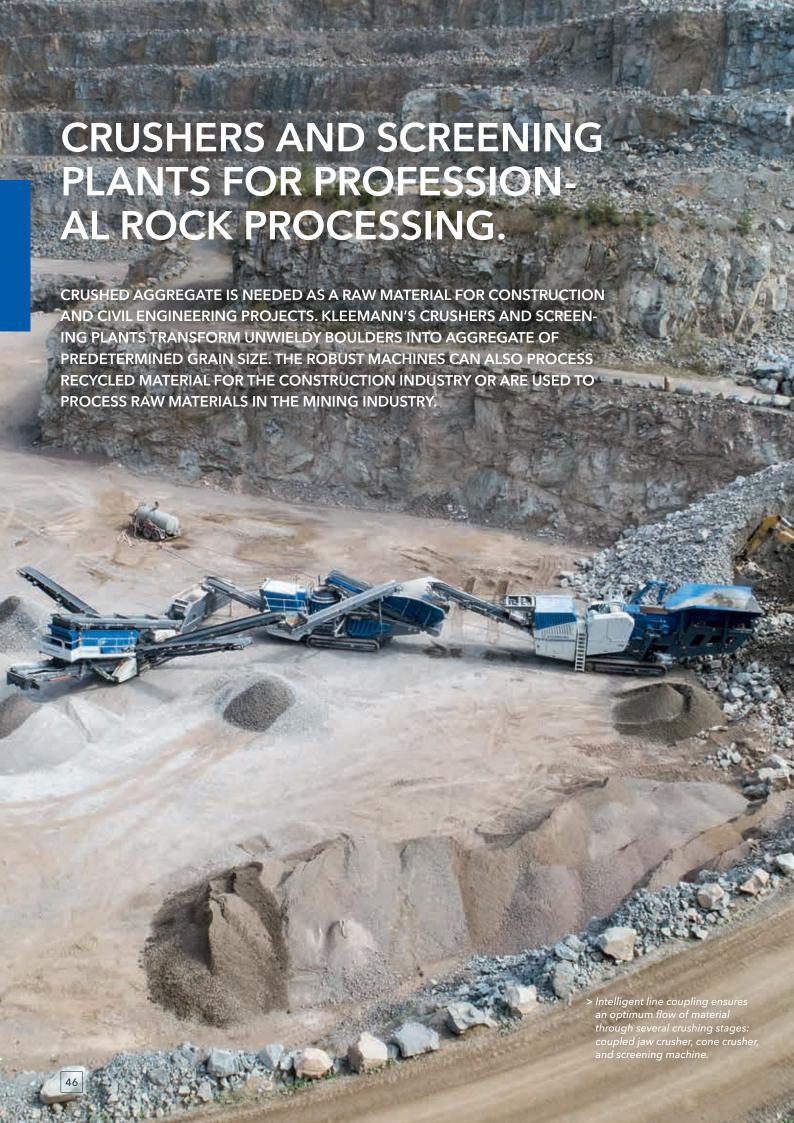
Core competencies: Crushing and screening technology, user-friendly and customized machine design, efficient

drive systems and material flow concepts

150 thousand m² site

machine models

> www.wirtgen-group.com/kleemann



WORLD-CLASS PRODUCTS

KLEEMANN systems are designed to cost-effectively process a wide variety of materials and to produce an end product of the highest quality. They stand out thanks to their high quality and availability, ease of operation, and impressive versatility. Customers can select from MOBICAT mobile jaw crushers, MOBIREX mobile impact crushers, MOBICONE mobile cone crushers, and MOBIFOX secondary impact crushers to process different materials and achieve outstanding results. The MOBISCREEN series of mobile screening plants rounds out the company's lineup.

POWERFUL AND ROBUST

The MOBICAT series of jaw crushers are used for cost-effective coarse and preliminary crushing of natural stone, recycling, and raw material processing. Their capacities range

from 220 to 1,200 t/h, depending on the model. The MOBIREX series of impact crushers is mainly used in soft to medium-hard natural stone and in recycling. They achieve high crushing rates and ideal cubic results in the 1st, 2nd, and 3rd crushing stages. MOBICONE cone crushers are used for medium-hard to hard and abrasive natural stone as well as for processing raw materials in the mining sector. They produce excellent final cubic grain sizes, especially as secondary crushers in the 2nd and 3rd crushing stages. The MOBISCREEN screening plants are available for classifying or coarse screening and round out the overall process.

MOBICAT _ _ _ _ MOBICONE _ _ _ _

> The MOBICAT series of mobile jaw crushers are used as coarse crushers and in recycling applications, for example.



> The MOBICONE series of cone crushers are used as secondary crushers for natural stone in the 2nd and 3rd crushing stages.





AS OUR PLANET'S NATURAL RESOURCES BECOME INCREASINGLY SCARCE, _ _ _ RECYCLING IS BECOMING INCREASINGLY IMPORTANT. IN THE CONSTRUCTION INDUSTRY, RECYCLED PRODUCTS CAN REDUCE THE OVERALL DEMAND FOR PRIMARY RAW MATERIALS. DUE TO THESE FACTORS, THERE HAS BEEN A CLEAR GLOBAL TREND TOWARDS THE USE OF RECYCLED BUILDING MATERIALS IN RECENT YEARS.



EXTREMELY VERSATILE

Whether for natural stone, recycling, or mining applications - KLEEMANN crushers and screening plants are versatile and flexible.

Machines in the EVO Line are versatile all-rounders that can be used for a variety of applications, are easy to transport, have short setup times when being brought into operation and during maintenance, and feature impressive machine availability. They are particularly suitable for the contractor market. The systems of the PRO line are particularly robust and extremely efficient. Their large feed sizes, maintenance-friendly operation, and dual-power capability make them ideal for use in quarries.

COST-EFFECTIVE TECHNOLOGY

Thanks to the robust design of the machines and a broad performance range, we can offer the right system or system combination for every requirement. Our products are designed to handle even the hardest minerals and materials, ensuring that regardless of the material, it can be extracted as cost-efficiently as possible at the specified daily output rate. Our mobile jaw crushers, impact crushers, cone crushers, and screening plants are not only impressive due to the superior quality of the end product, however, but also thanks to their wide range of applications and cost-effective, environmentally friendly operation. Customers can rely on the reliability of our machines just as much as on our decades of real-world experience in application technology.

MOBIREX _ _ _ _ _

> The MOBIREX mobile impact crushers can achieve exceptionally high crushing rates and, above all, excellent cubic results.



_ MOBISCREEN _ _ _

> The MOBISCREEN mobile screening plants are used to screen almost all natural stones and for recycling.









BENNINGHOVEN -THE INDUSTRY PIONEERS.

BENNINGHOVEN has been on a mission to produce cutting-edge, state-of-the-art machines for over 100 years. By systematically making advancements to its product range, BENNINGHOVEN has grown from a small skilled craftsman's business to a global player and is now setting the trends in the field of asphalt mixing plants. We set a further milestone in our successful history when we opened the world's most state-of-the-art production facility for asphalt mixing plants in the summer of 2018. This gives us the ability to offer our customers the best possible solutions for producing asphalt cost-effectively and with the highest quality.

Around 650 employees produce leading-edge asphalt mixing plants at our location in Wittlich. Over an area of more than 313,000 square meters, the world's most advanced asphalt mixing plant manufacturing facility produces flexible solutions for reliable and cost-effective use over the plant's entire service life. With unique innovations in the field of asphalt mixing and combustion technology, BENNINGHOVEN has always been regarded as a trendsetter in the industry. Today the company's activities are still driven by a pioneering spirit and tradition combined with groundbreaking technologies and highly specialized employees.

From steel construction to the development of complex control systems, at BENNINGHOVEN all of our core components are developed and manufactured in-house. Short distances in production, state-of-the-art manufacturing processes, and a high degree of automation allow us to efficiently produce our systems in the world's most cutting-edge asphalt mixing plant production facility.

BENNINGHOVEN BRAND HEADQUARTERS

Wittlich, Rhineland-Palatinate, Germany

Products: asphalt mixing plants in transport-optimized container design, transportable asphalt mixing plants, stationary asphalt mixing plants

Core competencies: asphalt production, firing technology, bitumen, recycling, user-friendly control systems

www.wirtgen-group.com/benninghoven

313 thousand m² site

15 machine models





BENNINGHOVEN plants stand out thanks to maintenance-friendly, high-quality components with a long service life that meet all market and environmental requirements.

EXTREMELY VERSATILE

The ECO range of asphalt mixing plants with capacities from 100 to 320 t/h combines state-of-the-art, innovative BENNINGHOVEN technologies with the highest standards of production in compact container sizes. Maximum mobility means optimum flexibility - these are two defining features of this series, which are suitable for stationary operation but simple to relocate, too. The modular design of the ECO series also makes it possible to subsequently integrate a wide range of high-tech components. This will allow operators to continue to respond to customer and market demands in the future, particularly with regard to asphalt recycling solutions. Due to the design of all the main components in transport-optimized container sizes, it is also easy to transport the plants by road, ship, or rail – because the strength of the plants lies in their worldwide transport capability and in making this as simple, affordable, and effective as possible. At the same time, the high-performance plants with fixed options guarantee maximum mix quality.

UNPARALLELED FLEXIBILITY

The BENNINGHOVEN TBA series of mixing plants covers the capacity ranges between 160 and 320 t/h and is suitable for both semi-mobile and stationary applications. The container-type design of the main components with plug-in wiring results in ideal transportation options and reduces the time needed to set up the modular system. The plant's high degree of flexibility, available options, recycling feed systems, and the ability to upgrade components at any time make the TBA an impressive all-rounder. The ultimate additional value particularly lies in the large hot bin and mix silo storage capacities as well as an RC additive rate of up to 80%.

> When it comes to the transportable asphalt mixing plants in container design, the focus is on simple and effective worldwide transport options - with capacities of 160, 240, and 320 t/h.



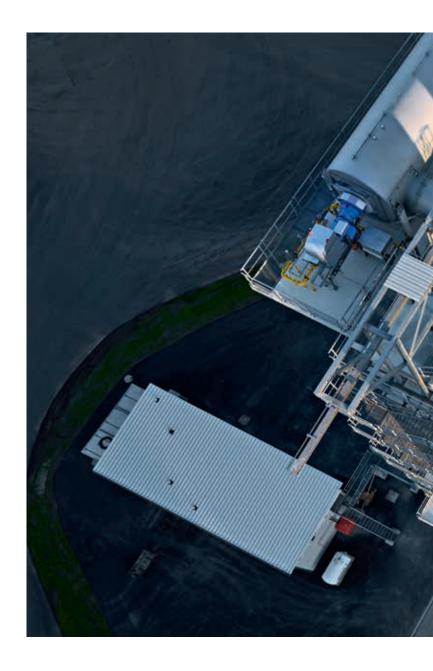
> The plant's high degree of flexibility, available options, recycling feed systems, and the ability to upgrade components at any time make the TBA an impressive all-rounder.



COST-EFFECTIVE AND SUSTAINABLE ASPHALT PRODUCTION

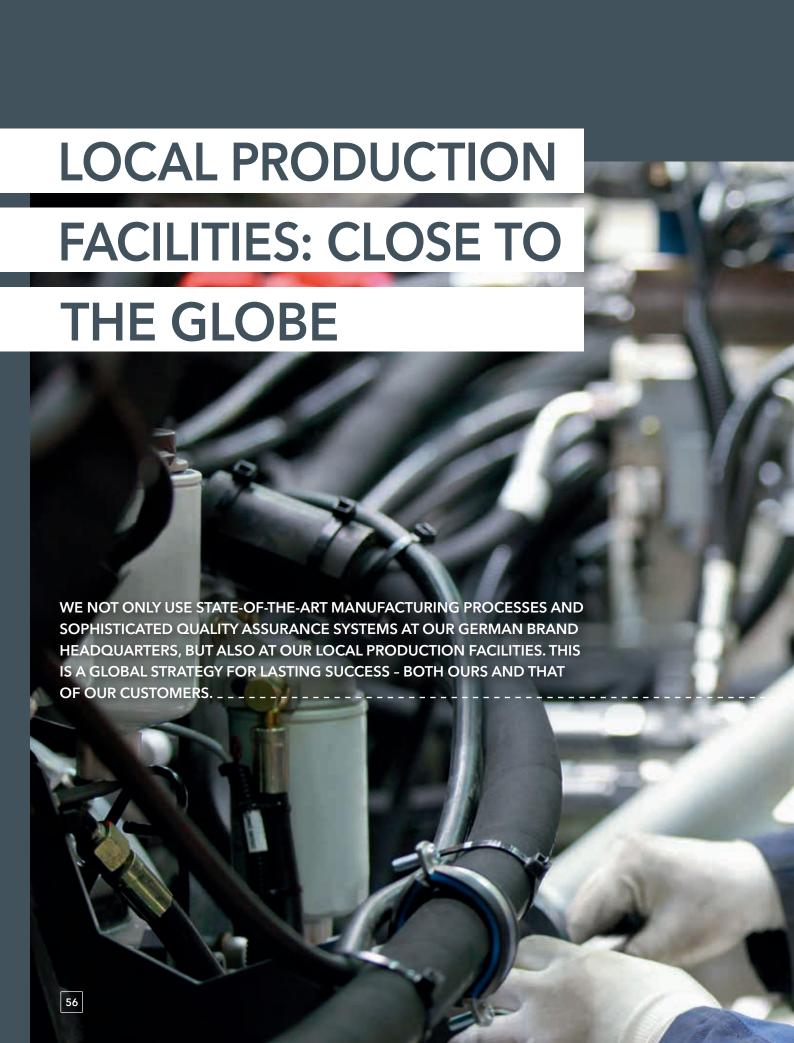
The BA and RPP series of asphalt mixing plants feature an impressive range of unlimited equipment and, with a production capacity of up to 400 t/h, are the flagships of BENNINGHOVEN's product range.

The high RAP feed rates of up to 90+x% are one of the most notable features of the RPP. The BENNINGHOVEN RPP plays a significant role in increasing energy efficiency, cost-effectiveness, and actively protecting the environment. Like all BENNINGHOVEN plants, the BA and RPP models stand out thanks to maintenance-friendly, high-quality components with a long service life that meet all market and environmental requirements.





A THERMAL MIXING PROCESS IS REQUIRED TO TURN AGGREGATES AND BITUMEN INTO ASPHALT FOR ROAD CONSTRUCTION. ASPHALT MIXING PLANTS FROM BENNINGHOVEN ARE IDEAL FOR THIS PROCESS. THEY GUARANTEE MAXIMUM MIX QUALITY AND OFFER THE RIGHT SOLUTION FOR EVERY MARKET REQUIREMENT. THE BROAD PRODUCT RANGE FEATURES PLANTS WITH CAPACITIES UP TO 400T/H.











PRODUCTION CLOSE TO THE MARKET.

THE WIRTGEN GROUP OPERATES LOCAL PRODUCTION FACILI-TIES IN BRAZIL, CHINA, AND INDIA - TO EFFECTIVELY MEET LOCAL DEMAND VIA PRODUCTION CLOSE TO THE MARKET.

PRODUCTS FOR LATIN AMERICA

CIBER, a WIRTGEN GROUP company based in Porto Alegre, Brazil, produces mixing plants for road construction throughout Latin America. The company also exports its machines to Africa. The company produces WIRTGEN road milling machines and HAMM compactors for the Latin American market, too.

> www.wirtgen-group.com/ciber

WHERE MADE IN CHINA STANDS FOR QUALITY

In Langfang, not far from the Chinese capital Beijing, the WIRTGEN GROUP has set up a base that houses an assembly facility as well as a sales and service center including a workshop and spare parts warehouse. The local manufacturing program includes WIRTGEN cold milling machines, VÖGELE pavers, and HAMM rollers. The percentage of locally procured parts and subassemblies is constantly increasing, and the same strict quality standards are applied as at the brand headquarters in Germany.

> www.wirtgen-group.com/china

TECHNOLOGIES FOR INDIA

The WIRTGEN GROUP's Indian subsidiary is located near the industrial center Pune in India's northwest. The new sales and service center is adjacent to a final assembly facility, a workshop, a blasting plant, a paint shop, and a spare parts depot. Licensed production of WIRTGEN GROUP models specially developed for the Indian market has been underway there since 2011. A new local supplier chain has been set up in Pune to ensure a high-quality supply of components for the company's production processes. KLEEMANN screening plants have also been manufactured here since 2015.

www.wirtgen-group.com/india



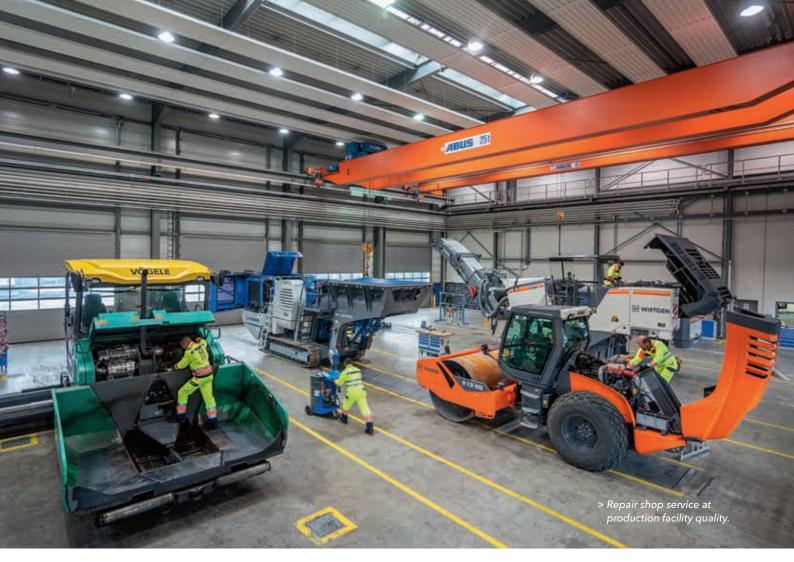




OUR SALES AND SERVICE NETWORK STANDS OUT THANKS TO ITS EXPERT ON-SITE SUPPORT THAT ALWAYS OFFERS CUSTOMER-DRIVEN SOLUTIONS. WE PROVIDE THIS EXCEPTIONAL SERVICE THROUGH OUR OWN SALES AND SERVICE COMPANIES AS WELL AS THROUGH AUTHORIZED DEALERS.

www.wirtgen-group.com/sales-and-service-worldwide

100 of our own branches brand head-quarters in Germany local production facilities in Brazil, China, and India





RELIABLE CUSTOMER SUPPORT.

THE WIRTGEN GROUP IS MORE THAN JUST A SUPPLIER OF
MACHINES: DELIVERING A MACHINE MARKS THE BEGINNING OF
A LONG-TERM SERVICE PARTNERSHIP. OUR TEAM OF EXPERTS
FROM CUSTOMER SUPPORT IS ALWAYS AVAILABLE TO ANSWER
ANY QUESTIONS YOU MAY HAVE ABOUT THE MACHINE.

FIVE BRANDS, ONE WORKSHOP

Well trained technicians and modern tooling ensure that our subsidiaries are always able to offer the complete range of services expected of a reliable repair shop. Meanwhile, the experts on site can always rely on the support of our brand headquarters.

The services offered by our workshops include inspection, maintenance and overhauls, as well as machine repairs. Continual modernization, high-quality special-purpose tools, diagnostic software for fault analysis and optimized workflows minimize the downtimes of our customers' WIRTGEN GROUP machines.

RELIABLE SERVICE PARTNERS

When servicing is required, an experienced service technician travels directly to our customers on the job site and quickly conducts a fault diagnosis. Our service diagnosis system serves as an interpreter between man and machine and significantly simplifies the diagnosis process.

Thanks to their advanced equipment and special tools, our service technicians can quickly get the machine up and running again. The convenient locations of our subsidiaries and dealers means we are never too far away and can provide rapid assistance in emergencies. We provide comprehensive technical support and applications consulting – an on-site service that checks all the boxes.

WIRTGEN GROUP ORIGINAL SPARE PARTS

For optimum performance and a long service life, we replace consumables exclusively with WIRTGEN GROUP original parts from well-stocked spare parts warehouses. We draw on our decades of real-world experience at job sites around the world when developing our original WIRTGEN GROUP spare parts, which are perfectly tailored to the requirements of our high-performance machines so as to optimally support their performance.

www.wirtgen-group.com/servicewww.partsandmore.net





THEORETICAL KNOWLEDGE GAINED FROM REAL-WORLD APPLICATION.

ENSURING OUR CUSTOMERS' LONG-TERM SUCCESS WITH THEIR WIRTGEN GROUP MACHINES IS OUR TOP PRIORITY. WE OFFER A WIDE RANGE OF TRAINING OPTIONS TO PROVIDE OPERATING PERSONNEL WITH THE NECESSARY KNOWLEDGE AND SKILLS. _ _ _ _

RELIABLE TRAINING

The long-term, optimum use of our machines requires the operator to be qualified and have the necessary technical skills for servicing and maintenance. The WIRTGEN GROUP offers a range of training opportunities where you can learn the relevant skills and expertise to ensure that our machines are used effectively over the long term. Our experts share their knowledge with operators, site managers, service technicians, and maintenance personnel at our brand headquarters, our Centers for Training and Technology (CTT), our subsidiaries, and on site. Small groups of participants, modern facilities, and hands-on training units guarantee optimal learning results meaning that our customers all over the world can be sure they have extremely well-qualified employees.

TAPPING THE FULL POTENTIAL

Our applications consulting helps machine operators tap the full potential of their WIRTGEN GROUP machines on job sites, at quarries, and during asphalt production to avoid application errors and ultimately achieve perfect end results. On job sites or at recycling centers alike, qualified WIRTGEN GROUP technicians and site specialists are on the spot to provide professional advice, both when planning the application and during

implementation. This is how we help our customers maximize the quality of their results. Whether cold recycling, InLine Pave operations, oscillation, or processing recycled material - application specialists from the WIRTGEN GROUP provide professional advice regarding our innovative processes.

WIDOS INFORMATION SYSTEM

WIDOS offers comprehensive electronic documentation for all WIRTGEN, VÖGELE, HAMM, and KLEEMANN machine models - in a single system. The digital documentation system includes the complete spare parts catalog; operating instructions; hydraulic, electrical, and hosing diagrams; machine data; the safety manual; and much more.

The entry-level version, WIDOS Basic, is supplied to customers free of charge for their model series when they purchase their machine.

≥ www.wirtgen-group.com/training



WIRTGEN GROUP

Branch of John Deere GmbH & Co. KG Reinhard-Wirtgen-Straße 2 53578 Windhagen Germany

P: +49-2645-131-0 F: +49-2645-131-392

E-mail: info@wirtgen-group.com

www.wirtgen-group.com

