

Performing to the highest quality standards. Cold Recycler and Soil Stabilizer WR model series

WR 200 | WR 200i | WR 240 | WR 240i | WR 250



Outstanding features of the WR series of cold recyclers/ soil stabilizers



Numerous automated features ensure highly efficient operation.

3 PRECISE METERING SYSTEMS FOR BINDER ADDITION

W WIRTGEN

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Reliable, high-precision metering systems for improved mixing quality.

WIDE RANGE OF APPLICATIONS

Finely tiered WR model series for a wide range of applications in soil stabilization and cold recycling.

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STEERING SYSTEM TAILORED TO FIELD REQUIREMENTS

Steering systems tailored to field requirements for maximum flexibility on the construction site.

8 | HIGH MILLING AND MIXING PERFORMANCE

Our expertise and experience of many years for maximum milling and mixing performance.

EFFICIENT ENGINE AND DIAGNOSTIC SYSTEMS

High-powered engine and high-tech diagnostic systems for maximum operational availability.

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PERFECT VISIBILITY CONCEPT AND COMPREHENSIVE CAMERA SYSTEM

The operator is additionally supported by a perfect visibility concept and intelligent camera system.

PERFECTION IN ERGONOMIC DESIGN AND HANDLING

Intuitive operating concept and outstanding ergonomic design for high machine productivity.

OUTSTANDING ALL-TERRAIN MOBILITY

Unrivalled all-terrain mobility for maximum performance in particular in soil stabilization.

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Added value

that pays dividends.



W WIRTGEN

Three machine models world class times three



The WR 200/WR 200i does not require a special permit for 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.

he multipurpos VR 240/WR 240



The WR 240/WR 240i is the all-rounder in the WIRTGEN fleet. 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 top-performing WR 250



The WR 250 is a high-performance machine designed to cater to the 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.

Working width:	2,000 mm	Milling performance:	1.6 kW/cm
Working depth:	0 to 500 mm	Ideal performance range	
Maximum engine output WR 200:	315 kW/428 PS	in soil stabilization:	1,000 to 5,000 m²/day
Maximum engine output WR 200i:	320 kW/435 PS	Ideal performance range	
Operating weight, CE:	23,900 kg	in cold recycling:	400 to 800 m ² /h
		Recycling depth in asphalt:	10 to 15 cm

	2,400 mm	Milling performance:	1.9 kW/cm
Working depth:	0 to 510 mm	Ideal performance range	
Maximum engine output WR 240:	455 kW/619 PS	in soil stabilization:	4,000 to 8,000 m²/day
Maximum engine output WR 240i:	447 kW/608 PS	Ideal performance range	
Operating weight, CE:	29,400 kg	in cold recycling:	500 to 1,000 m ² /h
	· · · · · · · · · · · · · · · · · · ·	Recycling depth in asphalt:	15 to 20 cm

Working width:	2,400 mm	Milling performance:	2.4 kW/cm
Working depth:	0 to 560 mm	Ideal performance range in soil stabilization:	
Maximum engine output:	571 kW/777 PS		6,000 to 12,000 m²/day
Operating weight, CE:	31,000 kg	Ideal performance range in cold recycling:	700 to 1,200 m²/h
		Recycling depth in asphalt:	20 to 25 cm

Wide range of applications

FULL-FLEDGED SOIL STABILIZER

The finely tiered WIRTGEN WR model series offers the perfect solution for each type of job in soil stabilization and cold recycling. Soil stabilization scores top marks in comparison to soil exchange as it requires fewer truck 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 binders, such as lime or cement, into the existing, insufficiently stable soil at working depths of up to 560 mm to convert it into a construction material of high quality in an in-situ process.

The resulting homogeneous soil-binder mixture offers high tensile strength, compressive strength and shear strength values as well as long-term water resistance, frost resistance and volume stability. Typical applications include the construction of paths, 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.

The WR model series fully co	overs all performance c	lasses in soil stabilization
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	WR 200/WR 200i	WR 240/WR 240i	WR 250
Full performance range	500 to 8,000 m²/ day	1,000 to 10,000 m²/day	2,000 to 15,000 m²/day
Ideal performance range	1,000 to 5,000 m²/ day	4,000 to 8,000 m²/day	6,000 to 12,000 m²/ day









Wide range of applications



SOIL STABILIZATION WITH ADDED LIME



SOIL STABILIZATION WITH ADDED CEMENT



For homogenization, the WR uses its powerful milling and mixing rotor to granulate and scarify the existing soil without added binders. The homogenized soil mixture is graded by a motor grader and then compacted by different HAMM rollers.



For soil stabilization, binder is pre-spread in a first step by the all-wheel driven Streumaster SW 19 SC "Rhino". Following behind the binder spreader, the WR uses its powerful milling and mixing rotor to mix the existing soil and pre-spread binder. The resulting homogeneous soil mixture is graded by a motor grader and then compacted by different HAMM rollers.



For the production of a new hydraulically bound base layer, cement is pre-spread in a first step by a Streumaster towed spreader, which is followed by a water tanker truck. The WR then uses its powerful milling and mixing rotor to mix the existing material and pre-spread cement. Water is simultaneously injected into the mixing chamber via an injection bar. The resulting homogeneous base course material is graded by a motor grader and then compacted by different HAMM rollers.



Wide range of applications

HIGH-PERFORMANCE COLD RECYCLER

Steadily increasing volumes of car and truck traffic cause structural damage to the individual layers of asphalt roads over time, thus reducing their bearing capacity. When operating as a recycler, the WR corrects these deficiencies quickly and economically while being efficient on resources at the same time. It is equipped with a powerful milling and mixing rotor and state-of-the-art injection systems. The cold recycler mills and granulates the existing asphalt pavement, injects binders and water in precisely metered quantities and mixes all three in a single operation. The new base layers produced in this in-situ process

are distinctive for their exceptionally high bearing capacity.

The range of additives or binders suitable for cold recycling includes cement, water, bitumen emulsion and foamed bitumen. Highly precise metering, consistently high mixing quality, clearly structured, easy operation and precise levelling guarantee perfect work results. The different machines of the WR model series are the ideal choice for all types of operations ranging from the recycling of thin asphalt layers on minor roads with low traffic volumes all the way to recycling up to 250-mm thick asphalt layers on heavily trafficked motorways exposed to extremely high loads.

The WR model series covers the full range of applications in cold recycling.

	WR 200/WR 200i	WR 240/WR 240i	WR 250
ldeal performance range	up to 800 m²/h	up to 1,000 m²/h	up to 1,200 m²/h
Recycling depth in asphalt	10 to 15 cm	15 to 20 cm	20 to 25 cm





1 | Bitumen tanker truck

2 WM 1000 slurry mixer (in combination with WR 240/WR 240i/WR 250 only)

3 WR 240/WR 240i/WR 250 cold recycler

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- 4 | Single-drum compactor
- 5 Grader

Tandem roller

Milling and mixing rotor

Injected foamed bitumen

Injected water-cement slurry

10 Recycled, homogeneous construction material

Wide range of applications



RECYCLING WITH PRE-SPREAD CEMENT AND BITUMEN EMULSION



RECYCLING WITH CEMENT SLURRY AND FOAMED BITUMEN



For the production of a hydraulically bound base layer, a layer of cement is pre-spread in a first step by a Streumaster binder spreader, which is followed by a water tanker truck. The WR uses its powerful milling and mixing rotor to granulate the damaged pavement layers, simultaneously mixing in the pre-spread cement and injected water. The resulting homogeneous construction material is finish-graded by a motor grader and then compacted by different HAMM rollers.



Small quantities of cement are pre-spread in a first step by a Streumaster binder spreader, which is followed by water and emulsion tanker trucks. The WR uses its powerful milling and mixing rotor to granulate the damaged pavement layers, simultaneously mixing in the pre-spread cement and injecting water and bitumen emulsion into the mixing chamber via two separate, microprocessor-controlled injection bars. The resulting homogeneous construction material is finish-graded by a motor grader and then compacted by different HAMM rollers.



A bitumen tanker truck travels ahead, followed by a WIRTGEN WM 1000 slurry mixer. The bitumen tanker truck and slurry mixer supply the WR 240/WR 240i, WR 250 with the binders required for recycling the pavement in need of repair. The recycler uses its powerful milling and mixing rotor to granulate the damaged pavement layers, simultaneously injecting water-cement slurry and foamed bitumen into the mixing chamber via two microprocessor-controlled injection bars. The resulting homogeneous construction material is finish-graded by a motor grader and then compacted by different HAMM rollers.





Designed with

human-machine

interaction in mind.

ALL IS SET TO GO, WAITING FOR YOUR COMMAND. INNOVATIVE COMPUTER-ASSISTED SYSTEMS ARE THERE TO SUPPORT YOU. RELIEVING YOU OF A SIGNIFICANT PART OF YOUR WORKLOAD. ECONOMI-CAL. PRODUCTIVE. ADD TO THIS: PERFECTION IN ERGONOMIC DESIGN, VISIBILITY AND COMFORT IN THE INNOVATIVE, SPACIOUS OPERATOR'S CABIN. GIVING YOU FULL CONTROL: PERFECTLY DESIGNED INTERACTION BETWEEN MAN AND MACHINE. RELAXED WORKING, TREMENDOUS OUTPUT.



Perfection in ergonomic design and handling

SPACE AND OPERATOR COMFORT -TWO PREREQUISITES FOR SUCCESS

The workplace of the machine operator has been designed with precisely this concept in mind. The soundproof, spacious cabin of the WR offers ample room to move, a comfortable interior and pleasant indoor temperatures. Its numerous equipment features include a comfortable driver's seat, powerful climate control and heating system, radio with CD player, compressed-air connection and air gun for cabin cleaning, backlit controls and ample storage space. These features not only increase operator comfort and performance but also improve the machine's productivity on a daily basis.





1 The multifunctional joystick on the right arm console fits perfectly into the palm of the operator's hand.

2 The colour screen mounted on the steering column is positioned in the operator's immediate field of view.

TAKING ERGONOMICS TO A WHOLE NEW LEVEL

The anatomically shaped driver's seat with spring and air cushioning is the WR's showpiece in terms of ergonomic design. It can be fully adjusted to the operator's personal preferences, guaranteeing a comfortable seating position for many hours. In addition, ergonomically designed controls are integrated in both arm consoles. Arranged within easy reach, they allow intuitive operation. All important machine features have been grouped together intelligently in the multifunctional joystick of the right-hand arm console and can therefore be performed with effortless ease. The entire driver's seat including arm consoles and steering column can be swivelled through 90 degrees to either side, giving the operator full visibility towards the rear of the machine while maintaining a relaxed body posture.

> The individually adjustable comfort seat enables the operator to find the perfect position.





1 The machine offers ready access to the spacious operator's cabin.





Perfection in ergonomic design and handling

THE WR MAKES WORK EASY -DAY AFTER DAY

Construction projects are nowadays carried out under tremendous pressure of time with no regard for adverse weather, darkness or night. This is where the intelligent lighting concept comes into play. The lighting system of the WR comprises six working lights at the front of the cabin, optionally in LED design, two spotlights each on the left and right side, two cornering lights at the rear and two spotlights allowing flexible mounting by means of magnetic bases. Operation can thus continue at full swing even after the sun has set. "Welcome" and "Go home" lights feature: when walking towards or away from the WR, the machine's surroundings can be illuminated by means of LED lights. Safety first: side railings are folded up in a few simple steps when working on the engine or cooler. The cabin complies with ROPS / FOPS standards, offering maximum protection for the machine operator.

The comprehensive lighting system fully illuminates all important points of the machine and its surroundings.





Automated features for efficient operation

BOOSTING PERFORMANCE AT THE MERE PUSH OF A BUTTON

The WR has been provided with an intelligent automated feature which controls lowering and raising of the milling and mixing rotor. The operator initiates the automated process by means of the multifunctional joystick; the WR completes it all on its own: in a first step, the machine is lowered rapidly, and the front and rear rotor plates move into previously specified positions. Once the lifting columns are in working position, the milling and mixing rotor is lowered into the ground until the previously set working depth has been reached. Moving the joystick forward then enables forward motion of the machine. The excavation developing at the end of each cut is closed by initiating - via joystick - the automated feature raising the rotor out of the cut.

While the WR drives a few metres, the cut is fully closed by one of the rotor plates. At the same time, the rotor is slowly raised out of the cut, and the lifting columns move the machine into transport position.

> The milling and mixing rotor moves into the previously specified position.

The WR raises the rotor out of the cut while reversing.





Large glass windows and numerous mirrors offer excellent visibility.

Perfect visibility concept and comprehensive camera system

ENHANCED VISIBILITY ENHANCES PRODUCTIVITY

Good visibility is of vital importance for safe operation and fast-paced processes. The WR offers a visibility concept that is unique in the industry: large glass windows on the left, front and right side of the cabin are complemented by a set of mirrors tailored to field requirements to provide the operator with a full view of the entire construction site. The spacious cabin can be moved to project over the edge of the machine on the right, and the driver's seat swivelled through 90 degrees to offer an

unobstructed view of the working edge. This array of features makes child's play of operating flush to kerb without the need for extensive reworking.

The excellent view of the working edge on the right side of the machine ensures highly precise recycling along pavement kerbs on the one hand while enabling highly precise overlaps on the other.







1-2 The cabin can be moved far to the right hydraulically, enabling the operator to look past a recycling train travelling ahead.

3 Turning his seat after moving the cabin to the right gives the operator a full view of the right-hand working edge.

4 The right-hand wheels travel inside the working width to allow flush-tokerb operation.





Perfect visibility concept and comprehensive camera system

SECOND-TO-NONE CAMERA SYSTEM

Camera systems are developing into increasingly important support tools when it comes to monitoring the operation and process sequences of machines and applications in which good visibility is a must. A reversing camera is included in the basic on-board equipment package of the WR model series.

The intelligent reverse assist system supports the machine operator during reverse travel by fading in driving assistance lines. At the customer's request, a system comprising as many as four high-resolution colour cameras can be installed at the rear of the machine, on the left side of the machine and underneath the machine at the front and rear rotor plates. When operating several cameras, an additional screen is installed to display the camera images.

In the final analysis, complete visibility into important operating processes and areas, such as driving up to obstacles or assessing work results, achieves a significant increase in quality, performance and economic efficiency.

Four cameras offer perfect visibility and maximum operator comfort.

OVERVIEW OF CAMERAS:





2 The camera installed at the rear provides images of what is going on behind the machine.

3 Switching between cameras is effected manually via the joystick.







4 | Camera at the front rotor plate











Compelling features designed for

an entirely new performance class.

IRTGEN

EVERYDAY CHALLENGES ON THE CONSTRUCTION SITE: EXTREMELY UNEVEN GROUND. MANOEUVRING IN RESTRICTED SPACE CONDITIONS. STABILIZING OR RECYCLING ON DIF-FICULT GROUND. ROUTINE FOR THE WR. INNOVATIVE WIRTGEN TECHNOLOGIES PUT YOUR COMMANDS INTO ACTION WITH PINPOINT PRECISION. ADD TO THIS: HIGH ENGINE POWER AND AMPLE POWER RESERVES. THE WR: BENCHMARK IN DRIVING STABILITY, MANOEUVRA-BILITY AND TRACTION - TAKING PERFORMANCE TO AN ENTIRELY NEW DIMENSION.



The machine's allwheel drive enables it to operate even on deep, excessively wet ground.

Outstanding all-terrain mobility

EASY JOB ON HEAVY GROUND

Traction is the magic word for efficient soil stabilization on deep, muddy ground, and of that the WR has enough and to spare. Extra large, deep-tread tyres are effective in transmitting the engine's high drive power into the ground. The powerful all-wheel drive ensures constant maximum traction of each of the four hydrostatically driven wheels. Intelligent distribution of the machine's weight adds to ensuring uniform traction. An automatic power controller governs the machine's advance speed in accordance with the engine load, thus dispensing with the need to engage or disengage the differential lock. Automatic height adjustment via the machine's fourfold full-floating axle is yet another feature that plays its trumps where high ground clearance is required when operating on deep, muddy ground. The machine's advance speed is continuously adjustable from zero to maximum speed both during operation and in transport mode.

In short: the WR is the ideal candidate for mixing in binders on difficult ground.







1 The engageable hydraulic flow divider guarantees consistently high traction regardless of ground conditions.

2 The machine's all-wheel drive distributes the drive power evenly to all four wheels.



Levelling out ground irregularities is an easy exercise for the WR.

Outstanding all-terrain mobility

STABLE DRIVING PERFORMANCE AND AMPLE GROUND CLEARANCE

The WR moves effortlessly even on extremely uneven ground while retaining its horizontal alignment all the time. The machine's automatic fourfold full-floating axle and electronic cross slope sensor are important features when it comes to ensuring machine stability and balance. The cross slope sensor enables the WR to operate parallel to the surface or at the specified cross slope. The tried-andtested, fourfold full-floating lifting column design can be relied on to level out any major ground irregularities quickly and in a dynamic process. It enables the milling and mixing rotor to always maintain the specified working depth both on the left and right side, thus ensuring precise work results. The wheels are height-adjustable in pairs - left, right, front or rear - for full adjustment to site conditions. When driving crosswise on sloping terrain, the operator can adjust the machine to a more convenient horizontal position by means of the "roll" feature. And the operator benefits, too - high driving convenience promotes relaxed working.











1 The cross slope sensor is used to set and maintain the specified cross slope.

2 Longitudinal gradient and cross slope are adjusted conveniently via the left-hand joystick.

3-4 *"Roll"* feature: the machine levels out horizontally at the mere flick of a switch.







Straight-ahead mode: the front wheels are steered via the steering wheel.

The rear wheels remain in straight-ahead position automatically but can be steered separately via the joystick.



Working direction



Working

direction

Crab steering mode: all four wheels are steered at parallel angles via the steering wheel.



Working direction

Different steering modes for superior ease of operation.

Steering system tailored to field requirements

QUICK MANOEUVRING IN RESTRICTED SPACE CONDITIONS

An electrohydraulic "steer-by-wire" steering system provides the WR with everything it takes for easy and smooth steering behaviour. The machine operator can choose among three different steering modes: straight-ahead, crab or cornering mode. Each of the three steering modes is the fastest way to reach the intended position in its specified field of application. In cornering mode, the WR is capable of performing a minimum turning radius of 4,500 mm. The innovative oversteering feature enables the rear wheels to be turned even further, allowing the WR to perform an exceptionally small turning radius of no more than 3,150 mm. This undercuts even the minimum turning radius of standard passenger cars.

The currently selected steering mode is clearly displayed at all times and can be conveniently changed via the multifunctional joystick. The highly precise steering system and free choice of steering mode relieve the operator, enabling him to focus on productivity and on ensuring that his work meets the highest quality standards.



Cornering mode: the front and rear wheels





Cornering mode with oversteering feature: once a specified steering angle has been reached, the rear wheels can be turned even further via the steering wheel. Oversteering enables even smaller turning radii to be achieved.



 $\begin{array}{l} \mbox{Minimum turning radius in} \\ \mbox{cornering mode with oversteering:} \\ \mbox{R}_{min} = 3,150 \mbox{ mm} \end{array}$



1 In cornering mode, the machine operator can oversteer the rear axle to achieve minimum turning radii.

2 The exceedingly small turning radius enables quick turning manoeuvres even in extremely restricted space conditions.

Efficient engine and diagnostic systems

SUPERIOR ENGINE TECHNOLOGY

The state-of-the-art, high-torque diesel engine installed in the WR model series is the ideal candidate for strength-sapping soil stabilization and cold recycling operations. But it also uses its "brains" as the intelligent, fully electronic engine management system optimizes engine performance: the torque is maintained at a constantly high level even in case of extreme engine lugging. If required, ample torque reserves enable even higher engine outputs to be achieved. Automatic adjustment of the engine speed reduces fuel consumption. Needless to say that the engine technology of the WR model series complies with the current standards of exhaust gas after-treatment:

WR 200 = EU Stage 3a/US Tier 3 WR 200i = EU Stage 4/US Tier 4f WR 240 = EU Stage 3a/US Tier 3 WR 240i = EU Stage 4/US Tier 4f WR 250 = US Tier 2





1 The soundproof engine cowling opens at a mere flick of the wrist.

2 All engine models installed in the different WR models impress with ideal characteristics: increased engine loading reduces engine speed and increases torque while the engine output remains nearly constant.





1 High-tech diagnostic systems increase productivity.

Efficient engine and diagnostic systems

QUICK ON-BOARD DIAGNOSTICS

State-of-the-art measuring technology is by far superior to conventional, manual measuring methods. We have therefore equipped the WR with high-tech diagnostic systems which enable maintenance diagnostics, parameter settings or troubleshooting to be performed quite effortlessly via the control panel in the operator's cabin. The machine's automatic diagnostic system autonomously monitors valves, sensors and control components. Numerous clearly visualized pages provide quick and accurate information on the machine's current operating parameters. In addition, maintenance requirements are minimized by extended servicing intervals and an intelligent maintenance concept. The few points of maintenance are arranged in a clear pattern and offer easy access from the ground or via access ladders.

In short: maximum operational availability of the WR is ensured.






2 When opened, the engine cowling offers ready access to the engine compartment, hydraulic system, air filter and pumps.

3 The oil level can be checked quickly and easily from the ground.



4 Diagnostics and parameter settings are performed via the control screen.



High-tech features

for premium quality:

it's the mix that counts.

PERFECTLY ENGINEERED MILLING TECHNOLOGY - WIRTGEN'S CORE EXPERTISE. USING PERFECTLY MATCHED HIGH-TECH COMPONENTS. MANUFACTURED FROM HIGH-QUALITY MATERIALS, OPTIMIZED IN BOTH FUNCTIONALITY AND DESIGN. INCLUDING STATE-OF-THE-ART, HIGHLY PRECISE METERING SYSTEMS FOR DIFFERENT TYPES OF BINDERS. FOR HIGH MILLING AND MIXING PERFORMANCE, PERFECT MIXING QUALITY AND HIGH AREA PERFOR-MANCE. IN OTHER WORDS: SUCCESS GUARANTEED.



1 WIRTGEN milling and mixing rotors guarantee perfect mix quality.

High milling and mixing performance

HEART AND SOUL - THE PERFECTLY ENGINEERED MILLING AND MIXING ROTOR

Milling technology is our core expertise, and that is why the milling and mixing rotor installed in the WR appears to be cast from a single mould. Engine output and milling performance of the different machine models have been perfectly matched, the respective combinations of working width and working depth enabling efficient operation. The massive rotor design promotes smooth rotation without any jolts or shocks, thus reducing stress and strain on the drive elements. Toolholders on high bases have been arranged across the entire width of the milling and mixing rotor in a perfect pattern to guarantee homogeneous mixing of the construction materials regardless of the working depth. The hydraulic rotor turning device moves the rotor into the ideal position effortlessly to assist the operator with tool replacement. In addition, the hard-wearing quick-change toolholder system ensures optimum tool rotation, easy tool replacement and effective, continuous operation for extended periods of time.



21	WR 200/ WR 200i	WR 240/ WR 240i	WR 250
Working width	2,000 mm	2,400 mm	2,400 mm
Working depth	0 to 500 mm	0 to 510 mm	0 to 560 mm
3	WR 200/ WR 200i	WR 240/ WR 240i	WR 250
Maximum engine output	315 kW 320 kW	455 kW 447 kW	571 kW
Milling performance	1.6 kW/cm	1.9 kW/cm	2.4 kW/cm



2 Comparing the working width and working depth of the different machine models.

3 Comparing the engine output and milling performance of the different machine models.



4 Homogeneous quality of the recycled mix even in tough operating conditions.

5 Tool replacement made easy using the hydraulic cutting tool extractor.

High milling and mixing performance





EFFECTIVE MILLING ROTOR DRIVE

The WR features a direct mechanical rotor drive which translates high engine power into an equally high milling and mixing output. Large wrap angles on the belt pulleys enable the heavy-duty power belt to transmit the engine power to the rotor gearbox with only minimum performance losses, thus ensuring high efficiency. Positive side effects of the intelligent drive concept are fuel economy and ease of maintenance. In addition, nine (WR 200/WR 200i, WR 240/ WR 240i) and twelve (WR 250) different rotor speeds, respectively can be adjusted via the right-hand arm console in the operator's cabin and the two-stage rotor gearbox on the one hand, and by repositioning the belt pulleys on the other. When adjusted to the correct rotor speed, the WR achieves the specified mixing results at the highest possible advance speed and lowest possible fuel consumption rates.

Direct mechanical drive via power belt with automatic belt tensioner.

1 The intelligent

drive design ensures fuel economy and ease of mainte-

2 Different engine speeds can be adjusted from the operator's platform.

nance.



ROTOR LA 20 FOR WR 200/WR 200i, WR 240/WR 240i

Regardless of whether the agenda specifies soil stabilization or cold recycling operations – for each model of the WR series, only one milling and mixing rotor is needed to complete the job. The rotor of the WR 200/WR 200i, WR 240/WR 240i is fitted with cutting tools arranged at a tool spacing of 20 mm. The tooling has been perfectly tailored to the performance of these machine models and represents the ideal solution for all applications in soil stabilization and cold recycling. Toolholders with shank diameters of 22 mm or 25 mm can be used in accordance with application requirements.

ROTOR LA 30X2 FOR WR 250

The rotor installed in the WR 250 has a tool spacing of 30x2 mm - two cutting tools per turn are positioned at a tool spacing of 30 mm each. Featuring a large number of cutting tools, the rotor has been perfectly matched to the machine's high performance and high advance speed. Combining high engine power with an exceptionally robust milling and mixing rotor ensures premium mix quality even at high machine advance rates. Toolholders with shank diameters of 22 mm or 25 mm can be used in accordance with application requirements.

> Equipped with the LA 30 x 2 rotor, the WR 250 achieves the exceptionally high production rates specified for this operation.







The hydraulically adjustable crusher bar at the front rotor plate pulverizes even large asphalt slabs.

High milling and mixing performance

PREMIUM MIXING QUALITY REGARDLESS OF THE WORKING DEPTH

The rotor housing and rotor plates have been designed to perfectly match the powerful milling and mixing rotor. The mixing chamber volume is adjusted to the current working depth and material quantity automatically by raising or lowering the rotor. The variable mixing chamber increases with the working depth, thus ensuring maximum performance and good mixing results even when operating at the maximum depth. These features enable the machine to produce perfectly homogeneous mixes from the milled material and binders added. In addition, optimized transport of the mix in the rotor housing results in a tremendous increase in throughput and productivity. The rotor plates at the front and rear provide effective closure of the mixing chamber, serve as material guides and are used to level off the stabilized or recycled layer.







1 Small mixing chamber when operating at shallow working depths.

2 Large mixing chamber when operating at high working depths.

3-4 The front rotor plate opens wide and is equipped with a crusher bar which can be adjusted to produce the specified particle size.

5-6 The pivoting scraper at the rear rotor plate maintains an ideal angle to the surface to ensure perfectly even levelling of the stabilized or recycled layer.









Precise metering systems for binder addition

MICROPROCESSOR-CONTROLLED ADDITION OF BINDERS

Simply keying in the specified parameters once is not enough to achieve high-quality mixing results as they need to be maintained for the entire duration of the stabilizing or recycling operation. The WR has all it takes to meet these requirements: the parameters are entered quickly and conveniently via a small number of controls in the left-hand arm console and via the control screen. Clearly structured, self-explanatory menus enable individual pages to be called up quickly. Large, readily comprehensible display readouts keep the operator fully informed of current parameters during the stabilizing or recycling operation. If specific values require correction, these can be adjusted quickly and effortlessly. Microprocessor-controlled flow meters govern the addition of water, bitumen emulsion or foamed bitumen. The binders are added in accordance with the previously specified parameters, such as working width, working depth, material density and machine advance rate. The injection bars are fitted with up to sixteen spray nozzles each which can be switched on or off separately at any time during the process to adjust the spraying width.





1 At a glance: important machine parameters are permanently displayed in the bottom menu bar of the metering menu.





2 | The printer logs job data and input parameters.

3 Parameters such as the spraying width and amounts of binder to be added can be adjusted intuitively.





The microprocessor-controlled injection bar injects the specified amount of water into the mixing chamber.

Precise metering systems for binder addition

INJECTING WATER

Strict compliance with the specified binder amounts to be added is of paramount importance for high-quality stabilizing and recycling operations. The WR is fully equipped to meet these requirements: robust, microprocessorcontrolled injection systems can be relied on to precisely govern the addition of water, bitumen emulsion or foamed bitumen.

Several injection bars can be installed and several additives injected simultaneously in accordance with application requirements. In addition, a special quick-mounting feature enables the injection bars to be installed or removed quickly and effortlessly.

All hose connections are arranged at the front cross member.





Two injection bars can be operated simultaneously when adding water and bitumen emulsion.

INJECTING WATER AND BITUMEN EMULSION

Tanker trucks driving ahead deliver water and bitumen emulsion to the injection bars via feed hoses connected to the recycler. The microprocessor-controlled injection bars for water and bitumen emulsion are of identical design and can be used for both substances to comply with application requirements. Bitumen emulsion improves the flexibility of the new base layer and reduces cracking. The optimum moisture content is achieved by simultaneously adding water to the process.

Readily accessible connections for water and bitumen emulsion.





The microprocessor-controlled injection bar injects foamed bitumen into the mixing chamber in precisely metered quantities.

Hot bitumen is foamed by injecting

pressed air.

metered quantities

of water and com-

Precise metering systems for binder addition

INJECTING WATER AND FOAMED BITUMEN

For base layers of exceptionally high quality, the WR produces foamed bitumen in up to sixteen separate expansion chambers by injecting small amounts of water and compressed air into hot bitumen which has a temperature of approx. 180°C.



The hot bitumen then foams abruptly, expanding to many times its original volume. In this state, the foamed bitumen disperses very evenly in the mineral aggregate mix to be recycled.

All components carrying hot bitumen are heated and kept at operating temperature, thus dispensing with the need to flush the system. All benefits considered, foamed bitumen is an exceedingly cost-efficient binder.

A test nozzle offers ready access for continuous monitoring of the foam quality during the recycling operation.



SELF-CLEANING FEATURE COMES AS STANDARD

Movable tappets automatically remove any binder build-ups occurring at the nozzle outlets during the recycling operation.

Regular self-cleaning of the spray nozzles via the tappets ensures precise metering across the entire working width. Cleaning of the nozzles is not only performed automatically at fixed time intervals but can also be conveniently activated manually via the screen whenever necessary.

Raising the revolving rotor to maximum height manually at the same time enables build-ups of encrusted material at the nozzle outlets to be removed. Self-cleaning feature: the tappets remove any material build-ups at the nozzle outlets.

Individual tappets clean the up to sixteen nozzles at predetermined intervals.



Precise metering systems for binder addition

INTEGRATED BINDER SPREADER

The "S-Pack" (Spreader-Pack), which can be integrated in the WR 240, WR 240i or WR 250 as an optional feature, is the ideal candidate for the dustless addition of binding agents in cold recycling or soil stabilization. Lime or cement is spread right in front of the milling and mixing rotor in a microprocessor-controlled operation. "S-Pack" is synonymous with the reliable and dustless processing of binders especially on motorways, in industrial estates specifying strict emission requirements, residential areas or nature reserves. The "S-Pack" spreader is loaded to capacity in less than five minutes. A standard 27-tonne silo transporter is emptied within two hours. The spreading process is controlled and monitored intuitively via the integrated control screen.

The outstanding all-terrain mobility of the WR model series now allows binders to be spread safely and precisely even on insufficiently stable ground.

1 Dustless, highly precise spreading of binders regardless of weather conditions.









2 Easy, intuitive operation and diagnostic procedures via the control screen installed in the operator's cabin.

3 The container is loaded with binder in a matter of mere minutes.



Technical specification

	WR 200	WR 200i			
Milling and mixing rotor					
Working width		2,000 mm			
Working depth*		0-500 mm			
Tool spacing		20 mm			
Number of tools		150			
Drum diameter with tools		1,480 mm			
Engine					
Manufacturer	Mercedes Benz	Mercedes Benz/MTU			
Туре	OM 460 LA	OM 470 LA/6R 1100			
Number of cylinders		6			
Power	at 2,000 min ^{.1} : 305 kW/409 HP/415 PS	at 1,900 min ⁻¹ : 308 kW/412 HP/418 PS			
Maximum power	at 1,800 min ^{.1} : 315 kW/422 HP/428 PS	at 1,700 min ⁻¹ : 320 kW/429 HP/435 PS			
Displacement	12.8	10.7			
Fuel consumption, full load	80 l/h	75 l/h			
Fuel consumption in field mix	39 l/h	35 l/h			
Emission standards	EC Stage 3a/US Tier 3	EC Stage 4/US Tier 4f			
Electrical system					
Electrical power supply		24 V			
Filling capacities					
Fuel tank		8301			
Fuel tank when fitted with "S-Pack" option		-			
AdBlue®/DEF tank	-	80			
Hydraulic oil tank		200			
Binder container		-			
Water tank		380 I			
Additional water tank		-			
Driving properties					
Working speed in milling and travel gear	0-210	m/min (12.6 km/h)			
Lateral inclination, max.		8°			
Ground clearance	ар	oprox. 400 mm			
Tyres					
Tyre size, front/rear	620/75 R26				
Shipping dimensions					
Dimensions for truck transport (L x W x H) $$	9,160 ×	x 2,550 x 3,000 mm			
Dimensions for truck transport when fitted with "S-Pack" option (L x W x H)		-			

* = The maximum working depth may deviate from the value indicated due to tolerances and wear

	WR 240	WR 240i	WR 250
	2,400) mm	2,400 mm
	0-51	0 mm	0-560 mm
	20	mm	30 mm x 2
	1	70	208
	1,480) mm	1,480 mm
	Cum	mins	Caterpillar
	QS	X 15	C18 ATAAC
		6	
	at 2,10 447 kW/60	at 2,100 min ⁻¹ : 571 kW/766 HP/777 PS	
		0 min ⁻¹ :) HP/619 PS	at 1,800 min ⁻¹ : 571 kW/766 HP/777 PS
	15.0	14.9	18.1 l
	120 l/h	115 l/h	142 l/h
	60 l/h	55 l/h	70 l/h
	EC Stage 3a/US Tier 3	EC Stage 4/US Tier 4f	no EC regulation/US Tier 2
-		24 V	
	1,500 l	1,380 l	1,500 l
	1,300 l	1,180	1,300 l
	-	100	-
		3201	
		5,5 m ³	
		500 l 950 l	
		7301	
		0-210 m/min (12.6 km/h)	
		8°	
		approx. 400 mm	
		28L-26	
		9,230 x 3,000 x 3,000 mm	
		9,680 x 3,000 x 3,080 mm	

Technical specification

	WR 200	WR 200i			
Weight of base machine					
Empty weight of machine in standard design excluding tank contents	23,500 kg	23,800 kg			
Operating weight, CE*	24,200 kg	24,500 kg			
Operating weight, max. (full tanks, max. weight of additional equipment features)	26,500 kg	26,800 kg			
Weights of tank contents					
Water tank filling in kg	380) kg			
Additional water tank filling in kg		-			
Diesel tank filling in kg (0.83 kg/l)	690) kg			
Diesel tank filling in kg when fitted with "S-Pack" option (0.83 kg/l)		-			
AdBlue®/DEF tank filling in kg	-	80 kg			
Filling of binder container (S-Pack) in kg		-			
Additional add-on weights					
Driver and tools					
Driver	75	75 kg			
5 cutting tool containers	125	5 kg			
Injection system in lieu of standard					
Single ESL: Injection system for water or bitumen emulsion	450) kg			
Dual ESL: Injection system for water and bitumen emulsion	760) kg			
ESL foamed bitumen: Injection system for water and foamed bitumen	1,31	0 kg			
ESL 1800 L: Injection system for water, 1,800 l/min	410) kg			
Integrated binder spreader (S-Pack) including vent air filtering		-			
Additional equipment					
Additional water tank (empty)		-			

* = Machine in standard design, half-full water tank, half full AdBlue® tank, half-full fuel tank, driver (75 kg), on-board tools

WR 240	WR 240i	WR 250
29,000 kg	29,600 kg	30,750 kg
30,000 kg	30,600 kg	31,700 kg
40,400 kg	41,000 kg	43,100 kg
	500 kg	
	950 kg	
1,245 kg	1,145 kg	1,245 kg
1,070 kg	970 kg	1,070 kg
-	100 kg	-
	5,000 kg	
	75 kg	
	125 kg	
	390 kg	
	720 kg	
	1,400 kg	
	390 kg	
	3,800 kg	
	420 kg	

Dimensions WR 200/WR 200i



Dimensions WR 240/WR 240i and WR 250



Dimensions



Turning radius of WR 200/WR 200i, WR 240/WR 240i and WR 250 Dimensions in mm



Rear view of WR 200/WR 200i, WR 240/WR 240i and WR 250 Dimensions in mm

Milling rotor speed WR 200/WR 200i, WR 240/WR 240i

		Ø	315 mm		Ø 315 mm	Ø	355 mm
	Engine speed	Ø 355 mm	Ø 400 mm	Ø 400 mm	Ø 355 mm	Ø 400 mm	Ø 315 mm
		Ø 355 mm	Ø 400 mm	Ø 400 mm	Ø 355 mm	Ø 400 mm	Ø 315 mm
WR 200 i		108 n	nin ⁻¹	13	7 min⁻¹	154 n	nin ⁻¹
WR 200/WR 200i		117 n	nin ^{.1}	14	9 min ^{.1}	168 m	nin ⁻¹
		127 n	nin ^{.1}	16	1 min ^{.1}	181 n	nin ⁻¹
	Engine speed		Ø 400 mm	Ø 400 mm	Ø 315 mm	Ø 400 mm	0 355 mm
		Ø 315 mm	Ø 355 mm	Ø 400 mm	Ø 355 mm	Ø 400 mm	Ø 315 mm
VR 240i		108 n	nin ⁻¹	13	7 min ^{.1}	154 m	in ^{.1}
WR 240/WR 240i		120 n	nin ^{.1}	15	3 min ^{.1}	172 m	iin ⁻¹
		133 n	nin ⁻¹	16	9 min ^{.1}	190 m	nin-1

Milling rotor speed * WR 200/WR 200i, WR 240/WR 240i

* = The milling rotor speed depends on the engine speed setting

Milling rotor speed WR 250

	Setting of drum gearbox	Engine speed	Ø 355 mm	Ø 400 mm	Ø 400 mm	Ø 355 mm		
			87 min ⁻¹		87 min ^{.1} 111 mir		nin ^{.1}	
			97 min ⁻¹		97 min ⁻¹ 124 min ⁻¹			
WR 250			108 min ⁻¹		137 min ⁻¹			
			129 min ⁻¹		129 min ⁻¹		164 r	nin ^{.1}
			145 n	nin ^{.1}	184 r	nin ^{.1}		
			160 n	nin ^{.1}	203 r	nin ^{.1}		

Milling rotor speed * WR 250 * = The milling rotor speed depends on the engine speed setting

Standard equipment

	WR 200	WR 200i	WR 240	WR 240i	WR 25
Base machine					
Basic machine with engine					
Machine chassis with integrated water tank and free visibility onto the right milled edge			•		
The right wheels are for working right up to the edges within the milling width					
Diesel engine power controller for optimum milling and mixing result					
Engine cooling system with temperature-controlled fan speed					
Air system with compressor max. 8 bar					
Lockable, engine cover with integrated sound insulation package					
Mechanical milling drum drive via a drive belt with automatic belt tensioner					
Variable cutting speed by combination of 3 selectable engine speeds and 3 adjustable drive belt pulley arrangements to achieve optimum working results	•	•	•	-	-
Variable cutting speed by a combination of 3 selectable motor speeds, 2 variable drive belt pulley arrangements and one milling drum gearbox with 2-gear stages for achieving optimum working results	-	-	-	-	-
Depending on the working direction possible synchronous rotation or counterrotating mode					
Hydraulic adjustable milling drum flap front					
Hydraulically adjustable scraper plates behind the drum					
Infinitely variable working depth setting by lowering or raising of the complete milling drum					
Automatic mixing space adaptation to the particular working depth (larger mixing space with lower working depth)					
Milling drum rotation device with hydraulic milling drum drive for slowly turning the milling drum in the pick change	-	-	-	-	
Power-controlled lowering speed of the milling drum in starting mode					
Milling and mixing rotor					
Milling and mixing rotor FB2000 HT5 LA20 D22 with 150 picks			-	-	-
Milling and mixing rotor FB2400 HT22 LA20 D22 with 170 picks	-	-			-
Milling and mixing rotor FB2400 HT22 LA30x2 D22 with 208 picks	-	-	-	-	
Spraying unit/binding agent addition					
Version without spraying system					
Version without binder spreader device	-	-			
Version without waste air filtering	-	-			
Machine control and levelling system					
Multi-function control colour display showing important machine operating conditions					
Extensive machine diagnosis in the control display					
Programmable automatic system for initiating and completing the milling process at the particular working depth					
Automatic functions for reducing the strain on the machine operator = Standard equipment			-		

Standard equipment
 Standard equipment, replaceable with optional equipment

= Optional equipment

	WR 200	WR 200i	WR 240	WR 240i	WR 250
Operator's stand					
Comfortable, high-quality cabin with flexible mountings, with roof hatch and indi- vidually adjustable heating					
Ergonomic, air-cushioned operator's seat					
Roll-over protection system (ROPS and FOPS) integrated in the cab frame					
Large windows with optimum visibility of the particular working area and integrated window wipers			•		
Recirculating and fresh air filters can be changed without tools					
Various shelves and storage compartments as well as 12 V and 24 V sockets					
The cabin can be pushed to the side over the right-hand side of the machine in order to gain a better overview of the machine	•		•		
Rotation of the operator's stand through 90° offers optimum adaptation to the particular working situation			•		
Individually adjustable control panel with colour display					
Reversing camera with graphical reversing assistant					
Mirrors on right and left in the the front area of the machine					
Working lights integrated in the cab roof					
Convenient, accessible footstep to the operator's stand			-	-	-
Folding footstepladder to the operator's stand	-	-			
Chassis and height adjustment					
Infinitely adjustable, hydraulic all-wheel drive					
Four-way penduluming of the lifting columns to compensate for unevennesses in the ground					
Electrohydraulic, light all-wheel steering, with the "crab", "cornering" or "straight ahead" steering types	-		•		
Others					
"Welcome-and-go-home light" function with LED lighting in the ladder area					
Safety package with 3 emergency stop switches					
Large tool package in lockable tool box					
Machine preparation for installing the control unit for WITOS FleetView. "WIRTGEN Road Technologies Telematics and on-site Solutions" (WITOS) is the intelligent telematics system of the Wirtgen Road Technologies for efficient fleet and service management worldwide.	-	•	-	-	-
European type test certificate, Euro Test-mark and CE conformity					
Paint standard cream white RAL 9001					
Halogen lighting package 24 V with rotary beacons					

Optional equipment

	WR 200	WR 200i	WR 240	WR 240i	WR 250
Milling and mixing rotor					
Milling and mixing rotor FB2000 HT22 LA20 D22 with 150 picks			-	-	-
Milling and mixing rotor FB2000 HT22 LA20 D25 with 142 picks			-	-	-
Milling and mixing rotor FB2400 HT22 LA20 D25 with 162 picks	-	-			-
Milling and mixing rotor FB2400 HT22 LA30x2 D25 with 200 picks	-	-	-	-	
Spraying unit/binding agent addition					
ESL 1-way: Spraying system for water or bitumen emulsion (800 l/min)					
ESL 2-way: Spraying system for water and bitumen emulsion (2x 800 l/min)					
ESL 2-way foam bitumen: Spraying system for water and foam bitumen (800 l/min, 500 kg/min)					
A spraying system for water (1,800 l/min)					
Version with integrated binder spreader device S-Pack	-	-			
Manual waste air filtering S-Pack	-	-			
Automatic waste air filtering S-Pack	-	-			
External dosing control unit					
Machine control and levelling system					
Slope control sensor					
Operator's stand					
Air conditioner					
Radio system with two loudspeakers and aerial					
Additional monitor system with 3 cameras and monitor					

	WR 200	WR 200i	WR 240	WR 240i	WR 250
Others					
Paint in one special colour (RAL)					
Paint in two special colours (RAL)					
Paint in maximum two special colours with substructure in special colour (RAL)					
Powerful LED / halogen lighting package 24 V with rotary beacons					
Printer for recording the job data					
High-pressure water cleaner, 190 bar 15 l/min					
Additional water tank, 950 litres	-	-			
Battery operated hydraulic unit					
Pneumatic hammer with pick ejector/inserter					
Hydraulic pick ejector drift					
Diesel tank filling pump with 7.5 m suction hose					
Diesel filling Wiggins system					
WITOS FleetView telematics system incl. 3-year operating period (EU)	-		-		
WITOS FleetView telematics system incl. 3-year operating period (USA)	-		-		
WITOS FleetView telematics system incl. 3-year operating period - PROMOTION	-		-		
Hot bitumen hose 4", 4000 LG					
Suction hose for water or emulsion					
Connecting rod					
Suspension tube in connection with WM 1000	-	-			



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