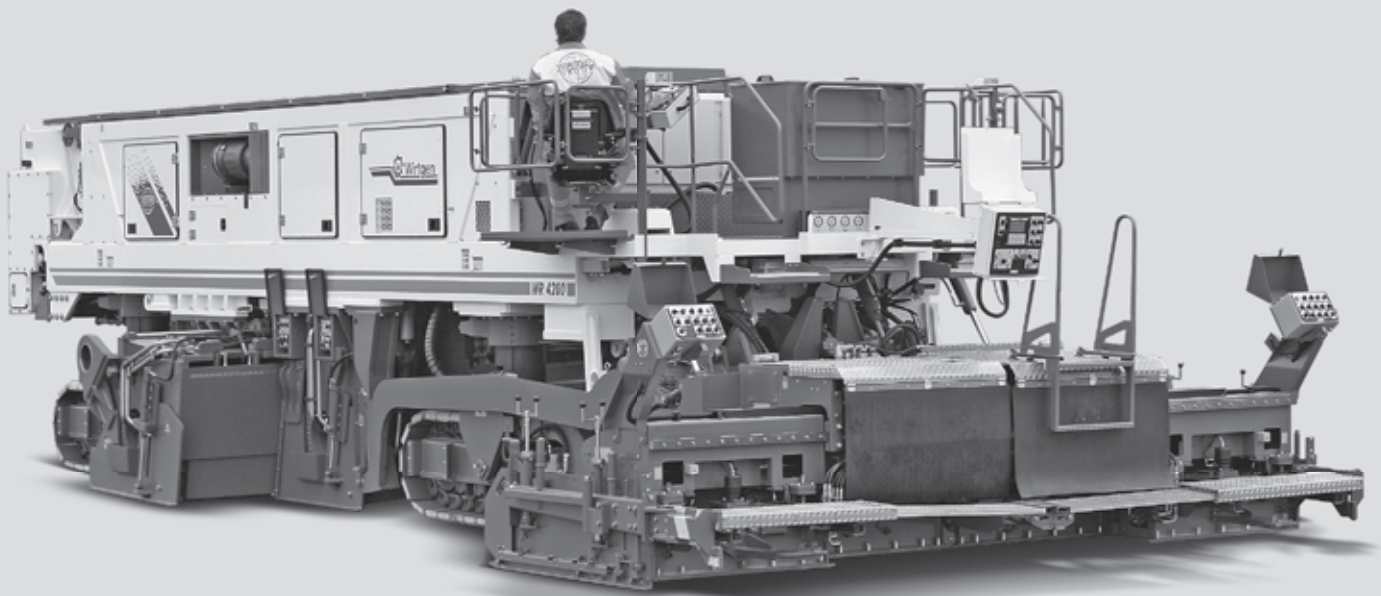




Technical specification

# Cold Recycler WR 4200



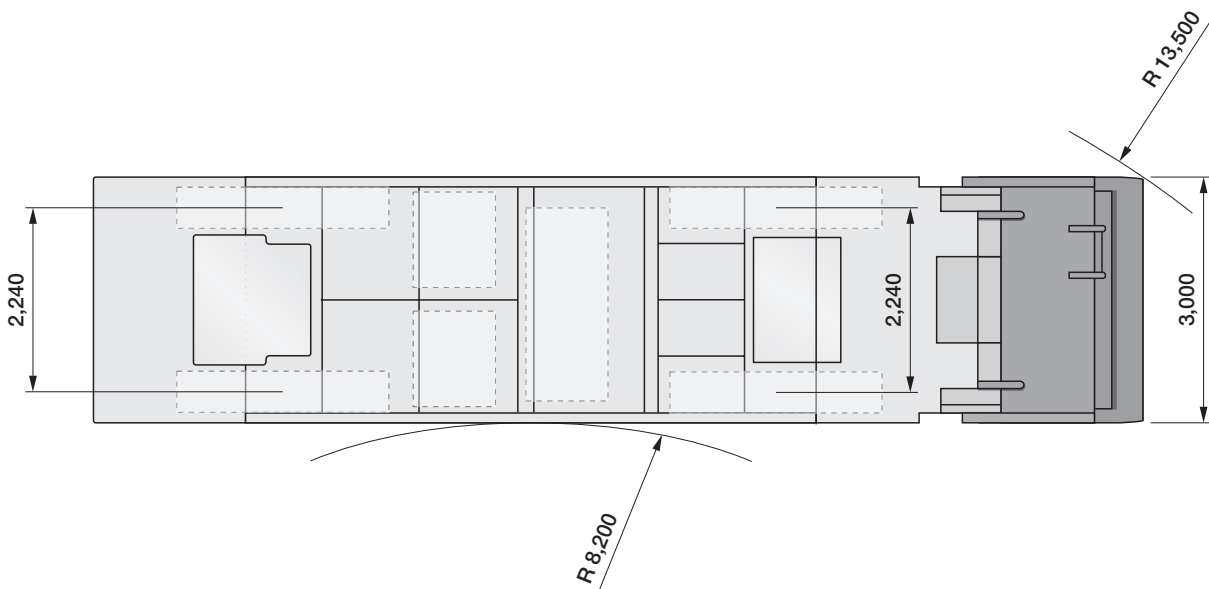
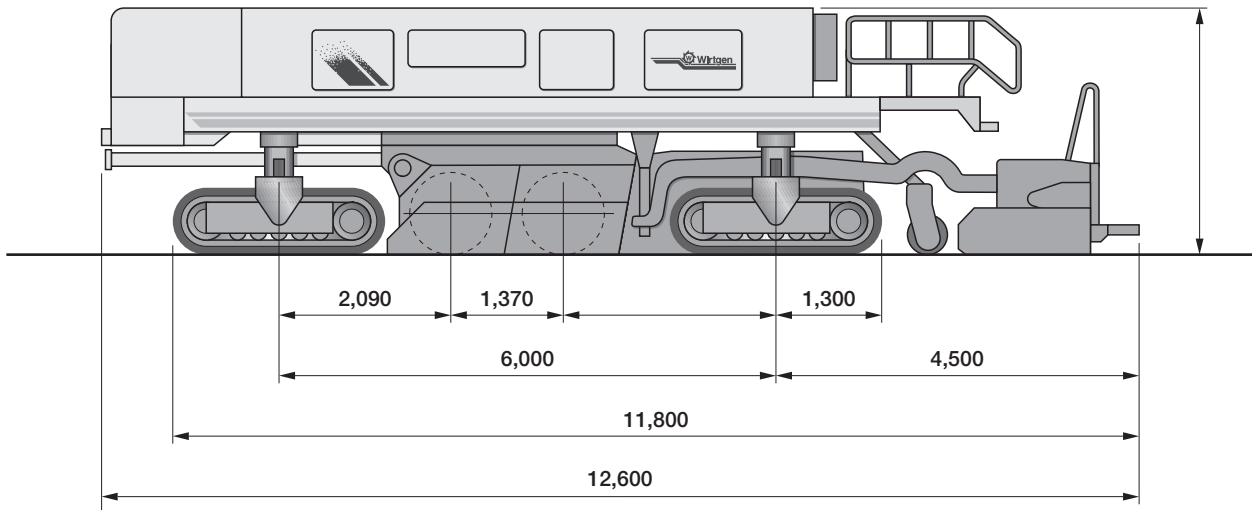


| <b>Cold Recycler WR 4200</b>                       |                            |
|----------------------------------------------------|----------------------------|
| <b>Working width</b>                               | 3,000 – 4,200 mm           |
| <b>Milling width</b>                               | 2,800 – 4,200 mm           |
| <b>Working depth</b>                               | 0 – 200 mm                 |
| <b>Variable milling drums</b>                      |                            |
| Tool spacing                                       | 24 mm                      |
| Number of tools                                    | 90 each                    |
| Drum diameter with tools                           | 1,000 mm                   |
| <b>Fixed milling drum</b>                          |                            |
| Tool spacing                                       | 20 mm                      |
| Number of tools                                    | 150                        |
| Drum diameter with tools                           | 1,000 mm                   |
| <b>Engines</b>                                     |                            |
| Manufacturer                                       | CAT                        |
| Type                                               | 2 x C15 ATAAC              |
| Cooling                                            | Water                      |
| Number of cylinders                                | 2 x 6 (straight)           |
| Output                                             | 2 x (433 kW/580 HP/589 PS) |
| Engine speed                                       | 2,100 min <sup>-1</sup>    |
| Displacement                                       | 15,200 cm <sup>3</sup>     |
| Fuel consumption, full load                        | 2 x 103 l/h                |
| Fuel consumption, <sup>2</sup> / <sub>3</sub> load | 2 x 69 l/h                 |
| Electrical system                                  | 24 V/42 V/380 V            |
| <b>Twin-shaft pugmill mixer</b>                    |                            |
| Dimensions (L x W x H)                             | 3,200 x 2,000 x 1,150 mm   |
| Mixing capacity                                    | 4 m <sup>3</sup> /min      |
| <b>Speeds / Gradeability</b>                       |                            |
| Working speed                                      | 0–16 m/min                 |
| Travel speed                                       | 0–3,6 km/h                 |
| Gradeability in working gear                       | 45%                        |
| Gradeability in travel gear                        | 15%                        |
| Ground clearance                                   | 700 mm                     |
| Crawler track units (L x W x H)                    | 2,550 x 500 x 800 mm       |
| <b>Weights</b>                                     |                            |
| Own weight                                         | 74,500 kg                  |
| Operating weight, CE *1                            | 77,000 kg                  |
| Operating weight, max.                             | 79,500 kg                  |
| <b>Filling capacities</b>                          |                            |
| Fuel tank                                          | 2,070 l                    |
| Hydraulic fluid tank                               | 1,600 l                    |
| Water tank                                         | 2,900 l                    |
| <b>Paving screed</b>                               |                            |
| Type                                               | Vögele AB500 TV            |
| Paving width                                       | 3,000–5,000 mm             |
| Camber adjustment, max.                            | 4 %                        |
| <b>Transport dimensions</b>                        |                            |
| Machine (L x W x H)                                | 12,650 x 3,000 x 3,000 mm  |

\*1 = Weight of machine with half-full water tank, half-full fuel tank, driver (75 kg) and tools.

# Technical description

Dimensions in mm



### **Basic design**

The WR 4200 is a self-propelled cold recycler with hydraulically driven milling drums, powerful twin-shaft pugmill mixer, an electronically controlled system for the addition of binding agents and a high-performance paving unit.

### **Chassis**

Rigid welded construction with mounts for the individual units and attachments.

An optimized arrangement of the individual components, combined with hydraulically opening engine cowlings and the wide opening service flaps ensures good accessibility for maintenance and servicing purposes.

The walkway on the recycler is equipped with hydraulically folding railings on both the left and the right side.

### **Soundproofing**

Noise levels are reduced by the standard soundproofing which protects both the operating personnel and the environment against any nuisance due to noise.

### **Operator's platform and control elements**

The walk-through operator's platform is located at the rear of the machine. The driver's seat and the swivelling control panel can be switched from left to right and vice versa.

The driver's comfortable sitting position, combined with an ergonomically optimized arrangement of the operating controls, prevents fatigue during work and provides a good overview of the machine. Steering and advance speed are governed electronically and work with proportional control. They are operated via joysticks.

A CGC (Cockpit Graphic Centre) display is installed in the operator's platform, enabling monitoring of the machine's operating status. The integrated Wirtgen Information and Diagnosis System informs the machine operator quickly and comprehensively about the current status of both the engines and the hydraulic system, generating visual and audible alarms as and when required. It additionally provides information on, for instance, the number of operating hours, the engine speed or the filling level of the diesel tank.

Pressure gauges are additionally available for monitoring the hydraulic system, providing information on the current pressure in eight different sections of the hydraulic system. The control panel for regulating the metering functions is

located above the recycler's paving screed. It can be swivelled and telescoped to fully meet each operator's personal needs. All process parameters are entered via the CGC, which is integrated in the control panel. Individual control panels for use by ground staff are located within easy reach at various points on the machine. The control panels are equipped with lockable covers to protect the machine against vandalism.

### **Power unit**

The machine is driven by two modern 6-cylinder straight engines with an output of 433 kW/580 HP/589 PS each. The engines comply with the stringent requirements stipulated by the US Environmental Protection Agency (EPA, Tier III) and the EU (Stage III a).

Both engines are equipped with a fully electronic engine management system enabling them to automatically adapt to varying environmental conditions like, for instance, changes in atmospheric pressure, ambient temperature or humidity. The engines offer maximum torque stability even at extremely high engine loads, which prevents breaks in operation.

Extremely large cooling surfaces effectively cool the engines, thus permitting the safe operation of the machine even at high outside temperatures.

The cooling system is additionally equipped with a fan controller. The fan speed is reduced at low ambient temperatures or low loads, thus also reducing noise emission levels and fuel consumption.

### **Power control**

The machine is equipped with an automatic power control system which governs the advance speed in accordance with the load of the diesel engines. The power control can be deactivated to allow manual adjustment of the machine's advance speed.

### **Milling drum assembly**

The milling drum assembly, which consists of three hydraulically driven milling drums, evenly mills and granulates the existing pavement material.

The front milling drums work in down-milling mode and can be continuously adjusted via robust guides to achieve working widths between 2.80 m and 4.20 m.

The rear milling drum is fixed and works in up-milling mode. All adjustments on the front milling drums can also be effected during the milling operation.

The milling drums are equipped with the patented, well-proven quick-change toolholder system HT11. The toolholders' bottom parts are welded onto the drum body. The upper parts, which accommodate the point-attack cutting tools, are secured in the bottom parts by means of retaining bolts, allowing fast replacement.

Special edge segments ensure a clean sharp cut at the edges. Ejectors on the rear drum make sure that the milled material is completely removed from the milling chamber and transported to the pugmill mixer.

### **Cutting tool replacement**

The milling drums are easily accessible for the replacement of cutting tools, which enables the tools to be replaced in a comfortable working posture. The quick-change toolholder system reduces the time required for completing rehabilitation projects to a minimum. An electrically actuated drum turning device facilitates turning of the drum during the replacement of cutting tools.

### **Water spray system**

A hydraulically operated water spray system at the milling drums largely prevents the formation of dust clouds during the milling operation and cools the point-attack cutting tools, thus considerably extending their service life. The spray nozzles are easily removed for cleaning.

### **Crusher bar**

The crusher bar for the rear milling drum, which is available as an option, prevents slabs from breaking out of the asphalt pavement and simultaneously influences the gradation of the milled material.

### **Twin-shaft pugmill mixer**

The twin-shaft pugmill mixer for the production of homogeneous construction material mixes is fitted with robust mixing arms and mixing blades made from highly wear-resistant material.

The mixing vessel is of steel design and has an interior lining of wear plates. The cover of the mixing vessel accommodates the injection bar for foamed bitumen

as well as the injection nozzles for all types of binding agents. The mixer always mixes the entire milled material homogeneously with the binding agents, irrespective of the working width.

It has a mixing capacity of 400 t/h. A failsafe drive via planetary gearbox and high-speed drive motors guarantees high power even when operating at full load.

### **Spreading auger**

The centrally divided spreading auger with scraper blade has continuous hydraulic height adjustment and is fitted with highly wear-resistant, replaceable segments.

The auger speed can be adjusted continuously and independently left and right.

The spreading auger is equipped with an automatic function which ensures that the mixture is spread evenly in front of the paving screed.

### **Paving screed**

The paving screed, which is equipped with a tamping and vibrating unit, can be continuously adjusted hydraulically to working widths ranging from 3.00 m to 5.00 m.

It is used for pre-compaction and for paving the recycled material true to cross-section, line and level.

The entire paving screed can be raised hydraulically for transport purposes.

### **Travel drive units/Height adjustment of the machine**

The travel drive units are suspended to the machine chassis by means of hydraulically height-adjustable cylindrical columns. The milling depth is set via the two front columns while the rear travel drive units act as a full-floating axle.

For manoeuvring and loading purposes, the full-floating axle can be switched from the rear to the front hydraulically.

The lifting columns have a large stroke, which ensures large ground clearance.

### **Travel drive**

The cold recycler is equipped with large crawler track units (B5) which are equipped with polyurethane track pads.

Each crawler track is driven by an own hydraulic motor. The travel drive motors are fed by a common hydraulic variable displacement pump.

The track chains are adjusted to the desired tension hydraulically. The crawler track units are driven automatically so that switching between milling gear and travel gear is not required. The machine's speed can be adjusted continuously from zero to maximum speed.

A switchable differential lock ensures uniform traction of the machine even in difficult conditions.

A previously driven speed can be saved in a cruise control system ("Tempomat") and then re-set, for instance, after a stop.

### **Steering**

The machine has a finger-light hydraulic all-track steering system governed by means of proportional control.

The front and the rear crawler tracks are steered separately via joysticks. The steering function is detached from the height adjustment by means of specially designed steering rings. Tight locking angles permit an extremely small turning clearance circle.

### **Brake system**

Braking is achieved by drag from the self-locking hydrostatic transmission. The recycler is additionally equipped with two automatic parking brakes at the front.

### **Working depth control and automatic levelling system**

The cold recycler is equipped with an electronic automatic levelling system for controlling the working depth.

It is governed by means of proportional control, meaning that changes in the reference plane are compensated quickly and without overshooting of the machine.

The reference planes can be scanned by various methods which include, for instance, ultrasonic sensors on the existing road surface, a grade-line combined with rotary transducing sensors, or a plane formed by lasers.

The machine is additionally equipped with one slope sensor each at the milling drum assembly and at the paving screed.

The Multiplex system can also be integrated into the automatic levelling system as an option. This system equalizes irregularities in the pavement in longitudinal direction.

### **Hydraulic system**

The hydraulic systems for travel drive, milling drum assem-

bly, pugmill mixer, spreading auger, paving screed, cooler fan drives, injection systems for the binding agents, water system and setting functions (cylinders) operate mutually independent.

The hydraulic pumps are driven by the diesel engines via splitter gearboxes.

### **Electrical system**

24 V electrical system with three starters, two 3-phase alternators and four 12 V batteries, including a complete lighting system in Xenon design.

### **Injection systems for binding agents:**

Injection system for water or bitumen emulsion (standard)

This system permits either bitumen emulsion or water to be injected into the recycler's mixing chamber. The eccentric worm pump has a maximum delivery rate of 400 l/min. Metering of the quantities to be added is governed by a microprocessor unit.

### **Injection system for water and bitumen emulsion (optional)**

This system permits water and bitumen emulsion to be injected into the mixing chamber simultaneously by means of two separate injection systems. The two eccentric worm pumps have a maximum delivery rate of 400 l/min each. Metering of the quantities to be added is governed by a common microprocessor-controlled metering unit.

### **Injection system for water and foamed bitumen (optional)**

This system permits previously filtered hot bitumen to be foamed and then injected into the recycler's mixing chamber. Foaming of the hot bitumen is effected in the individual expansion chambers of the injection bar. The electrically heated gear pump for delivering the bitumen has a maximum delivery rate of 500 kg/min.

The eight nozzles of the foamed bitumen injection bar are opened and closed automatically by means of pneumatic cylinders. The open nozzles are cleaned automatically by intermittent operation of the pneumatic cylinders.

The second, additional injection system with separate injection nozzle permits the addition of the required quantity of water for achieving the optimum moisture content of the mix to be recycled.

The integrated eccentric pump draws the water directly from the tanker truck. It is also possible to draw water from the machine's integrated water tank.

The eccentric worm pump has a maximum delivery rate of 400 l/min. Metering of the quantities to be added is governed by a common microprocessor unit.

Alternatively, a cement-water slurry drawn from the Wirtgen slurry mixer WM 1000 can also be injected via the injection nozzle of the water system.

## **Injection system for water, bitumen emulsion and foamed bitumen (optional)**

### **FOAMED BITUMEN SYSTEM:**

This system permits previously filtered hot bitumen to be foamed and then injected into the recycler's mixing chamber. Foaming of the hot bitumen is effected in the individual expansion chambers of the injection bar.

The electrically heated gear pump for delivering the bitumen has a maximum delivery rate of 500 kg/min.

The eight nozzles of the foamed bitumen injection bar are opened and closed automatically by means of pneumatic cylinders.

The open nozzles are cleaned automatically by intermittent operation of the pneumatic cylinders. The system is equipped with a test nozzle for checking the quality of the foamed bitumen during the recycling operation.

### **BITUMEN EMULSION SYSTEM:**

Bitumen emulsion can be injected into the mixing chamber instead of foamed bitumen via an additional injection system with separate injection nozzle. The system has a maximum delivery rate of 400 l/min.

### **WATER SYSTEM:**

The third injection system with separate injection nozzle permits the addition of the required quantity of water for achieving the optimum moisture content of the mix to be recycled. The integrated eccentric pump draws the water directly from the tanker truck.

It is also possible to draw water from the machine's integrated water tank. The eccentric worm pump has a maximum delivery rate of 400 l/min. Metering of the quantities to be added is governed by a common microprocessor unit.

Alternatively, a cement-water slurry drawn from the Wirtgen slurry mixer WM 1000 can also be injected via the injection nozzle of the water system.

### **Filling**

Water and diesel are filled via large filling ports.

### **Safety during transport**

The machine can be securely lashed onto a low-bed trailer or loaded by crane with the aid of sturdy lashing lugs.



| Equipment                                                                    | Cold Recycler WR 4200 |
|------------------------------------------------------------------------------|-----------------------|
| <b>Frame/Operator's platform</b>                                             |                       |
| Swivelling control panel in operator's platform                              | ○                     |
| Swivelling/telescoping metering panel                                        | ○                     |
| Hydraulically folding railings                                               | ○                     |
| Special painting                                                             | ●                     |
| <b>Travel drive</b>                                                          |                       |
| 4-track steering                                                             | ○                     |
| Hydraulically controlled tensioning of track chains                          | ○                     |
| <b>Machine control/Levelling</b>                                             |                       |
| Automatic levelling system at drum assembly with ultrasonic sensor           | ○                     |
| Slope sensor at drum assembly for controlling the cross slope                | ○                     |
| Automatic levelling system at paving screed, one side                        | ●                     |
| Automatic levelling system at paving screed, both sides                      | ●                     |
| Slope sensor at paving screed for controlling the cross slope                | ○                     |
| Multiplex system                                                             | ●                     |
| WIDIS 32                                                                     | ○                     |
| CGC metering panel                                                           | ○                     |
| <b>Milling drum</b>                                                          |                       |
| Quick-change toolholder system HT11                                          | ○                     |
| Crusher bar                                                                  | ●                     |
| Pneumatic cutting tool extractor                                             | ●                     |
| Electrically actuated drum turning device (for replacement of cutting tools) | ○                     |
| <b>Injection systems for binding agents</b>                                  |                       |
| Injection system for water or bitumen emulsion                               | ●                     |
| Injection system for water and bitumen emulsion                              | ●                     |
| Injection system for foamed bitumen and water                                | ●                     |
| Injection system for foamed bitumen, bitumen emulsion and water              | ●                     |
| Hose connection to bitumen tanker truck                                      | ●                     |
| Hose connection to WM 1000                                                   | ●                     |
| <b>Miscellaneous</b>                                                         |                       |
| Soundproofing                                                                | ○                     |
| Cyclonic air filter                                                          | ○                     |
| Working lights Xenon (detachable)                                            | ○                     |
| Warning lights                                                               | ○                     |
| Horn and reversing horn                                                      | ○                     |
| Towing device                                                                | ○                     |
| Loading and lashing lugs                                                     | ○                     |
| Comprehensive tool kit                                                       | ○                     |
| Comprehensive safety package with emergency stop buttons                     | ○                     |
| Compressed air system                                                        | ○                     |
| High pressure water wash down                                                | ●                     |

○ Standard ● Optional







Wirtgen GmbH  
Reinhard-Wirtgen-Strasse 2 · 53578 Windhagen · Germany  
Phone: +49 (0) 26 45/131-0 · Fax: +49 (0) 26 45/131-242  
Internet: [www.wirtgen.com](http://www.wirtgen.com) · E-Mail: [info@wirtgen.com](mailto:info@wirtgen.com)