



High performance in compact design

Cold Milling Machine W 220



Unrivalled milling technology



Extensive milling operations completed in no time

/// The Wirtgen W 220 large milling machine combines high milling performance and acceptable machine weight into a perfect whole. Our compact power package is not only ideally suited to comply with legal provisions regarding the maximum total weight of oversize transports but also fully meets the high performance requirements of milling contractors. In addition to simple, tried-and-tested

engine technology, the W 220 draws on innovative technologies to secure a competitive edge also on really big milling sites: the WIDRIVE machine management system, which greatly improves operator comfort, electronic ISC travel drive control, the PTS system, which is short for „parallel to surface“, and a choice of three different milling drum speeds make this task an easy venture.



◀ The W 220 large milling machine offers great ease of operation

▼ “The W 220 completes large milling areas quickly and easily.”

Technologies suited to meet the big challenges



▶ **High milling performance**

Milling performance of 900 tonnes per hour or more.

▶ **Ease of transport**

Compact machine dimensions and optimal machine weight.

▶ **WIDRIVE**

Intelligent milling machine management for low operating costs.

▶ **PTS**

Automatic alignment parallel to the pavement surface.

▶ **FCS Light / Two working widths**

FCS Light for quick milling drum replacement / Working widths of 2.20 m and 2.50 m.

Unrivalled milling performance

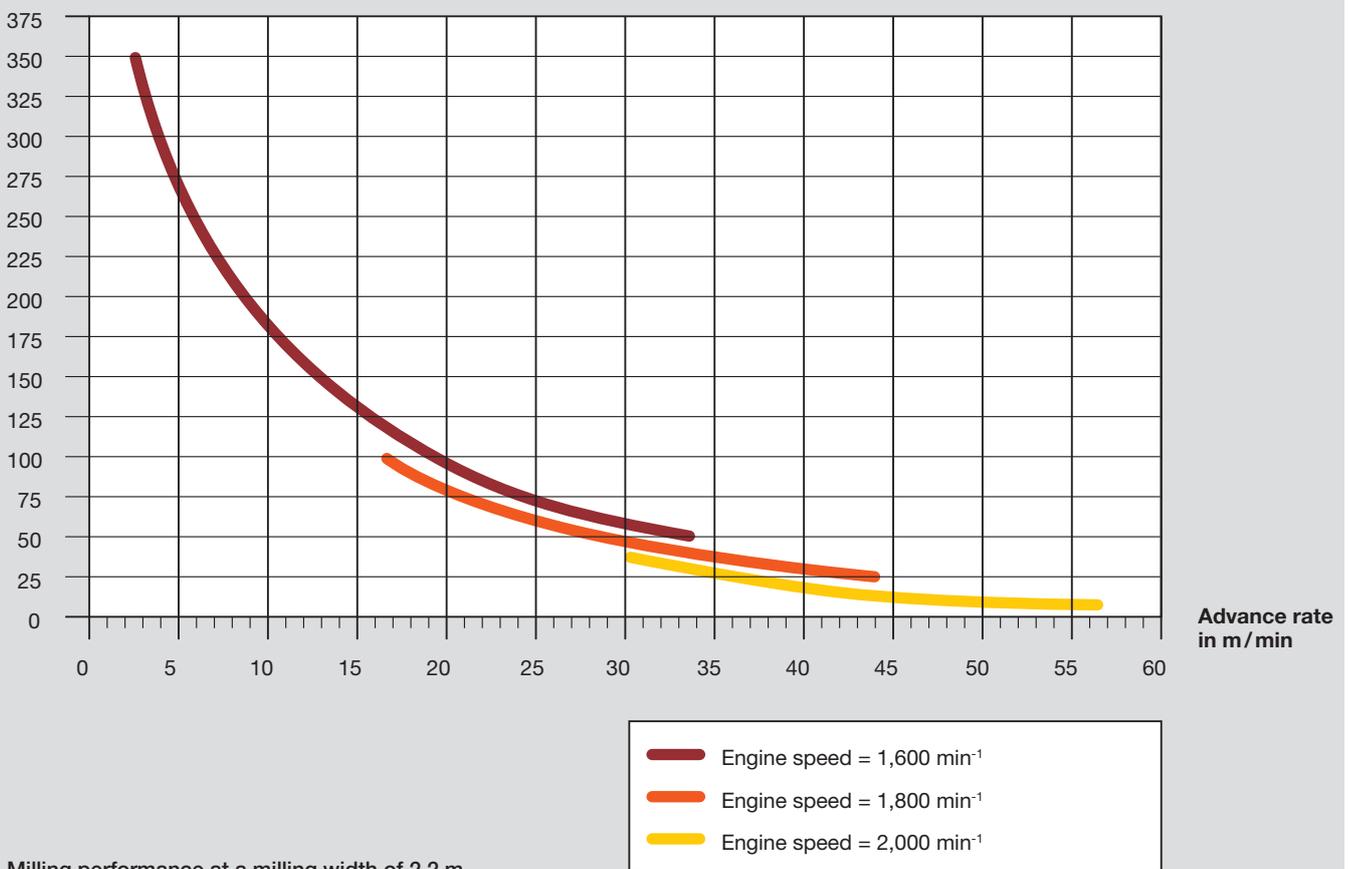


Feeling at home on the really big job sites

/// Reliable performance is a major strength of the W 220 cold milling machine. Whether the job specifies milling off 4 cm thick asphalt surface courses on motorways on a large scale or the complete removal of 30 cm thick concrete pavements at full depth – one thing is certain: the W 220 puts up a compelling performance

thanks to its strong diesel engine, optimal traction and powerful material loading. High daily production rates are the profitable result, while innovative features such as the intelligent WIDRIVE machine management system and a choice of three different milling drum speeds additionally cut operating costs.

Milling depth in mm



- Its tremendous engine power makes the W 220 the ideal candidate for milling off asphalt pavements at depths of up to 350 mm or concrete pavements at high advance rates.
- In addition to the highly economical milling of individual layers, complete road pavements can also be removed in a single machine pass.

- Optimum organization of trucks enables the W 220 to remove up to 900 tonnes per hour of asphalt.
- The high-performance W 220 is the ideal choice also for large-scale projects that need to be completed on schedule under tremendous deadline pressure.

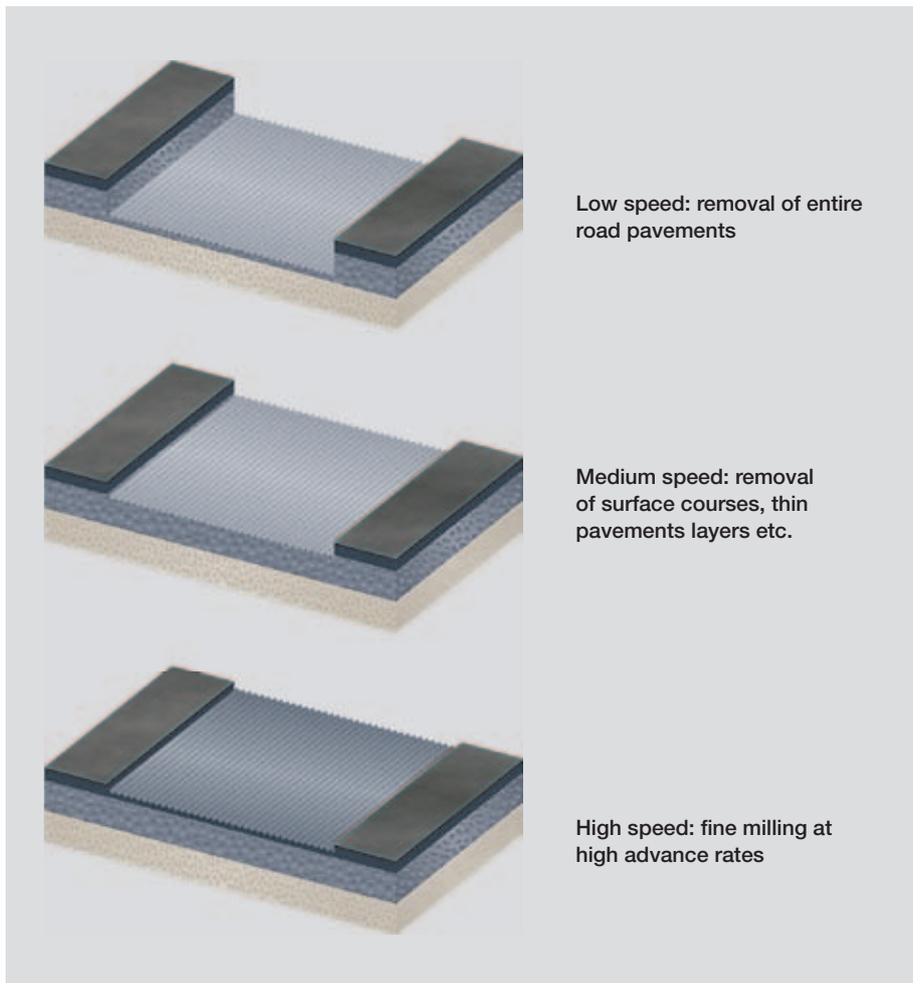
Cut costs – boost profit



Three different milling drum speed options

/// To cut operating costs even further, the W 220 comes with an innovative highlight as part of its standard range of features: adjustment of the milling drum speed from the operator's platform. This guarantees optimal milling performance levels regardless of requirements and across a wide range of applications. When carrying out standard milling jobs, such as milling off a surface course,

the W 220 usually runs at the medium milling drum speed. High speed is selected for the large-scale milling of thin pavement layers. Low speed is the right choice if maximum milling performance levels are to be achieved at the lowest possible cost: it guarantees reduced fuel consumption rates and low cutting tool wear.



Maximum performance – whatever the job



Manual adjustment of the milling drum speed ▲

◀ Specific milling jobs require different milling drum speeds

- ▶ A selector switch on the operator's platform enables the engine or milling drum to be set to three different speed levels even during the milling operation.
- ▶ Medium milling drum speed ensures a favourable particle size of the milled material and should be selected for surface course milling jobs.
- ▶ Low milling drum speed is recommended if high milling performance levels are required at low milling costs, for instance, when removing complete pavements at full depth.
- ▶ High milling drum speed at high advance rates ensures an excellent surface texture in fine milling jobs.

Ease of operation



A small number of buttons and switches on the movable main control panels facilitate machine control ▲

Safe and suitable for transport: lockable control covers ▼



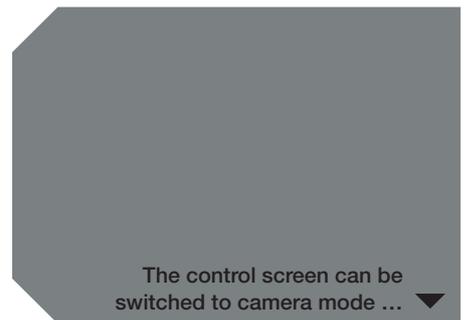
Small number of controls for easy handling

/// The W 220 is a hard worker, yet intuitively controlled with a few simple flicks of the wrist. The two identical, clearly structured main control panels allow operation of the machine from the left or right side. Language-neutral symbols and ergonomically designed controls arranged within easy reach promote productive working. The multi-functional control screen clearly displays operation

parameters and maintenance details: user-friendly diagnostic tools with clear graphics enable quick comprehension of diagnostic procedures. Operation is assisted further by displaying additional information, such as the continuous logging of events, milling performance, truck loading counter or consumption indicator.



Always fully informed of the work process



The control screen can be switched to camera mode ... ▼

▲ The multifunctional colour control screen enables monitoring of the entire machine

... to provide a direct view of important work processes ▶



▮ Two or six high-resolution colour cameras can be installed on the machine in accordance with customer specifications.

▮ When using six cameras, an additional camera screen is installed to allow the simultaneous display of two different camera views.

▮ Optional installation of an intelligent data converter enables defined machine parameters, coded as per the standardized WIFMS norm, to be read out from the machine's control system.

Perfect visibility and unmatched operator comfort



◀ Perfect view of the milling edge thanks to the slender “wasp waist” design

Ergonomic working in upright or seated position, on the left or right side ▼



Relaxed operator – high performance guaranteed

/// The productivity of the W 220 increases in proportion to the operator being able to focus on his job. This is why we have made every effort to create a workplace in which the operator feels comfortable and can work in an ergonomic body posture for many hours. A major aspect in this regard is the slender “wasp waist” design which enables an unobstructed view, on both sides, of the milling edge, respective front crawler track and side plate.

The operator enjoys ample legroom on the walk-through platform in both standing and seated position. In both working positions, he has an excellent view of the controls and everything that is happening on the construction site. Last but not least, the two main control panels and both driver’s seats can be adjusted to fully meet the machine operator’s personal requirements.

Ample room, lots of ergonomic features



◀ Negotiating obstacles by moving the protective canopy

▼ Full visibility and ample space on the operator's platform



▣ The flexible canopy protects from exposure to rain, wind or sun – and can be moved to the left or right in a few simple steps.

▣ Comfort seats, the fully vibration-isolated operator's platform and a hot-air blower provide comfortable working conditions.

▣ Numerous features, such as raising and lowering the scraper blade, can be controlled by ground personnel via separate control panels.

▣ The operator's platform is accessed conveniently via access ladders fitted on both sides.

LEVEL PRO – high-precision levelling the easy way



Ground personnel can enter adjusted parameters in LEVEL PRO right away ▲

Displacement sensors in the hydraulic cylinder accurately capture the milling depth ▼

▲ The LEVEL PRO panel is located within easy reach and in the operator's immediate field of view

Electronic slope sensor for the milling of predefined cross slopes ►



The automatic levelling system from Wirtgen guarantees perfect milling results

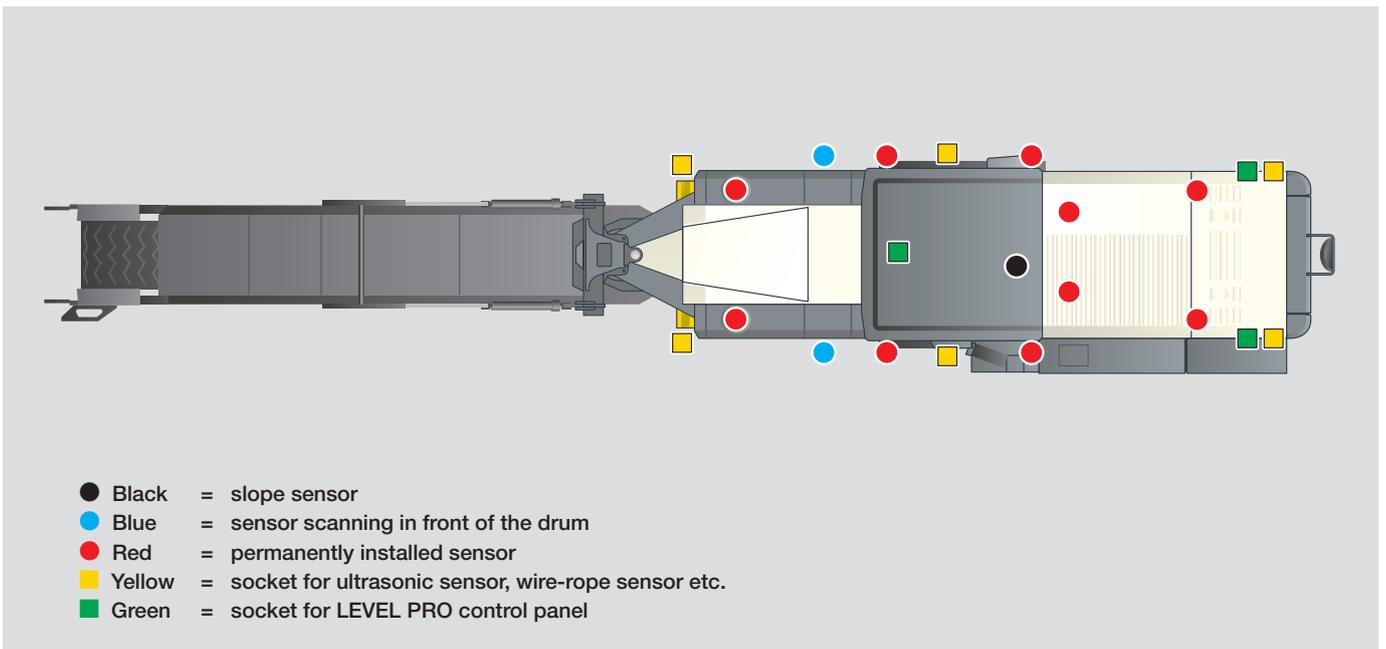
/// The LEVEL PRO levelling system, which has been specifically designed for milling applications, guarantees precise, automatic control of both milling depth and cross slope – while keeping handling consistently simple. The LEVEL PRO screen is arranged in the operator's immediate field of view and is operated conveniently using just one finger. Its clearly structured, intuitive design

significantly increases operator comfort. Hallmarks of the LEVEL PRO system include large, self-explanatory function keys, sensors which can be selected individually during the milling operation, convenient memory functions, two control loops, and up to three different sensor values displayed on the screen.



◀ Hydraulic milling depth sensors capture the level in front of the milling drum

Multiplex system: two ultrasonic sensors plus one sensor mounted at the side plate detect the milling depth ▶



- ▶ A great variety of sensors can be integrated into the automatic levelling system, such as hydraulic milling depth, cross slope and ultrasonic sensors.
- ▶ LEVEL PRO can be easily extended, for instance, by the multiplex system, laser levelling, or 3D levelling which uses the interface included in the system.

- ▶ The multiplex system analyses the output of three sensors on each side of the machine, which is very useful to ensure perfectly level surfaces.
- ▶ The actual milling depth is detected via sensors and is then displayed on the LEVEL PRO screen.

WIDRIVE – technology designed with people in mind



The assistance system automates many processes

Controlling and coordinating a cold milling machine often requires the operator to perform many different steps at the same time. WIDRIVE significantly reduces the number of these steps, however, dispensing with a multitude of manual switching operations. For WIDRIVE centrally manages all interactions between the machine's key components: diesel engine, travel, milling drum and conveyor drives, water spray system, PTS system and

LEVEL PRO levelling system. Relieved of much of his previous workload, the operator can fully focus on what really matters – ensuring that the milling job conforms to highest quality standards. Bottom line results include significantly reduced diesel consumption rates, faster processes, reduced water demand, low engine noise levels and increased daily production rates.

WIDRIVE features:



Engine station

- Automatic speed adjustment in accordance with the milling process to lower diesel fuel consumption



Milling drum assembly

- Automatic raising of side plates, gradation control beam and scraper in transport mode



Loading of milled material

- Consistently high belt speed in case of engine lugging
- Belt is switched off automatically during reversing and in transport mode



Height adjustment

- Fourfold full-floating axle
- LEVEL PRO levelling system
- PTS (Parallel To Surface)



Traction drive

- ISC (Intelligent Speed Control) offers optimized machine advance rate, traction control and adjustment of the track speed in bends



Water system

- Switches on and off automatically
- Water feed adjustment depending on engine load

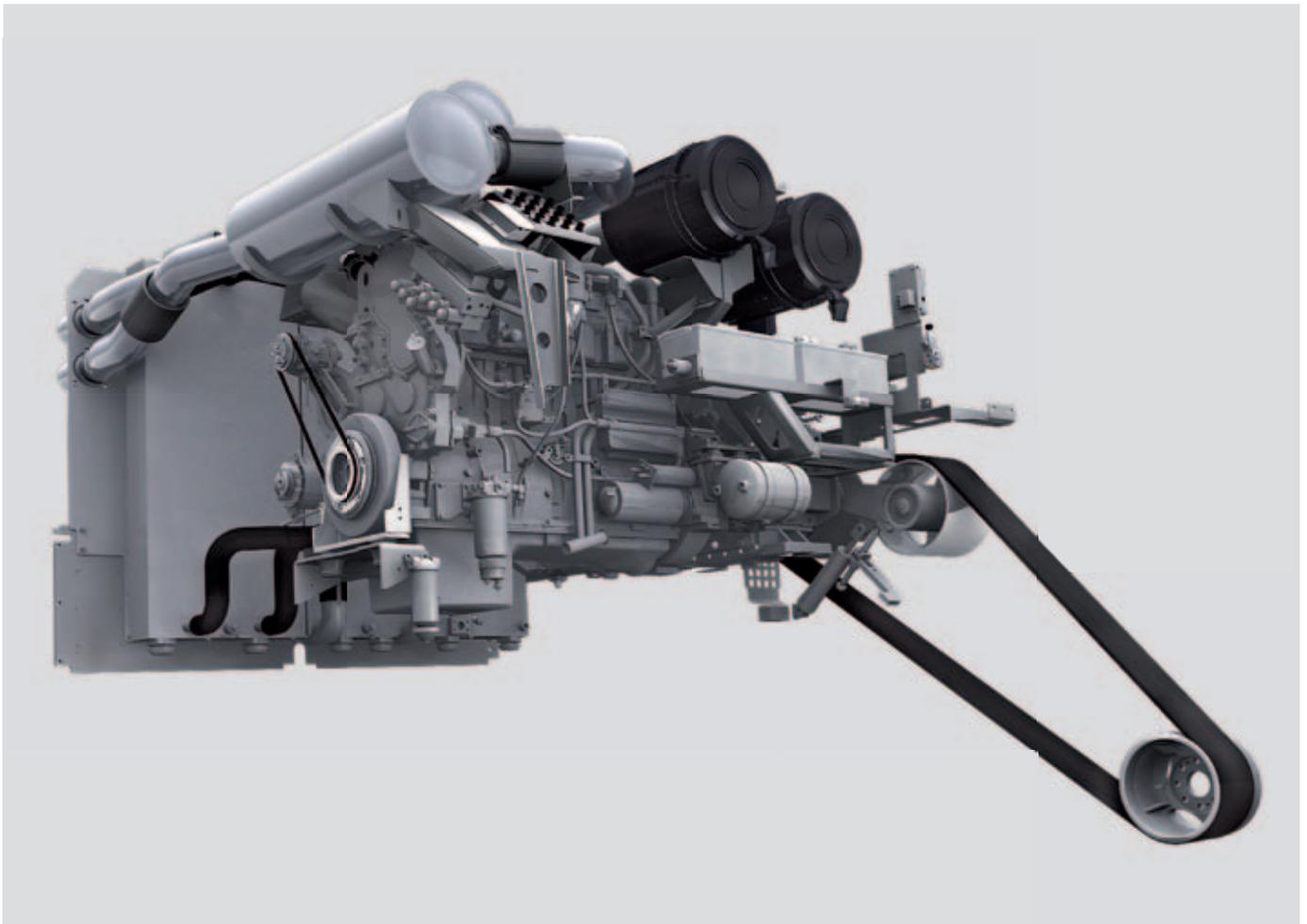
➤ The WIDRIVE machine management system automatically controls engine and conveyor speeds or activates the ISC mode as required.

➤ The machine's advance speed can be governed automatically in proportion to the degree of engine lugging, thus enabling the engine to run in the optimal load range.

➤ Water consumption is reduced by switching the water system on or off automatically and adjusting the spray pressure to the milling output.

➤ WIDRIVE also lowers the environmental impact by further reducing exhaust gas emissions and noise levels of the diesel engine, which has been designed with low fuel consumption in mind anyway.

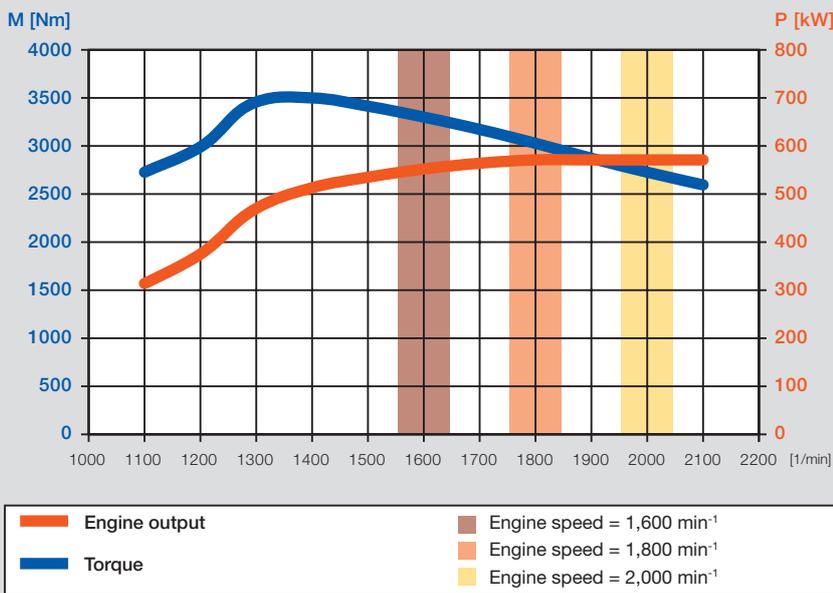
Ultra-strong engine



Low in fuel consumption

// The W 220 offers impressive engine power and performance. When the large-displacement, 6-cylinder diesel engine flexes its muscles, extensive areas can be milled off at full depth and high machine advance rates. In addition, the fully electronic WIDRIVE machine management system optimizes fuel consumption as the economi-

cal engine always works in the optimal performance and torque ranges. It goes without saying that the anti-vibration mounted diesel engine also meets the requirements of environmental compatibility: it is fully enclosed in a sound-proof engine compartment.



Achieving consistently high milling outputs even under full load



▲ Ideal characteristic curve of torque M and engine output P



▲ Powerful diesel engine for demanding milling applications

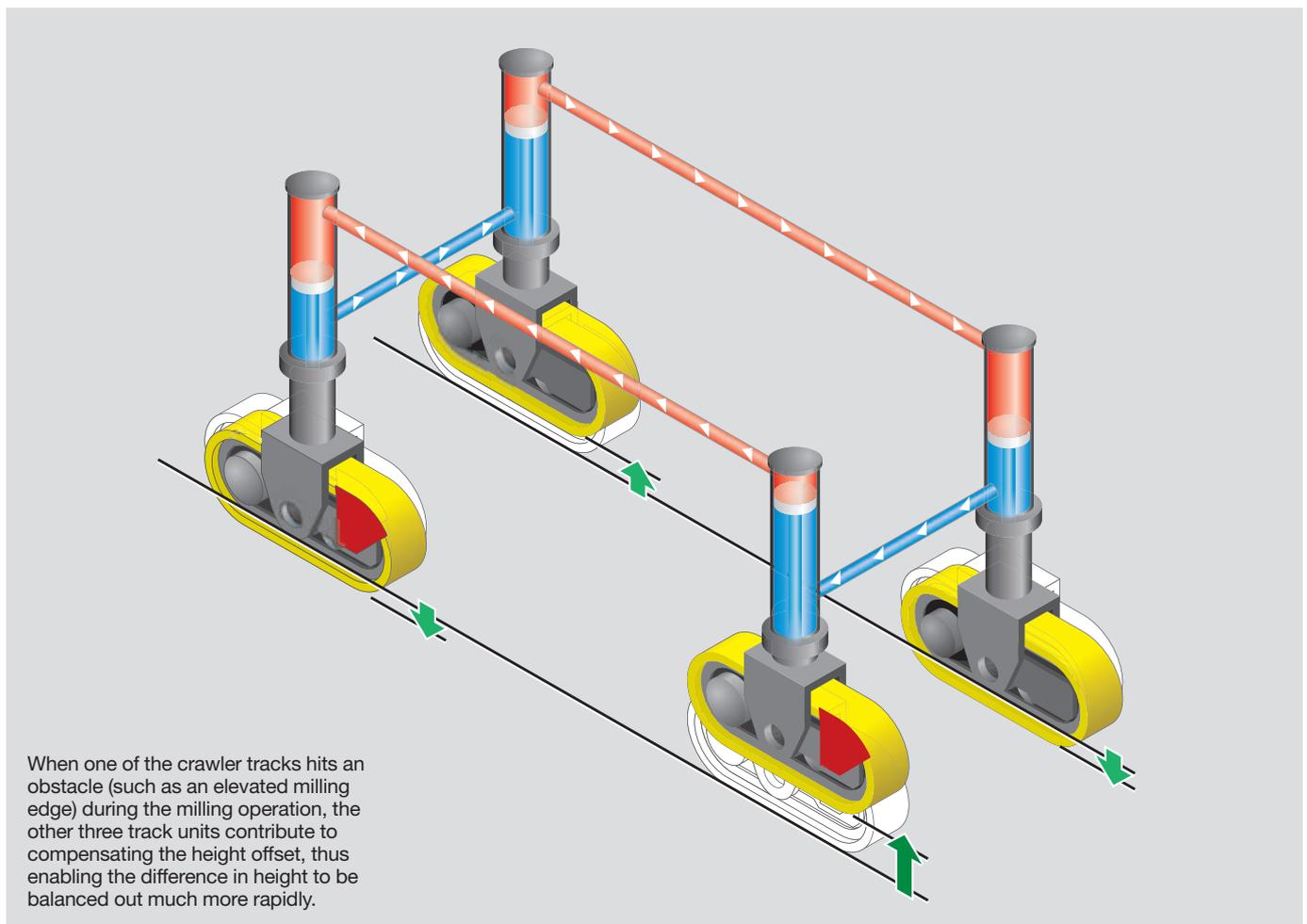
◀ Highly efficient mechanical milling drum drive

▣ The machine operator is protected from vibration as the engine station is held in place and isolated from vibration by silent blocks.

▣ A hydraulic cylinder maintains constant tension of the multiple V-belts.

▣ The mechanical milling drum drive pays for itself through reduced fuel consumption rates, high wear resistance and ease of maintenance.

PTS – always parallel to the road surface



High machine stability for increased milling efficiency

// The innovative PTS system – PTS being short for parallel to surface – aligns the W 220 parallel to the pavement surface automatically to ensure perfect milling results. The W 220 frequently needs to overcome significant differences in height when moving into or out of the milled cut or when one of the crawler tracks left or right travels over uneven ground. The integrated fourfold

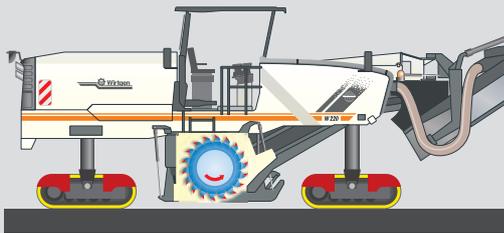
full-floating axle balances out all four track units quickly and reliably without the need for manual corrections, in this way reducing the machine's longitudinal and transverse inclination to a minimum. This lends a high degree of stability to the large milling machine while ensuring perfect levelling quality and giving the operator a pleasant driving experience at the same time.

The W 220 always retains its parallel alignment ▶

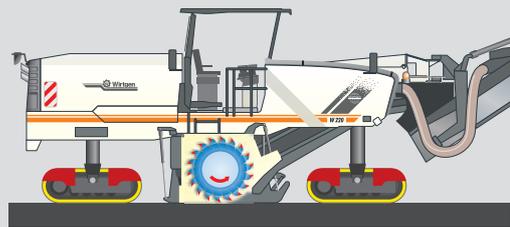
▼ The front and rear track systems are lowered quickly to the set milling depth



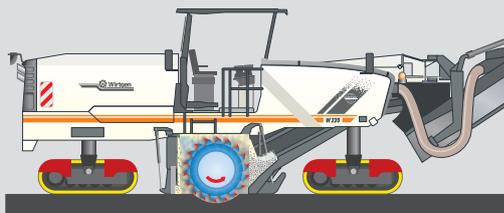
Automatic start of the milling operation



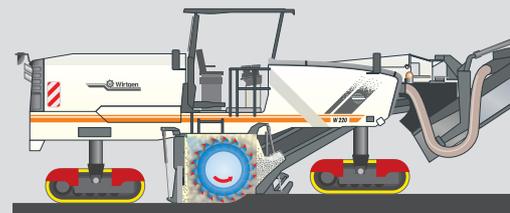
1. W 220 in transport position



2. W 220 is lowered quickly while retaining its parallel alignment



3. W 220 is lowered slowly while retaining its parallel alignment



4. W 220 working in standard milling mode

- ▶ The PTS system additionally comprises a supporting automatic function for lowering the milling drum to the set milling depth to initiate the milling process while retaining the machine's parallel alignment.
- ▶ When the automatic levelling system is engaged, the chassis and rotating milling drum are lowered automatically at maximum speed.

- ▶ Once the side plates reach the ground, the lifting columns continue lowering in slow mode; the lowering rate is adjusted further in the milling cut if required.
- ▶ No time is wasted on complex manual lowering operations, and excessive tool wear or even failure at the beginning of the milling process is prevented.

ISC – the intelligent travel drive system



Traction control, power control, precise manoeuvring in bends

High engine power is not the only factor enabling the machine to make swift headway on the construction site. Maximum traction and excellent manoeuvrability are just as important. The ISC system – ISC being short for Intelligent Speed Control – enables the W 220 to put up an outstanding performance in this regard. Electronic traction control, which is a part of the ISC system, prevents the slip of individual track units in case of insufficient grip

while ensuring maximum traction of all four crawler tracks at the same time. In addition, ISC automatically adjusts the machine's advance speed to the engine load in order to always achieve maximum milling performance. ISC also governs the cornering speed of the outer crawler track units electronically to maintain maximum traction and minimize track pad wear.



◀ Large steering angles of the four track units enable amazingly small turning circles

▼ Crab steering enables the W 220 to easily approach existing milled cuts

Big machine –
small turning radius



- ▶ For perfect milling results, the steering angles of the front and rear axles are coordinated, and the rear axle is tracked automatically.
- ▶ Hydraulic all-track steering, independently selectable steering modes and large track steering angles ensure excellent driving properties.

- ▶ The high-lift, separately height-adjustable track units provide ample ground clearance.
- ▶ The machine's advance rate can be continuously adjusted from zero to maximum speed in both milling and travel gear.

Wirtgen milling drums – the key to success



Intelligent features right down to the smallest detail

// The core element of all Wirtgen cold milling machines is the milling drum, which is fitted with toolholders and point-attack cutting tools. The intelligent, application-specific positioning of the toolholders, which are arranged on the milling drum in a helical pattern, ensures excellent milling performance, a highly precise milling texture and low-vibration operation of the machine. Exclusive hallmarks of our expertise in the manufacture of milling drums include

many years of know-how, state-of-the-art production equipment, the use of high-quality, wear-resistant materials as well as the largest range of milling drums on offer worldwide. The hard-wearing HT11 quick-change toolholder system is a special highlight, its distinctive hallmarks including long life, optimum tool rotation and simple tool replacement.



◀ Wirtgen milling drums contribute to significant time and cost savings on the construction site

▼ Quick replacement of cutting tools, drum turning device, ejectors suitable for multiple use

Core competency in cutting technology

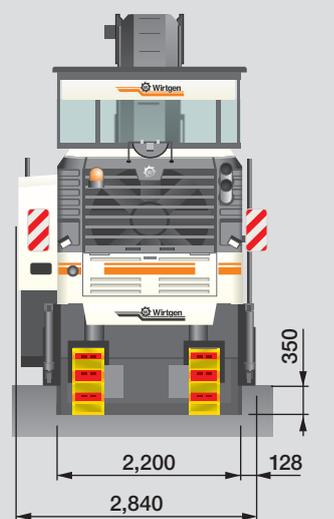


- ▶ Cutting tool replacement is facilitated by the hydraulic drum turning device as it enables the milling drum to be moved into the ideal position with no effort at all.
- ▶ As many as two hydraulic tool extractors can be operated with only little effort and with the diesel engine switched off.

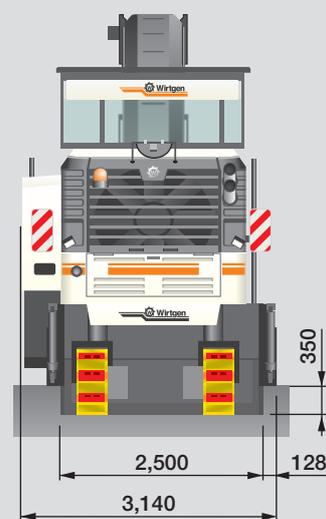
- ▶ Two water spray bars ensure optimal tool cooling, the water pressure being adjusted in accordance with the machine's performance and the amount of water being continuously variable.
- ▶ Ejectors made of highly wear-resistant steel can be turned about 180° and thus be used twice.

Milling drum assemblies – 2.2 m and 2.5 m wide

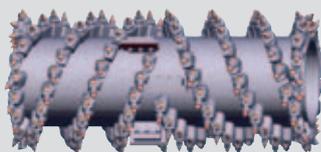
Dimensions in mm:



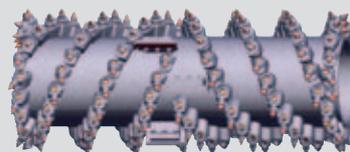
W 220 with 2.2-m drum assembly



W 220 with 2.5-m drum assembly



Standard milling drum
Milling width: 2,200 mm
Milling depth: 0 to 350 mm
Tool spacing: 15 mm



Standard milling drum
Milling width: 2,500 mm
Milling depth: 0 to 350 mm
Tool spacing: 15 mm

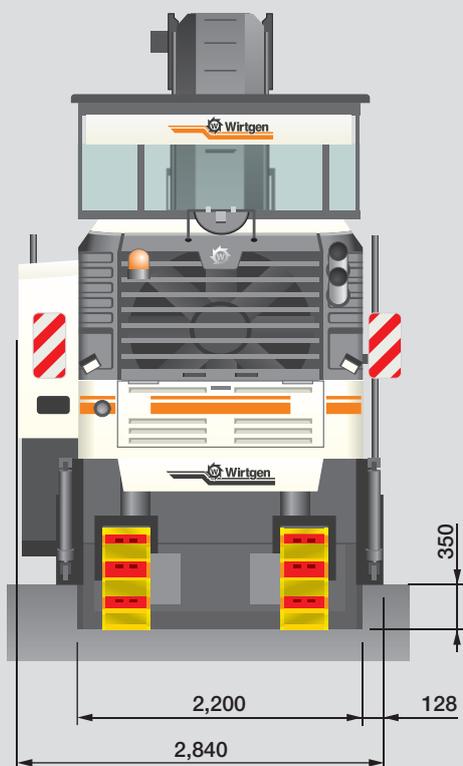
FCS Light offers a broad range of applications

/// The W 220 large milling machine comes with a 2.2-m milling drum assembly in the standard package, with a 2.5-m wide assembly being available as an equipment option. The 2.2-m wide milling drum assembly is suitable for FCS Light, which enables milling drums of equal width but with different tool spacings to be changed with only little effort. FCS Light enables a wide array of applications

to be carried out with a single cold milling machine, which include milling off surface courses, levelling irregularities, preparing surfaces for the application of a thin pavement layer or removing coatings from asphalt or concrete surfaces, to name just a few. Optimal utilization of the machine is thus ensured, making it even more economically efficient.

2.2-m milling drum assembly in FCS Light design

Dimensions in mm:

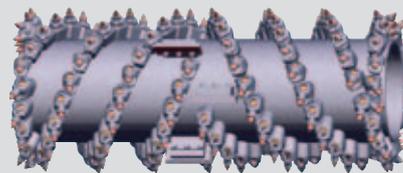


W 220 with 2.2-m drum assembly



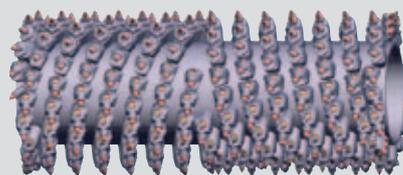
ECO cutter

Milling width: 2,200 mm
Milling depth: 0 to 350 mm
Tool spacing: 25 mm



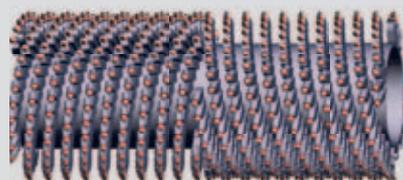
Standard milling drum

Milling width: 2,200 mm
Milling depth: 0 to 350 mm
Tool spacing: 15 mm



Fine milling drum

Milling width: 2,200 mm
Milling depth: 0 to 100 mm
Tool spacing: 8 mm



Micro-fine milling drum

Milling width: 2,200 mm
Milling depth: 0 to 30 mm
Tool spacing: 6 x 2 mm

- ▮ ECO cutters fitted with a reduced number of point-attack cutting tools ensure maximum area performance.
- ▮ Standard milling drums are ideally suited to the removal of one or more pavement layers, ensuring a good interlock between the milled surface and the new pavement.
- ▮ Fine milling drums create finely textured surfaces ideally suited as a base for the application of thin pavement layers.
- ▮ Micro-fine milling drums can be used to roughen road pavements and to improve their evenness and skid resistance.

Intelligent features of the milling drum housing score top marks



◀ The gradation control beam is hydraulically height-adjustable ...

▼ ... and protects the primary conveyor from premature wear



▲ The scraper blade is locked at the required height to allow partial loading



Mature technology

/// The milling drum assembly of the W 220 offers a wealth of useful solutions. To prevent any collisions during manoeuvring, the gradation control beam, scraper blade and side plates are raised automatically together with the lifting columns when in transport mode. If part of the milled material is to remain in the milled cut, the

machine operator can raise the scraper blade hydraulically and lock it at the required height. In addition, the scraper blade can be swung wide open hydraulically to provide access to the milling drum for the replacement of cutting tools. The scraper blade and the two protective side plates provide effective closure of the milling chamber.

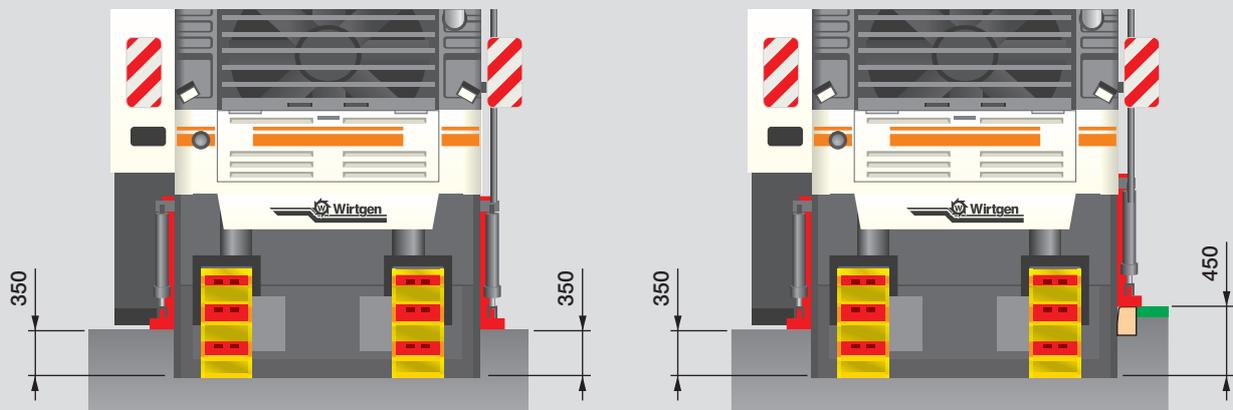
The left side plate can be raised by 350 mm, the right one by as much as 450 mm

Accurate milling along kerbs is possible on the right side even at maximum milling depth



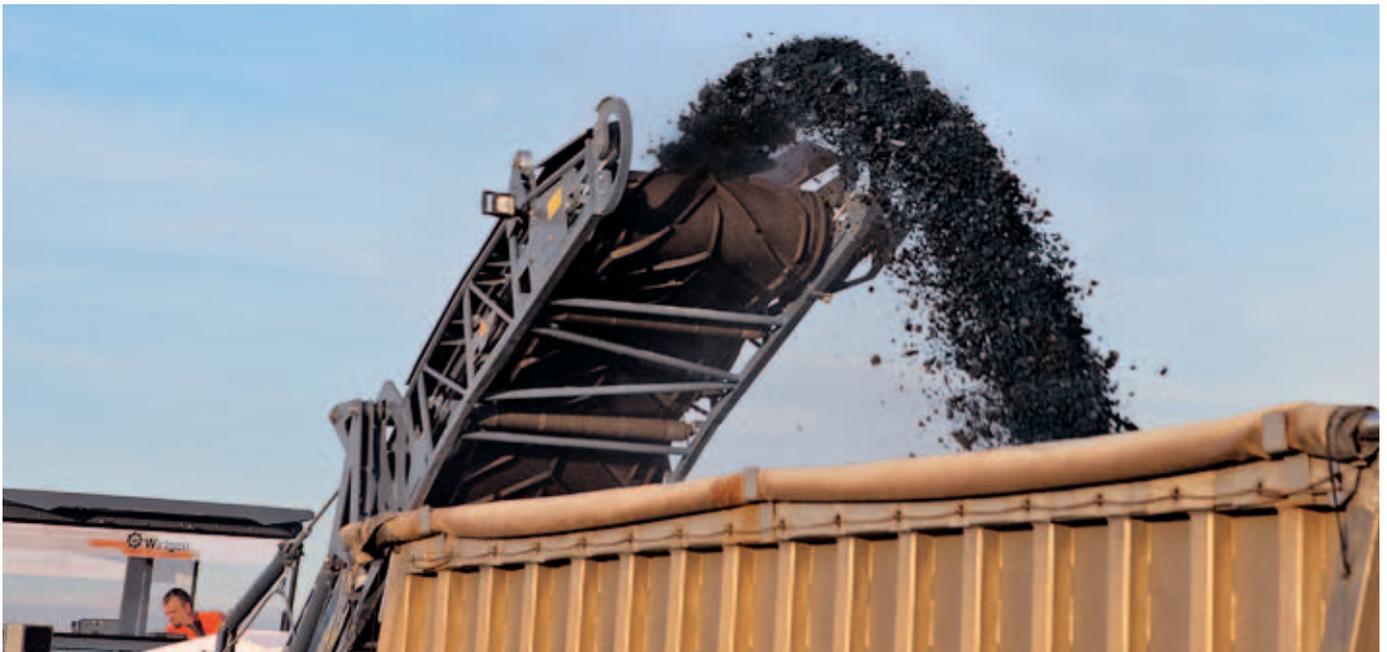
Milling flush to kerb right down to the full working depth

Dimensions in mm:



- The side plates left and right can be raised hydraulically at the push of a button to enable flush-to-kerb milling also along road fixtures.
- Practical detail: the side plate on the right can be raised by as much as 450 mm.
- Accurate milling flush to kerb is thus also ensured at great working depths, enabling the side plate to move over the kerb for the purpose of level detection.
- The hydraulically height-adjustable gradation control beam protects the belt from damage and prevents the asphalt pavement from breaking into big slabs.

High conveying capacity for huge amounts of milled material



▲ The generously dimensioned loading conveyor fills large dump trucks in no time at all

Wide conveyor slewing angles of 60° to either side master any difficult loading situation ▶



Perfect solution for material transport

/// As the W 220 has been designed for the removal of large amounts of material, an effective material loading system is a must: the discharge conveyor can be slewed to either side, thus enabling powerful loading also when the machine is working in bends or crossroad areas or to ensure that trucks can change “on the fly”. In addition, the loading height can be adjusted to the

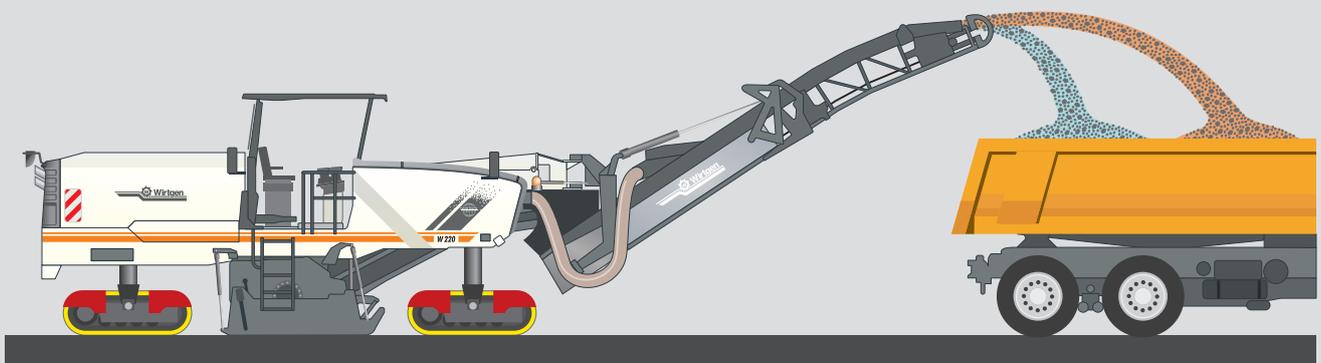
specific working situation. Continuously adjustable speed of the wide, steep-incline conveyor belt enables even large, five-axle semi-trailers to be loaded quickly and to full capacity. At the end of the day, the tremendous conveying capacity and variable adjustment options of the discharge conveyor guarantee high daily production rates irrespective of site conditions.



◀ Especially suitable for night work: the stoplight system gives silent “Stop” and “Go” instructions to the truck driver

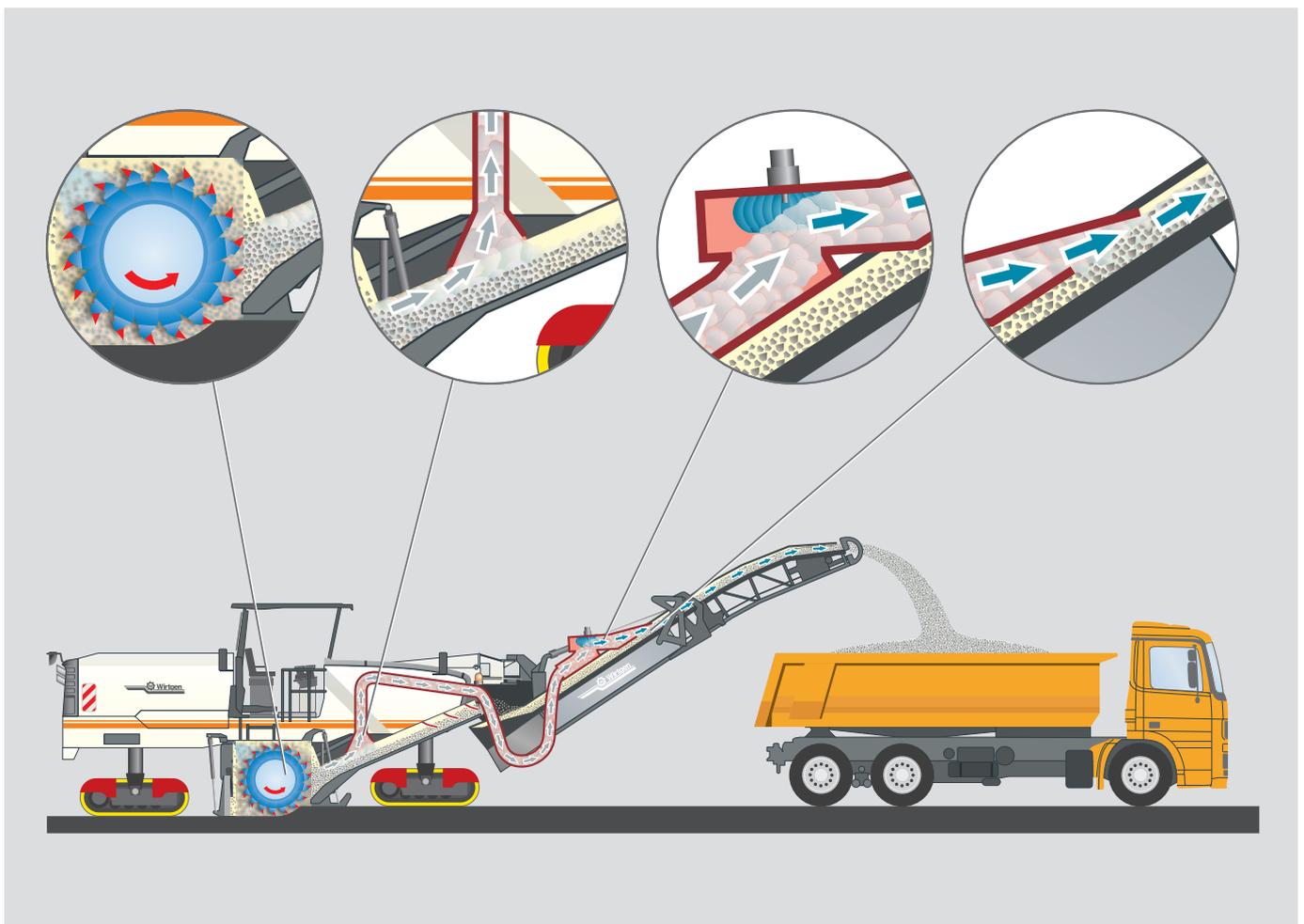
Continuously adjustable belt speed and discharge range ▼

-  High belt speed
-  Low belt speed



- ▶ Automatic control of the optimal belt speed guarantees minimum wear of the discharge conveyor belt, which has a rugged cleat profile.
- ▶ The operator is always fully aware of the loading process, the truck travelling ahead of the milling machine, and the moving traffic.
- ▶ The belt speed can also be adjusted manually to achieve perfect distribution of the milled material on the truck by setting a variable discharge pattern.
- ▶ A stoplight system integrated in the electrically adjustable, folding exterior mirrors enables visual but silent communication with the truck driver.

Vacuum cutting system offers a high level of operator comfort



Innovative extraction technology offers a free view of the milling edge

/// The health and well-being of the operating crew deserve particular attention. The W 220 can therefore be equipped with the vacuum cutting system to extract fine material particles: by creating a negative pressure in the drum housing, the mix of air and water vapour is evacuated and then fed back into the flow of the milled material transported on the conveyor via a hose system.

Better air quality and visibility in the working environment of the machine operator and ground crew significantly improve operator comfort and boost staff performance. In addition, reduced soiling of components such as the engine or air filter results in savings in the replacement of spare parts or cleaning of the machine.

Intelligent maintenance concept saves valuable working time



Keeping maintenance consistently simple



▲ The engine compartment opens hydraulically, granting convenient access to facilitate ...

... regular maintenance procedures such as replacing the air filter or checking the oil level ▶



▲ Maintenance diagnostics and parameter settings are effected via the control panel

▶ The few intelligently arranged points of maintenance are readily accessible by simply opening the engine cowling or service panels on the side of the machine.

▶ The water wash down and hydraulic high-pressure cleaner enable thorough cleaning of the W 220 regardless of the machine's location.

▶ Ample space is available for the storage of spare cutting tools, tool kit, machine equipment and high-pressure cleaner.

▶ The comprehensive, automatic diagnostics system of the machine independently monitors valves, sensors and control elements.

Perfect visibility regardless of the time of day or night



▲ Powerful lighting enables night operations to be completed quickly and efficiently

Backlit control panels and adjustable LED spotlights ▶



A comprehensive lighting system ensures full control of the work process

/// Cold milling machines are frequently operated at night to prevent heavily frequented roads from having to be closed during peak hours. The W 220 is therefore equipped with a perfect lighting system. Numerous working lights with flexible adjustment options arranged at various points of the W 220 and up to two lighting balloons perfectly illuminate the entire machine as well

as the roadway, milling edge and material discharge area. In addition, backlit control panels create an undisturbed working environment for both the machine operator and ground crew. All in all, safe operation of the machine in darkness ensures both excellent milling results and optimum utilization of the machine.

Great ease of transport



◀ The hydraulically folding discharge conveyor reduces the transport length of the W 220

Loaded quickly



▲ The canopy is folded down into transport position conveniently at the push of a button

Easy transport on a flatbed truck ▶



▣ The folding conveyor design reduces the overall length of the W 220, thus permitting the use of smaller transport vehicles.

▣ Supplementary weights allowing flexible use enable transport of the W 220 on vehicles with a low maximum permissible payload.

▣ The fold-down protective canopy minimizes transport height of the machine and flatbed truck.

▣ Our range of equipment options includes conveyor support legs for machine transport on a flatbed truck.

Environmentally compatible machine technology



Lower emissions, improved air quality

/// The W 220 is a real power horse, yet works in line with environmental considerations. Good air quality, low noise levels and low fuel consumption are proof of the high environmental awareness involved in the development of this large milling machine and implemented by the intelligent WIDRIVE machine management system. Consumption-optimized speed ranges in milling mode, adjustment

of the engine speed to the machine's advance rate, and temperature-controlled fan speeds contribute to protecting the environment and saving resources. In combination with the highly economical ECO diesel engine, fuel consumption is reduced significantly, resulting in much lower amounts of pollutants and noise affecting the environment.



◀ The W 220 is gentle on the environment

▼ Economical operation, low environmental impact, efficiently performing staff

We place high priority on environmental protection



- ▶ The effective VCS extraction system used to evacuate fine material particles reduces dust emission in the area of the milling drum housing.
- ▶ Different engine or milling drum speeds, which can be selected in line with the milling job, ensure exceptionally low fuel consumption.

- ▶ Efficient soundproofing of the engine compartment and the anti-vibration engine support reduce noise emission levels.
- ▶ No horns, please: the stoplight system used to communicate with the truck driver replaces the commonly used horn to reduce noise levels especially in night operations.



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