

The powerful unit for effective soil stabilization.

# Tractor-towed stabilizer WS 150, WS 220, WS 250









# Success guaranteed.



The WS 150, WS 220 and WS 250 tractor-towed stabilizers are designed for efficient soil stabilization at working widths of 1.5 m, 2.15 m and 2.5 m.

Their range of applications covers both soil improvement and soil strengthening measures.

In soil improvement, the tractor-towed stabilizers produce soils suitable for placing and compacting to create embankments, slopes, backfills or site haulage roads.

In soil strengthening, they create load-bearing surfaces for the construction of parking lots, roads, sports grounds, track beds, harbour facilities, airports or industrial parks.



# Outstanding features of the tractor-towed stabilizer

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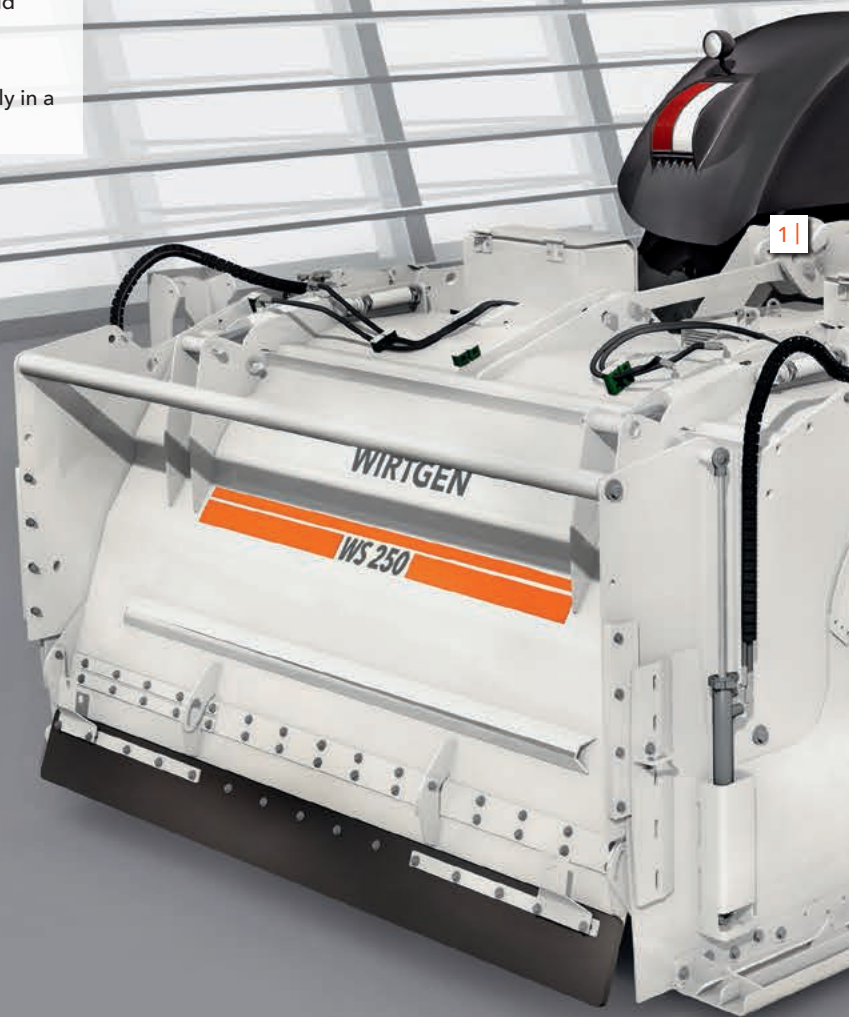
## HEAVY-DUTY LINKAGE

- > **Reliable transmission of power**  
Heavy-duty power take-off for reliable transmission of the engine power to the milling and mixing rotor.
- > **Three-point hitch**  
Standardized three-point hitch tailored to field requirements.
- > **Easy attachment**  
Attachment to the tractor is completed quickly in a few simple steps.

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## EFFICIENT MILLING AND MIXING PERFORMANCE

- > **Powerful milling and mixing rotor**  
Powerful milling and mixing rotor available with different toolholder systems.
- > **Mechanical drive**  
Highly efficient mechanical belt drives on the left and right.
- > **Eccentric milling rotor gearbox**  
Pulley housing always remains above the ground due to eccentric milling drum gearbox.
- > **Quick replacement of cutting tools**  
Easy replacement of cutting tools using a pneumatic tool extractor.







3 |

## EFFECTIVE CONCEPT

- > **Adjustable rotor plate**  
Adjustable rear rotor plate in extra high position.
- > **High contact pressure**  
Rotor plate with high contact pressure for homogeneous mixing quality.
- > **Adjustable levelling blade**  
Mechanically adjustable levelling blade for perfectly even surfaces.
- > **Adjustable side plate**  
Hydraulically height-adjustable side plates left and right including mechanical retainer.
- > **Flexible stone guard**  
Flexible stone guard at the front to protect against flying stones.





*Flawless mixing results and perfect levelling are the hallmarks of the tractor-towed stabilizer.*

## Boost up your tractor to become a soil stabilizer

### MAKING A SUCCESSFUL START IN SOIL STABILIZATION

Soil stabilization has been proving its worth for many decades as an economical and environmentally friendly method. The WS 150, WS 220 and WS 250 tractor-towed stabilizer from WIRTGEN enables you to turn your tractor into a perfect soil stabilizer with only a few simple flicks of the wrist.

The compact unit converts instable ground into high-quality construction material, improves compactability, and dispenses with the necessity of an expensive soil exchange. It impresses with its intelligent design and highly

economical operation. The unit's low weight and compact dimensions facilitate transport from one construction site to the next.

Because of the low capital expenditure involved, the combination of towed stabilizer and tractor is ideally suited in particular for small to medium-sized construction projects.





*The reliable drive concept ensures high efficiency and significantly reduces fuel consumption.*





The standardized three-point hitch complies with common international standards.

## Hooked up quickly and easily

### SIMPLE MOUNTING PRINCIPLE

**It happens every day:** the tractor, used as a towing unit just a minute ago, needs to be converted into a soil stabilizer as quickly as possible. This requirement necessitates a simple yet practical attachment system for the milling and mixing rotor unit.

**1 + 2 |** Hook up via three-point hitch, connect power take-off, attach top link, and here goes!

Being geared to flexible and effective operation, the tractor-towed stabilizer from WIRTGEN offers the ideal solution. It is attached to the tractor effortlessly by way of a standardized three-point hitch, using the tractor's power take-off at the same time to drive the milling and mixing rotor.







# Variable stone guard

## PROTECTION AGAINST FLYING STONES

The rotor housing is additionally equipped with a variable stone guard at the front. The stone guard protects against flying stones and reduces the development of dust.

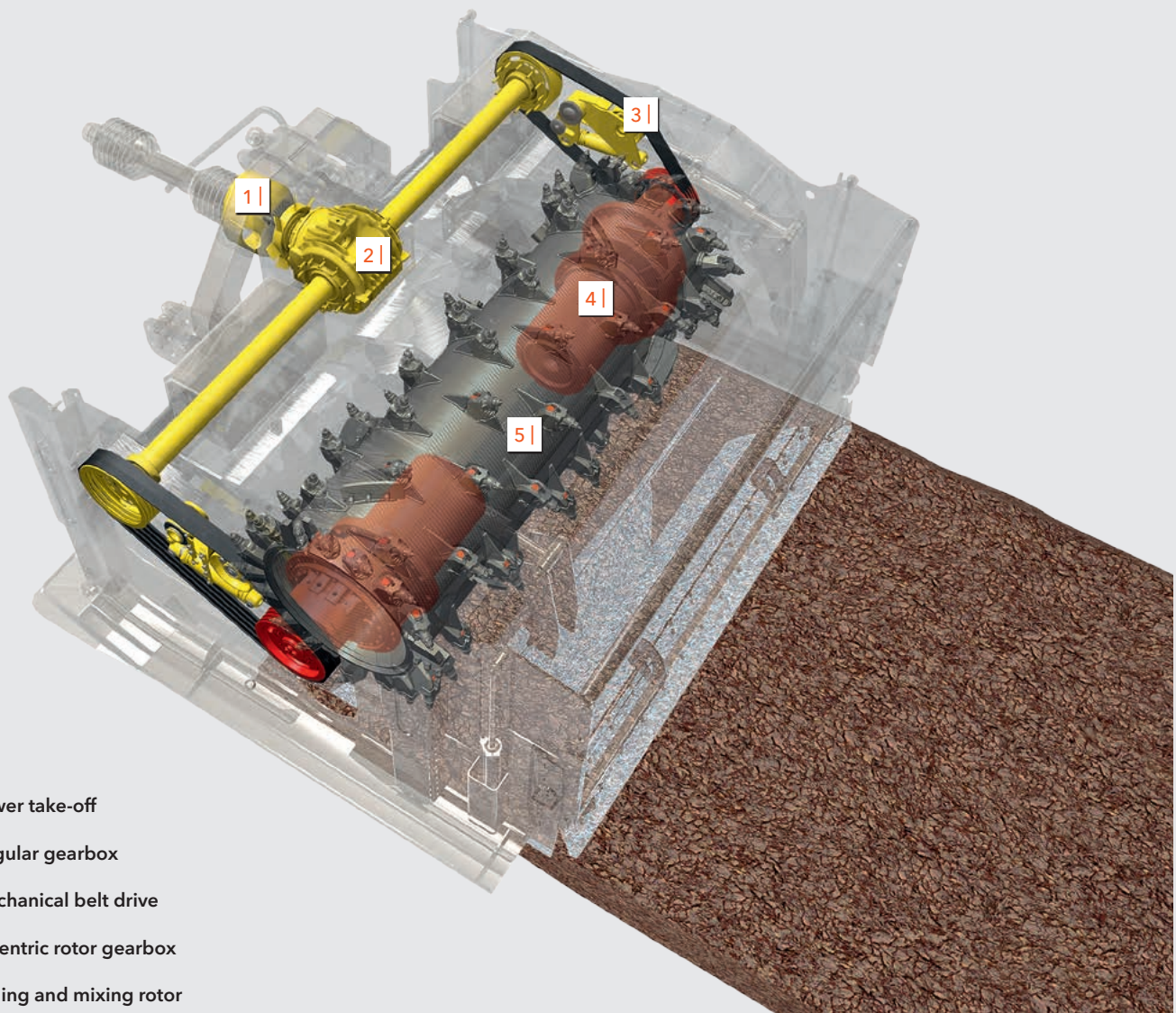
The unit is adjustable in height hydraulically and can be adapted to site conditions.

*3 + 4 | The stone guard consists of fatigue-resistant hard rubber and can be adjusted to the stabilizer's current working depth.*

*The stone guard is proving its worth in operation: no flying stones and less dust.*







- 1 | Power take-off
- 2 | Angular gearbox
- 3 | Mechanical belt drive
- 4 | Eccentric rotor gearbox
- 5 | Milling and mixing rotor

## Efficient mechanical belt drive

### TRANSLATING POWER INTO PRODUCTIVITY

The success of our tractor-towed stabilizers is guaranteed by their ability to thoroughly mix even the heaviest soils. This is ensured by the powerful, mechanically driven milling and mixing rotor, which homogenizes the material effectively across the full working width and evenly mixes in the pre-spread binding agents, such as lime or cement. Belt drives are arranged on both sides of the milling and mixing rotor.

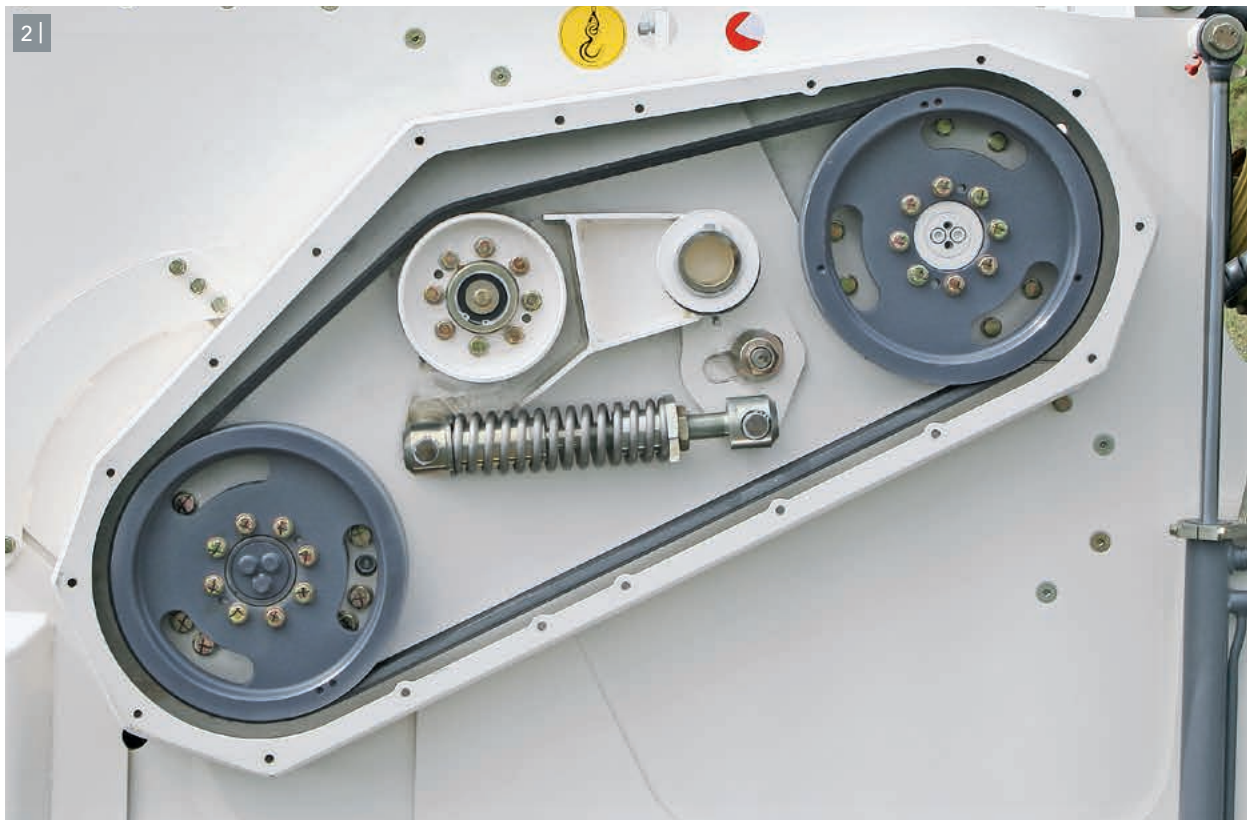
This dual drive concept is very efficient in translating engine power into milling performance. In addition, the eccentric rotor gearbox causes the pulley housing to always remain above the ground.

The stabilizer's intelligent drive concept has the positive side effect of reducing the tractor's fuel consumption. The spring-loaded belt tensioner ensures optimum transmission of power at all times.





1 | Powerful belt drive for full power at working depths of up to 500 mm



2 | Low-maintenance belt tensioners left and right



# Lots of know-how in the milling and mixing rotor

## GEARED FOR TOUGH OPERATIONS

The milling and mixing rotor - core element of the tractor-towed stabilizer - can optionally be equipped with the tried-and-tested quick-change toolholder system for tough everyday operation on the construction site. With this

1 | Ample storage space for tools or wearing parts.

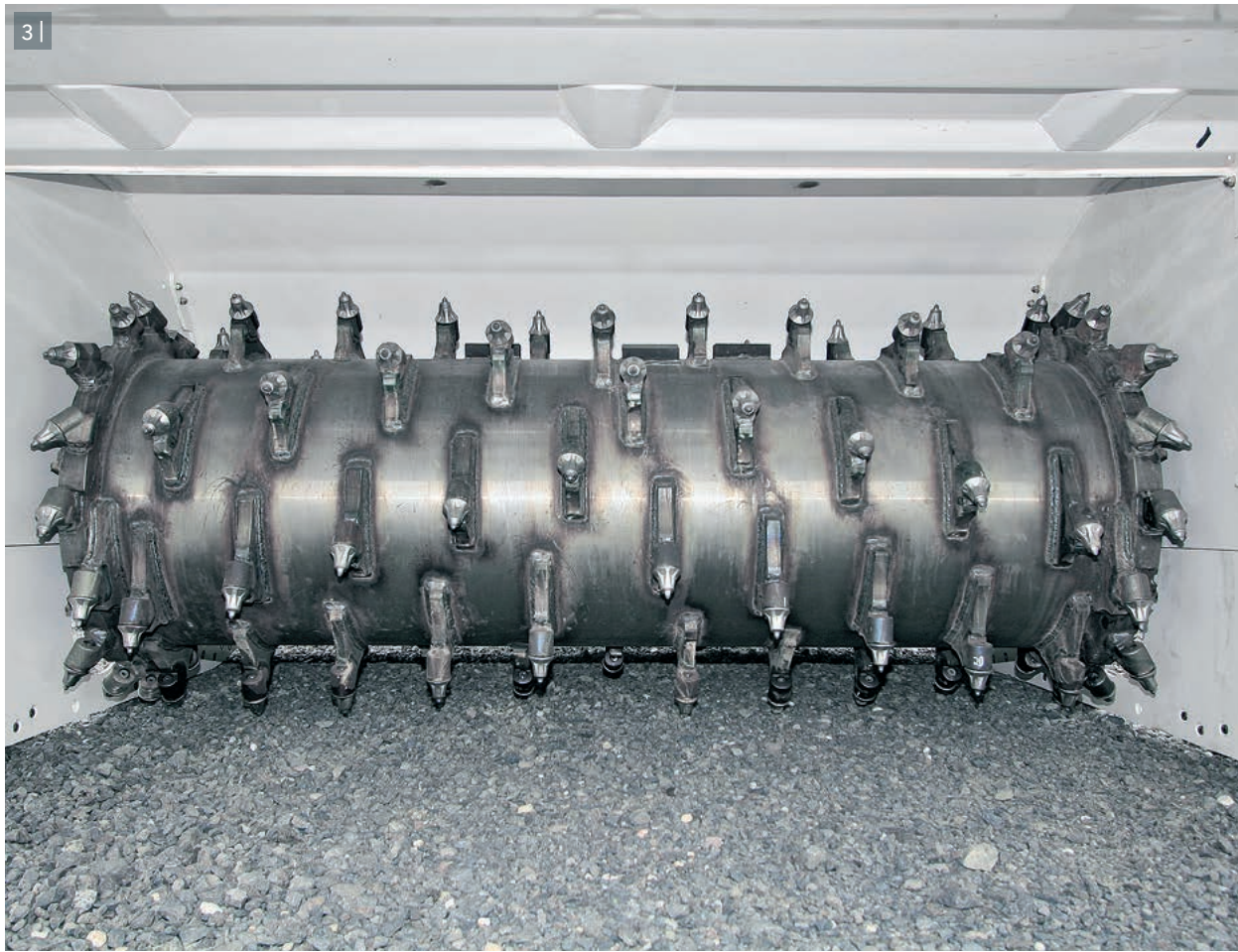


system, WIRTGEN builds on its experience of many years in cutting technology. A precisely defined arrangement of the cutting tools on the rotor ensures smooth machine behaviour and perfect milling and mixing results. Additional marks in favour of this system are optimum tool rotation, extremely low wear and tear, easy tool replacement, and easy monitoring of the degree of wear of the upper toolholder parts. The intelligently arranged toolholders allow sufficient space for the material to be stabilized. The mode of operation minimizes material stress, which extends the useful life and improves the profitability of the entire machine. The pneumatic tool extractor and easily accessible rotor enable cutting tools to be replaced quickly and conveniently.

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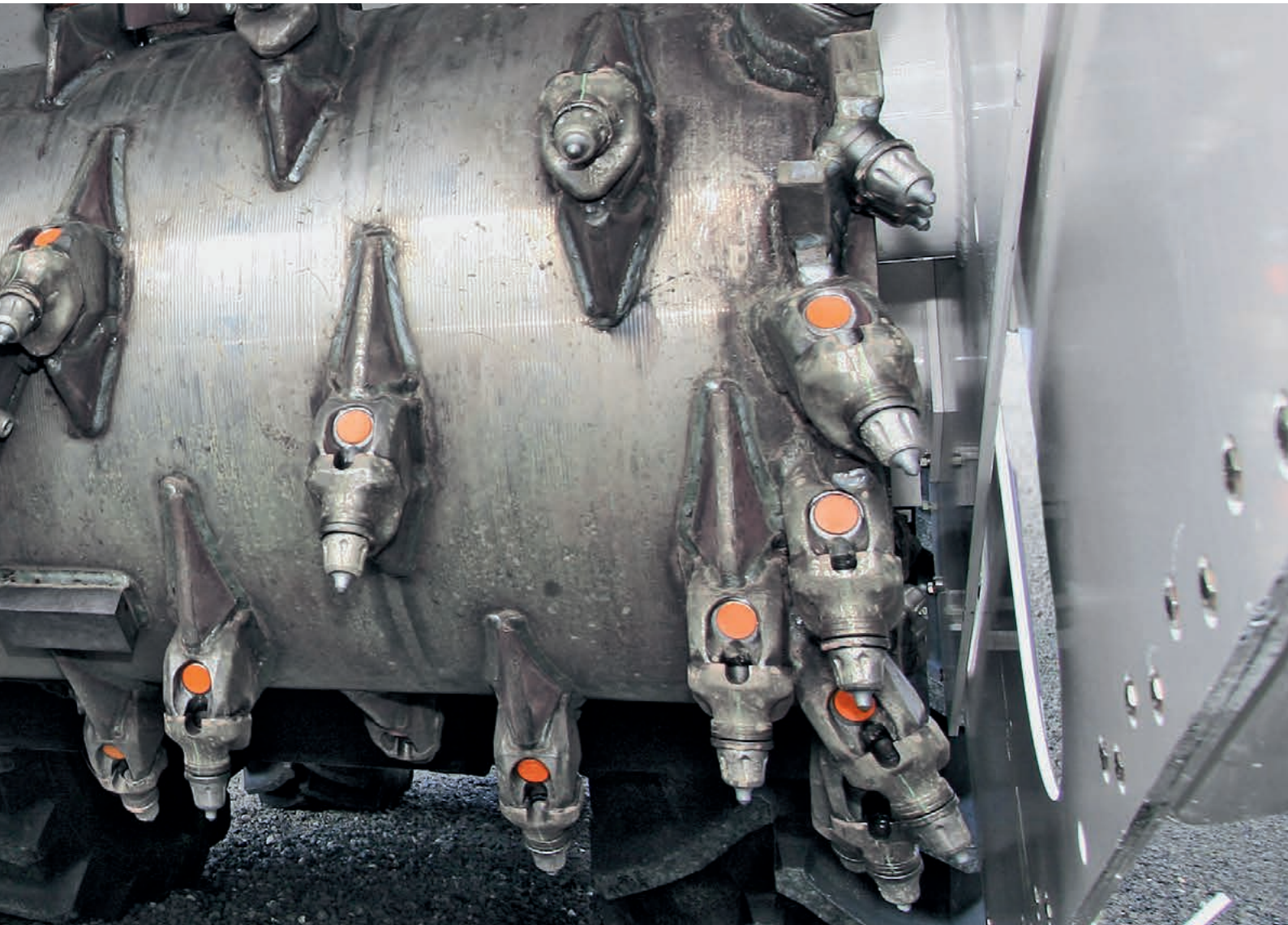






2 | The quick-change toolholder system significantly reduces operating costs of the machine.

3 | Alternative solution with welded toolholders.







*The milling and mixing rotor is the only part penetrating the soil. The current milling depth can be monitored on a digital milling depth indicator.*

## Side plates moving on skids prevent performance losses

### EXCELLENT PERFORMANCE CHARACTERISTICS

Height-adjustable side plates enable the milling and mixing rotor to penetrate the soil to the specified working depth right from the start. The intelligent design prevents the side plates from sapping power needlessly as a result of being pulled through the recycled material. The power provided by the tractor is used entirely to drive the milling and mixing rotor. If required, the operator can raise the side plates via hydraulic cylinders. The current working depth can be monitored conveniently from the tractor's cab at all times via the digital milling depth indicator.

Side plates comprising a mechanical retainer can be installed at the tractor-towed stabilizer at the customer's request. The retainers can be adjusted manually and ensure compliance with the specified working depth. In this design, the three-point hitch of the tractor is in floating position, and the tractor-towed stabilizer moves on the skids. A typical example of use is the stabilization of agricultural roads at a consistent working depth of 25 cm.





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1 | Combined with a mechanical retainer, the side plates guarantee a consistent working depth.

2 | The hydraulically height-adjustable side plates allow the milling and mixing rotor to penetrate the soil immediately.

3 | The lifting side plates move over the surface on skids regardless of the working depth.



# Homogeneous mixing quality guaranteed

## ADJUSTABLE ROTOR PLATE

The WS 150, WS 220 and WS 250 tractor-towed stabilizers from WIRTGEN are the most powerful stabilizers in their class. This is attributable, to a significant extent, to the mixing chamber which has been designed in line with

*The rotor plate can be precisely adjusted to requirements.*

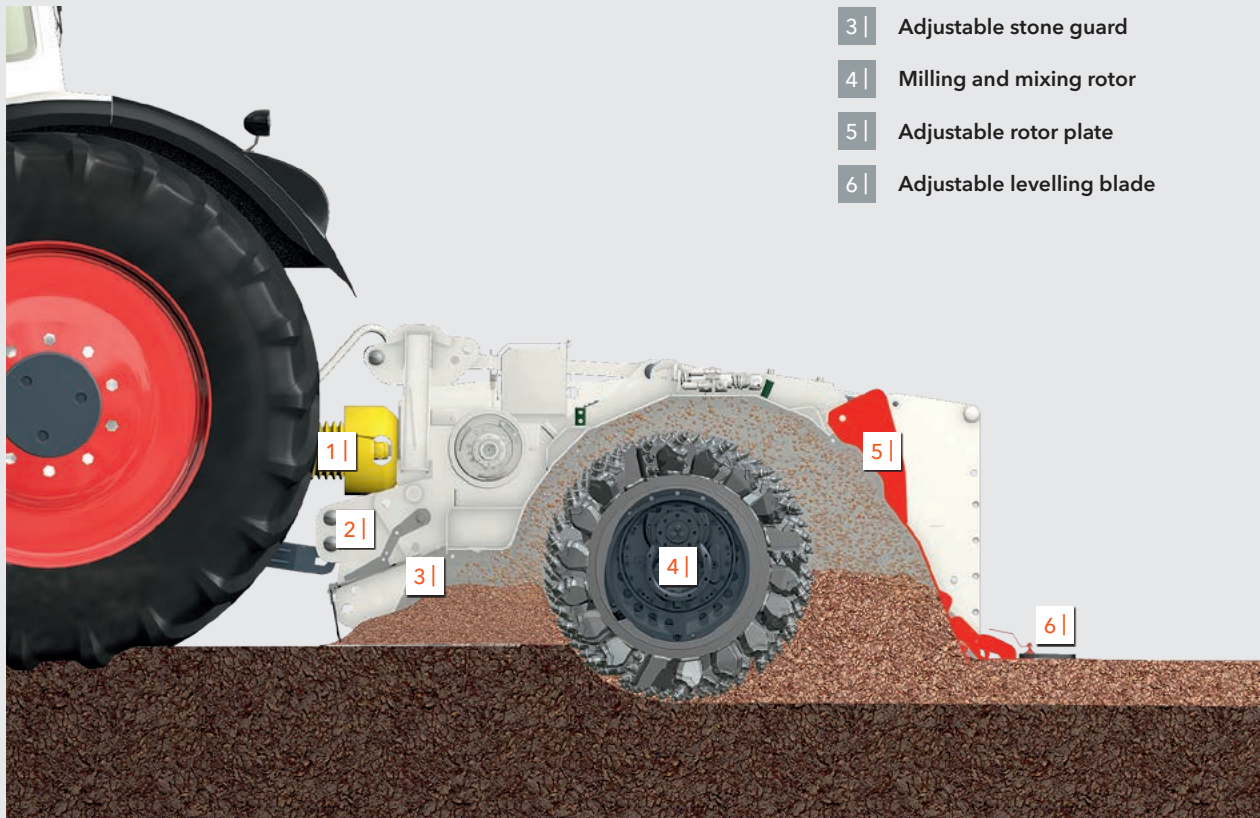
field requirements and greatly contributes to the homogeneous mixing of binders and soil. The rotor housing design and high position of the rotor plate have been perfectly tailored to the powerful milling and mixing rotor. Hydraulic cylinders and springs at the rear rotor plate ensure optimum contact pressure. These features ensure an optimum quantity of construction material in the mixing chamber at all times and also create an even surface behind the tractor-towed stabilizer.

WIRTGEN stabilizers are the ideal candidates also for homogenizing soils averse to compaction, such as non-uniform soil mixtures.



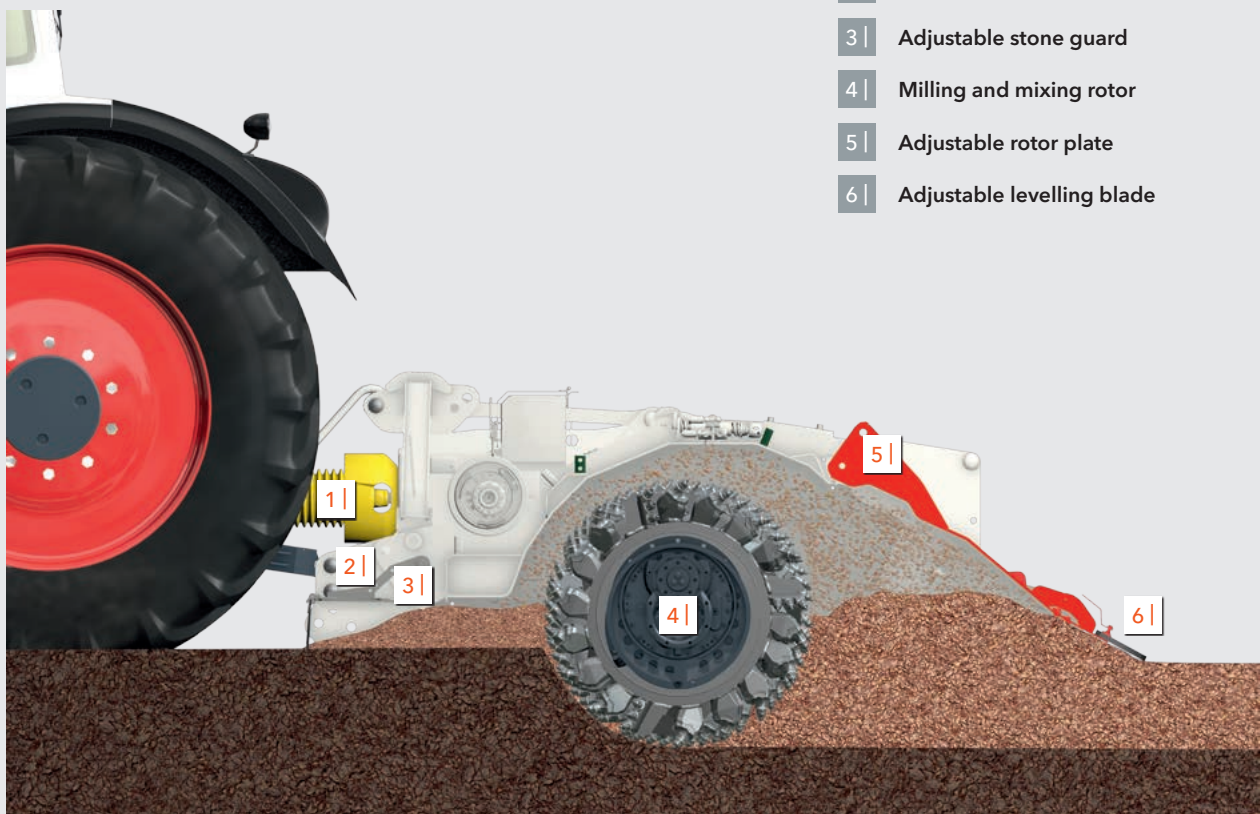


## LOW WORKING DEPTH



- 1 | Power take-off
- 2 | Three-point hitch
- 3 | Adjustable stone guard
- 4 | Milling and mixing rotor
- 5 | Adjustable rotor plate
- 6 | Adjustable levelling blade

## HIGH WORKING DEPTH



- 1 | Power take-off
- 2 | Three-point hitch
- 3 | Adjustable stone guard
- 4 | Milling and mixing rotor
- 5 | Adjustable rotor plate
- 6 | Adjustable levelling blade





# Finishing with a perfect surface

## PERFECT FINISH

Following thorough mixing, the soil is levelled across the full width by the permanently pre-tensioned rotor plate which is fitted with an adjustable levelling blade. This design ensures that an optimum quantity of construction material mix is in the mixing chamber at all times, and additionally creates an even surface behind the tractor-towed stabilizer. The working depth is set via the tractor's rear power lift. Powerful hydraulic cylinders and springs with high spring rate ensure steady contact pressure at the rear rotor plate. Depending on the working depth and type of soil to be

stabilized, the angle of the levelling blade to the rotor plate can additionally be adjusted manually to ensure optimum distribution of the material at all times.

After compaction by suitable rollers, the stabilized soil meets the specified quality standards.





1 | The adjustable levelling blade produces a smooth, even surface regardless of the working depth.

2 | Adjustment of the levelling blade is effected mechanically via slotted holes.



3 | Long spring assemblies ensure optimum contact pressure of the rotor plate.





*Soil improvement using lime reduces the water content in excessively moist or wet soil ...*

## Soil improvement - producing soil suitable for compaction

### FOR BETTER QUALITY

Whether heavy, coarse-grained or sandy subgrade material: the tractor-towed stabilizer can be relied on to convert it into soil that is highly suitable for placing and compacting. If too coarse, the material to be stabilized is

crushed in the mixing chamber by the milling and mixing rotor. Soft soil is covered with lime spread by, for instance, a binder spreader prior to treatment. Subsequent homogeneous mixing by the milling and mixing rotor causes the lime to remove the excess humidity from the soil.

*... in order to improve its compactability.*



In earthmoving operations, soil improvement pays off in the construction of, for instance, dams or embankments, backfilling or site haulage roads. Soil improvement has shown itself to be eminently suitable also for landfills with clayey subsoils. Soil processed with suitable binding agents is practically unsusceptible to water and offers optimum conditions for further compaction.









*Binder spreaders from Streumaster are perfectly suited to work in tandem with our soil stabilizers.*

## Soil stabilization – a foundation to build on

### GROUNDWORK FOR HEAVY LOADS

Soil stabilization with added binding agents like cement is a patent remedy for increasing the long-term resistance against stresses resulting from traffic and weather conditions. The cement is pre-spread by, for instance, a

*In soil strengthening, permanently load-bearing soil is produced in the mixing chamber.*

binder spreader and is then thoroughly mixed with the soil by the milling and mixing rotor. Soil stabilization produces a ground of permanently high bearing capacity, strength and excellent resistance to frost.

Soil stabilization guarantees a permanently high degree of volume stability. Analyses and samples taken on site confirm that the specified targets have been met.

The stabilized surfaces are ideally suited for the construction of parking lots, roads, sports grounds, track beds, harbour docks, airfields and industrial facilities.









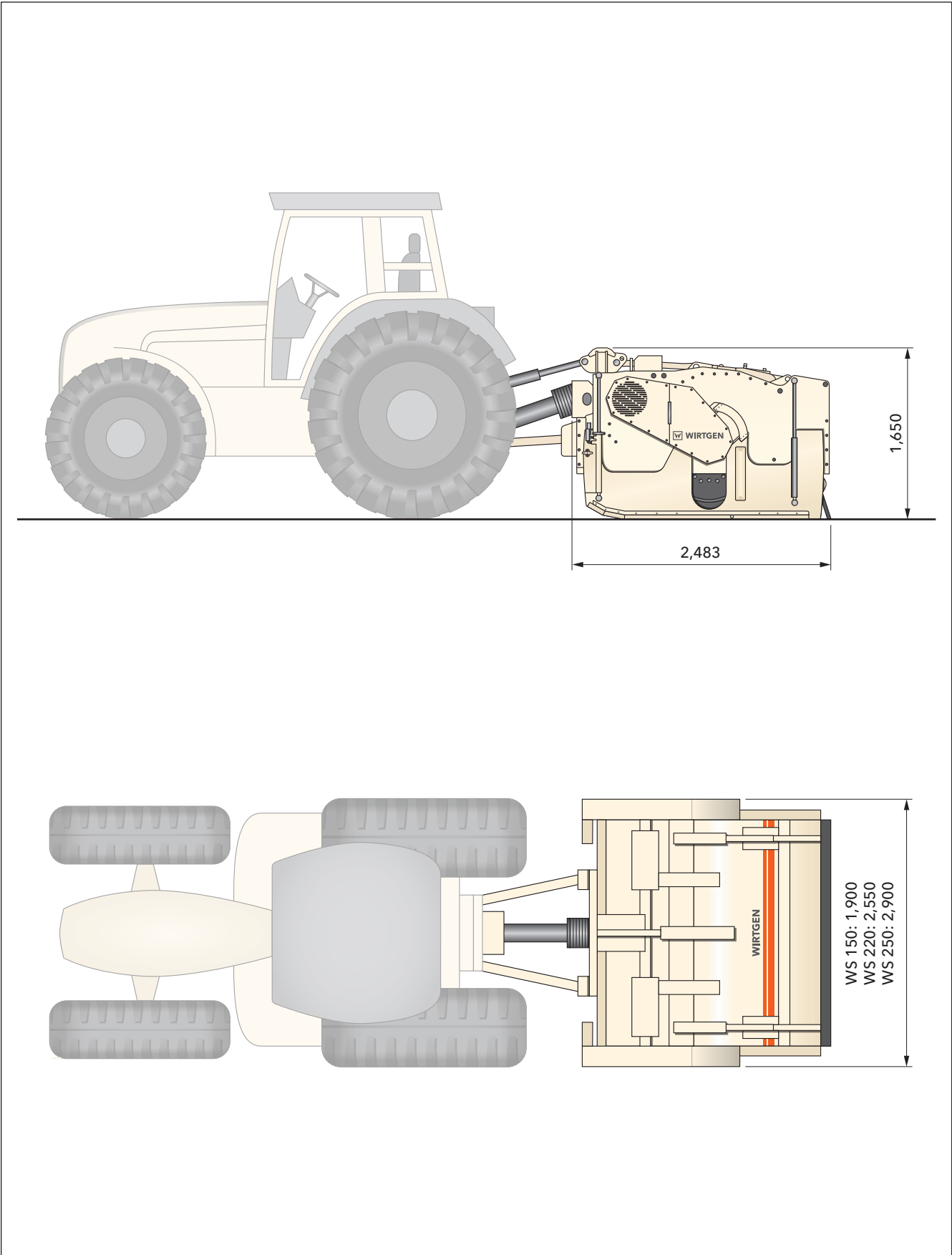
# Technical specification

	WS 150	WS 220	WS 250
<b>Milling and mixing rotor</b>			
Working width max.	1,500 mm	2,150 mm	2,500 mm
Working depth	0 to 500 mm		
Tool spacing	HT9: 35 mm/HT22: 40 mm		
Number of cutting tools with toolholder system HT9	68	88	98
Number of cutting tools with toolholder system HT22	80	96	104
Drum diameter with tools	1,080 mm		
Drum speed	210 rpm		
<b>Transport dimensions</b>			
Dimensions (L x W x H)	2,483 x 1,900 x 1,650 mm	2,483 x 2,550 x 1,650 mm	2,483 x 2,900 x 1,650 mm
<b>Tractor requirements</b>			
Recommended engine power	> 150 kW/204 PS	> 180 kW/245 PS	> 220 kW/300 PS
Recommended traction drive	continuously variable 0 to X km/h		
Max. output at power take-off	280 kW/381 PS		
Loading weight, front	2,500 to 3,000 kg		
Driveshaft	with internal tothing 1 3/4", 20 or 6 teeth *		
Power take-off speed	1,000 rpm		
Rear power lift	three-point, categories 3 and 4 DIN/ISO 730-1		
<b>Additional rear valves one each, double-acting</b>			
For rear drum plate	yes		
For stone guard, front	yes		
For hydraulic top link (optional)	yes		
Including floating position for side plate, left and right	yes		
<b>Machine weights</b>			
Own weight with HT9 toolholder system	4,035 to 4,285 kg	4,495 to 4,745 kg	4,755 to 5,005 kg
Own weight with HT22 quick-change toolholder system (option)	4,100 to 4,350 kg	4,520 to 4,770 kg	4,830 to 5,090 kg

\* = Driveshaft needs to be dimensioned in accordance with the tractor's engine power (length depending on equipment combination)



# Dimensions



Dimensions in mm



# Standard equipment

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	WS 150	WS 220	WS 250
<b>Base machine</b>			
Basic machine with engine	■	■	■
Stabiliser for mounting on tractors with rear three-point linkage for ISO 730-1 category 3 (cat. III) and category 4 (cat. IV)	■	■	■
<b>Milling and mixing unit</b>			
Movable side plates on the milling and mixing rotor housing	□	□	□
<b>Milling and mixing rotor</b>			
Mechanical drive via tractor power take-off (PTO speed 1,000 rpm), bevel gearbox, two four-groove V-belts with automatic belt tensioners and two spur gearboxes	■	■	■
Milling and mixing rotor FB1500 HT9 LA35 D25 with 68 picks	□	–	–
Milling and mixing rotor FB2150 HT9 LA35 D25 with 88 picks	–	□	–
Milling and mixing rotor FB2500 HT9 LA35 D25 with 98 picks	–	–	□
<b>Machine control and levelling system</b>			
The working depth is set using the rear linkage on the tractor	■	■	■
The rear milling drum flap is adjusted hydraulically from the tractor	■	■	■
In addition, the flap has a leveling blade which can be adjusted with a spring preload	■	■	■
The splash guard is adjusted hydraulically from the tractor	■	■	■
<b>Others</b>			
CE conformity	■	■	■
Paint standard cream white RAL 9001	□	□	□
Profile shaft 20-way external toothing	□	□	□
Lifting tackle for mounting the stabiliser on tractor	□	□	□

- = Standard equipment
- = Standard equipment, replaceable with optional equipment
- = Optional equipment



# Optional equipment

	WS 150	WS 220	WS 250
<b>Milling and mixing unit</b>			
Movable side plates on the milling and mixing rotor housing with milling depth stop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Milling and mixing rotor</b>			
Milling and mixing rotor FB1500 HT22 LA40 D22 with 80 picks	<input type="checkbox"/>	–	–
Milling and mixing rotor FB2150 HT22 LA40 D22 with 96 picks	–	<input type="checkbox"/>	–
Milling and mixing rotor FB2500 HT22 LA40 D22 with 104 picks	–	–	<input type="checkbox"/>
<b>Spraying unit/ binding agent addition</b>			
Water spraying system FB1500 without pump and control unit	<input type="checkbox"/>	–	–
Water spraying system FB2150 without pump and control unit	–	<input type="checkbox"/>	–
Water spraying system FB2500 without pump and control unit	–	–	<input type="checkbox"/>
<b>Machine control and levelling system</b>			
Digital milling depth display right or left	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Digital milling depth display right and left	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Others</b>			
Paint in one special colour (RAL)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Profile shaft 6-way external toothing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Linkage device for John Deere tractors with additional hydraulic top link	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drive shaft P600 including profile shaft Z20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drive shaft P600 including profile shaft Z6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drive shaft P700 including profile shaft Z20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Drive shaft P700 including profile shaft Z6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Linkage device for fitting the stabilizer on tractors with additional hydraulic top link	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pneumatic hammer with pick ejector/ inserter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- = Standard equipment
- = Standard equipment, replaceable with optional equipment
- = Optional equipment





WIRTGEN GmbH  
Reinhard-Wirtgen-Str. 2 · 53578 Windhagen · Germany  
Phone: +49 (0)26 45/131-0 · Fax: +49 (0)26 45/131-392  
Internet: [www.wirtgen.com](http://www.wirtgen.com) · E-Mail: [info@wirtgen.com](mailto:info@wirtgen.com)

