

The powerful unit for effective soil stabilization.

Tractor-towed stabilizer

WS 220 | WS 250





Success guaranteed.



The WS 220 and WS 250 tractor-towed stabilizers are designed for efficient soil stabilization at working widths of 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

04
05

1 |

HEAVY-DUTY LINKAGE

> Reliable transmission of power

Heavy-duty shaft drive for reliable transmission of the engine power to the milling and mixing rotor by means of an overload clutch.

> 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.

2 |

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.





1

2

3

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.



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

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 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.



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



1 | *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.

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 means of a standardized three-point hitch, using the tractor's shaft drive at the same time to drive the milling and mixing rotor.

2 | *Hook up via three-point hitch, attach top link ...*

3 | *...connect driveshaft, and here goes!*





Variable stone guard

PROTECTION AGAINST FLYING STONES

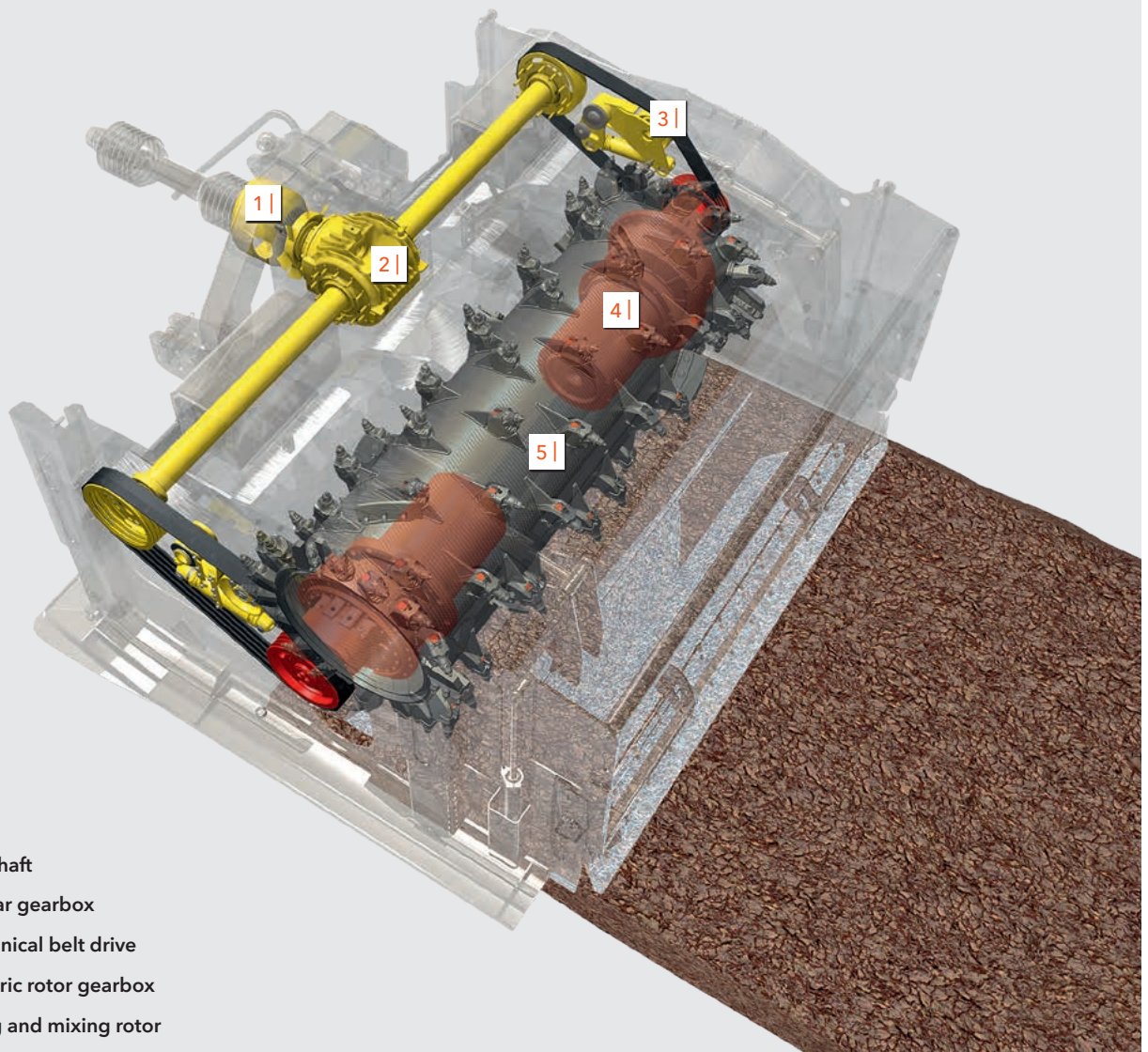
The rotor housing is additionally equipped with a variable stone guard at the front. The stone guard protects against flying stones and reduces the development of dust.

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

1-2 | The stone guard consists of fatigue-resistant hard rubber and can be adjusted to the stabilizer's current working depth.

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





- 1 | Driveshaft
- 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.*



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 **HT22** for tough everyday operation on the construction site. With this system, WIRTGEN builds on its expe-

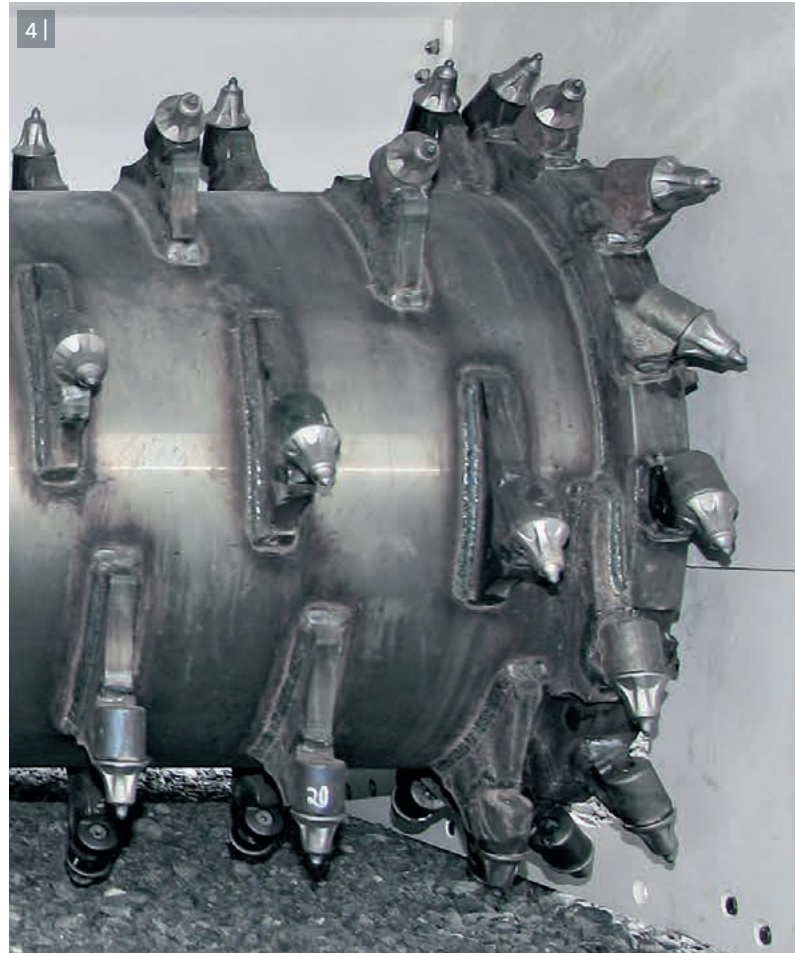
1 | Ample storage space for tools or wearing parts.



rience 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.

2 |





2 | The quick-change toolholder system HT22 significantly reduces operating costs of the machine.

3 | The innovative WIRTGEN WCC flat picks offering exceptional durability and high fracture strength can also be used at the customer's request.

4 | Basic model with welded toolholders.



1 | 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 only the milling and mixing rotor to penetrate the soil down 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.



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

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

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

Homogeneous mixing quality guaranteed

ADJUSTABLE ROTOR PLATE

The 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 field requirements and greatly contributes to the

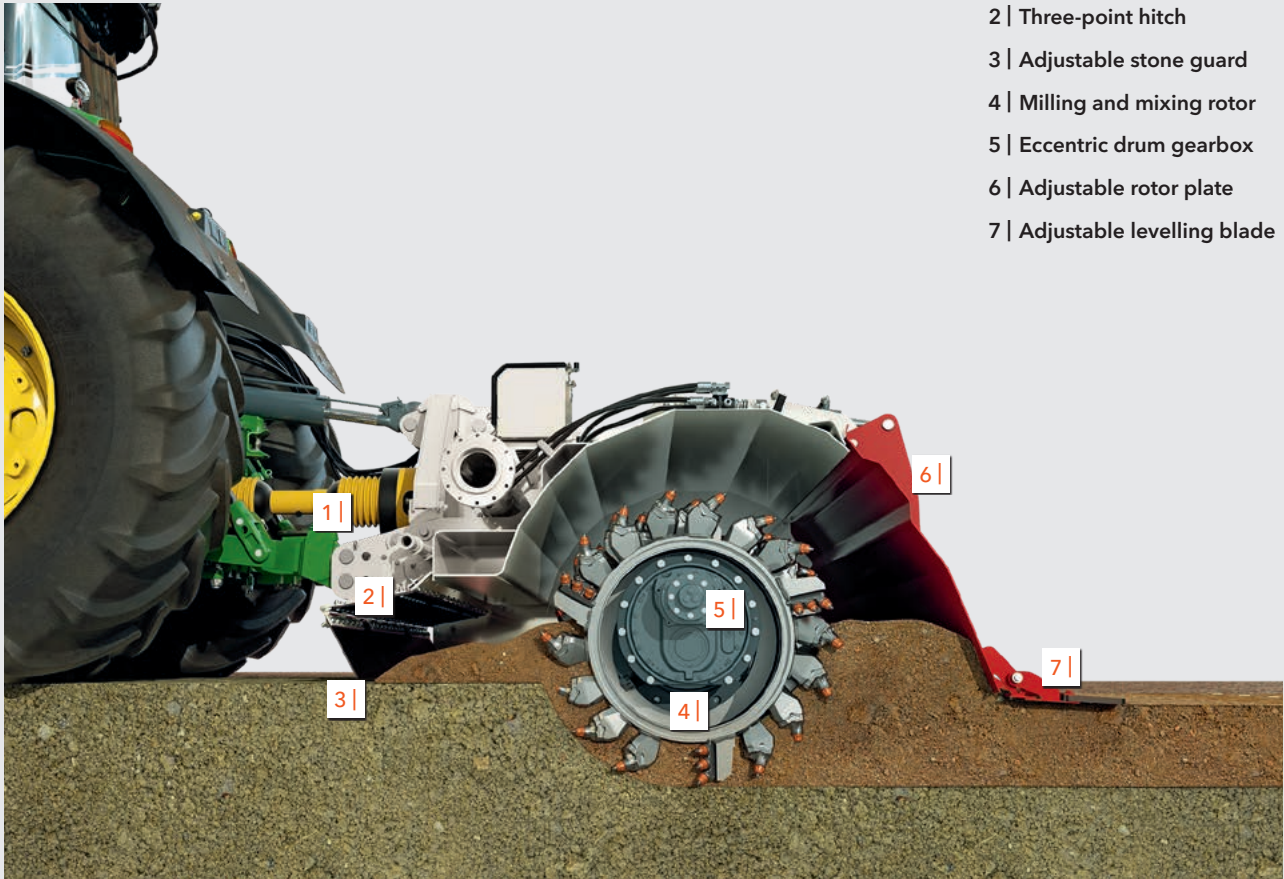
1-2 | *The rotor plate can be precisely adjusted to requirements.*

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 | Driveshaft
- 2 | Three-point hitch
- 3 | Adjustable stone guard
- 4 | Milling and mixing rotor
- 5 | Eccentric drum gearbox
- 6 | Adjustable rotor plate
- 7 | Adjustable levelling blade

HIGH WORKING DEPTH





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 combination of rotor plate with spring assembly and adjustable levelling blade guarantees optimum results.

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



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



1 | 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.

2 | ... 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.







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

Soil stabilization – a foundation to build on

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

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 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 220 | WS 250

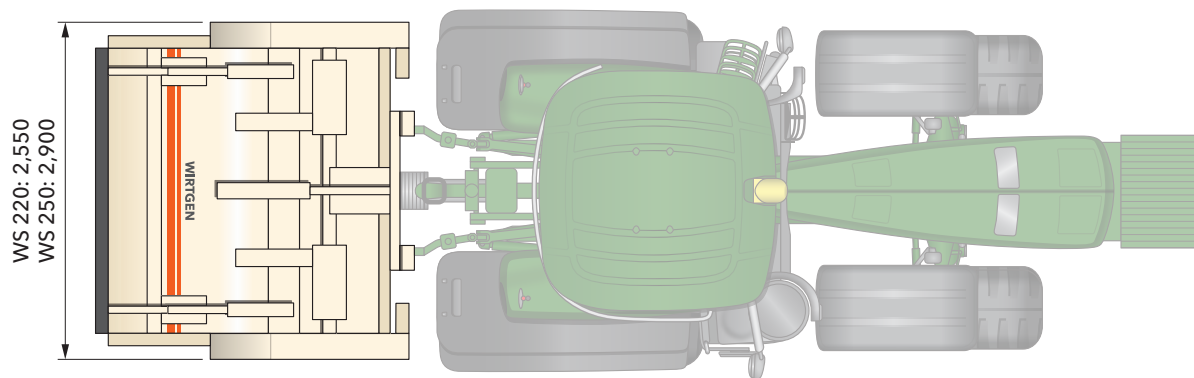
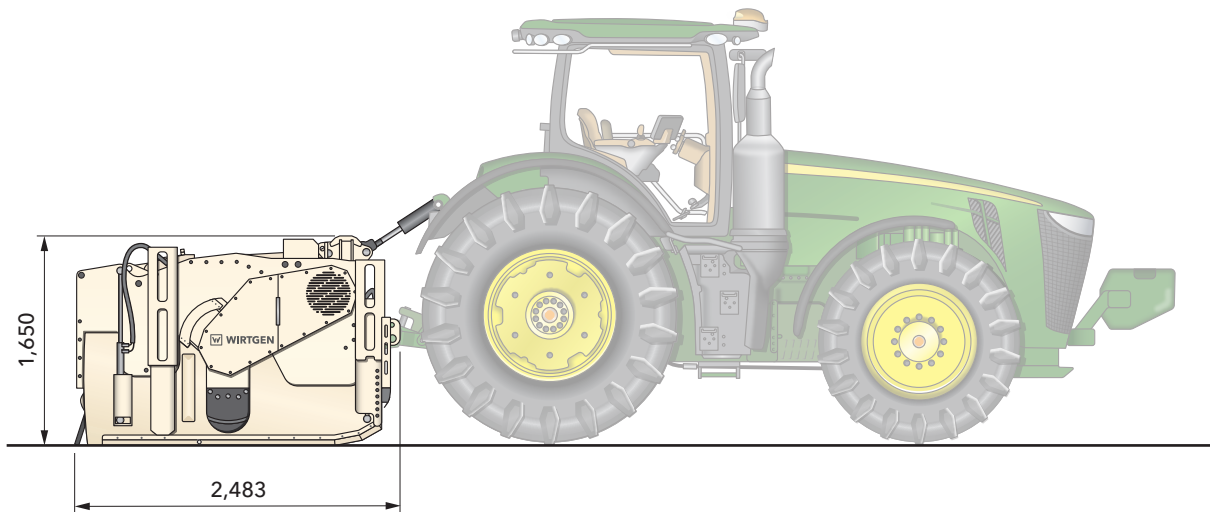
24
25

	WS 220	WS 250
Milling and mixing rotor		
Working width max.	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	88	98
Number of cutting tools with toolholder system HT22	98	106
Drum diameter with tools	1,080 mm	
Drum speed	210 rpm	
Transport dimensions		
Dimensions (L x W x H)	2,483 x 2,550 x 1,650 mm	2,483 x 2,900 x 1,650 mm
Tractor requirements		
Recommended engine power	> 180 kW/245 PS	> 220 kW/300 PS
Recommended traction drive	continuously variable 0 to v_{max}	
Max. output at the driveshaft	280 kW/381 PS	
Loading weight, front	2,500 to 3,000 kg (1,800 kg for John Deere 8R series)	
Driveshaft	with internal toothing 1 3/4", 20 or 6 teeth *	
Driveshaft speed	1,000 rpm	
Rear power lift	three-point, categories 3 and 4 DIN/ISO 730-1	
Additional rear valves one each, double-acting		
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	
Machine weights		
Own weight with HT9 toolholder system	4,495 to 4,745 kg	4,755 to 5,005 kg
Own weight with HT22 quick-change toolholder system (option)	4,520 to 4,840 kg	4,830 to 5,160 kg

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

Dimensions

WS 220 | WS 250



Standard equipment features

WS 220 | WS 250

26
27

	WS 220	WS 250
Basic machine		
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)	■	■
Milling and mixing unit		
Movable side plates on the milling and mixing rotor housing	□	□
Milling and mixing rotor		
Milling and mixing rotor FB2150 HT9 LA35 D25 with 88 picks	□	—
Milling and mixing rotor FB2500 HT9 LA35 D25 with 98 picks	—	□
Machine control and levelling system		
The working depth is set using the tractor's rear power lift	■	■
The rear rotor plate is adjusted hydraulically from the tractor	■	■
The rotor plate is additionally fitted with a levelling blade with spring preload adjustment	■	■
The stone guard is adjusted hydraulically from the tractor	■	■
Mechanical drive via the tractor's driveshaft (driveshaft speed 1,000 rpm), bevel gearbox, two four-rib high-power V-belts with automatic belt tensioners and two spur gearboxes	■	■
Miscellaneous		
CE Declaration of Conformity	■	■
Standard painting in RAL 9001 (cream)	□	□
Splined shaft with external toothing, 20 teeth	□	□
Coupling device for coupling the stabiliser to a tractor	□	□

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

Optional equipment features

WS 220 | WS 250

	WS 220	WS 250
Milling and mixing unit		
Movable side plates on the milling and mixing rotor housing with milling depth stop	<input type="checkbox"/>	<input type="checkbox"/>
Milling and mixing rotor		
Milling and mixing rotor FB2150 HT22 LA40 D22 with 98 picks	<input type="checkbox"/>	–
Milling and mixing rotor FB2500 HT22 LA40 D22 with 106 picks	–	<input type="checkbox"/>
Milling and mixing rotor FB2150 HT22 LA40 with 74 flat picks WCC and 24 standard picks D22	<input type="checkbox"/>	–
Milling and mixing rotor FB2500 HT22 LA40 with 82 flat picks WCC and 24 standard picks D22	–	<input type="checkbox"/>
Spraying unit/binding agent addition		
Water spraying system, FB2150 without pump and control unit	<input type="checkbox"/>	–
Water spraying system FB2500 without pump and control unit	–	<input type="checkbox"/>
Machine control and levelling system		
Digital milling depth display, right or left	<input type="checkbox"/>	<input type="checkbox"/>
Digital milling depth display, right and left	<input type="checkbox"/>	<input type="checkbox"/>
Miscellaneous		
Painting in one special color (RAL)	<input type="checkbox"/>	<input type="checkbox"/>
Splined shaft with external toothing, 6 teeth	<input type="checkbox"/>	<input type="checkbox"/>
Coupling device for John Deere tractors including additional hydraulic top link	<input type="checkbox"/>	<input type="checkbox"/>
Additional skids, 250 mm wide	<input type="checkbox"/>	<input type="checkbox"/>
Driveshaft P600 1¾" including splined shaft with 20 teeth	<input type="checkbox"/>	<input type="checkbox"/>
Driveshaft P600 1¾" including splined shaft with 6 teeth	<input type="checkbox"/>	<input type="checkbox"/>
Driveshaft P700 1¾" including splined shaft with 20 teeth	<input type="checkbox"/>	<input type="checkbox"/>
Driveshaft P700 1¾" including splined shaft with 6 teeth	<input type="checkbox"/>	<input type="checkbox"/>
Coupling device for John Deere tractors including additional hydraulic top link	<input type="checkbox"/>	<input type="checkbox"/>
Pneumatic hammer with pick extractor/insertor	<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 · E-Mail: info@wirtgen.com

