

The powerful unit for effective soil stabilization

TRACTOR-TOWED STABILIZER

WS 220 | WS 250



THE POWERFUL SOLUTION FOR EFFICIENT SOIL STABILIZATION



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, harbor facilities, airports or industrial parks.

The robustly engineered microprocessor-controlled spraying system guarantees precision metering of the various additives such as water, emulsion, and foamed bitumen.

WIRTGEN SOIL STABILIZERS



TRACTOR-TOWED STABILIZERS

- > Working width up to 2,500 mm
- > Working depth to 500 mm

SOIL STABILIZERS AND COLD RECYCLERS (WR SERIES)

- > Working width up to 2,400 mm
- > Working depth to 560 mm

OVERVIEW OF HIGHLIGHTS

Perfectly Equipped

01 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.

02 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.

03 Efficient Water Metering

> Reliable Water Spraying System

Microprocessor-controlled spraying system including a heavy-duty water pump and flow meter for exact compliance with the predetermined quantity of water to be added

> Control Panel with Essential Information

Intuitive operation and monitoring of added water with the integrated (ISOBUS) display on the tractor or an optional touchscreen panel

04 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 Leveling Blade

Mechanically adjustable leveling 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.





01

03

02

04

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.

01



For Top Quality Load-Bearing Soils

Efficient combination – a JD tractor and a tractor-towed stabilizer from WIRTGEN



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

02 Flawless mixing results and perfect leveling are the hallmarks of the tractor-towed stabilizer.



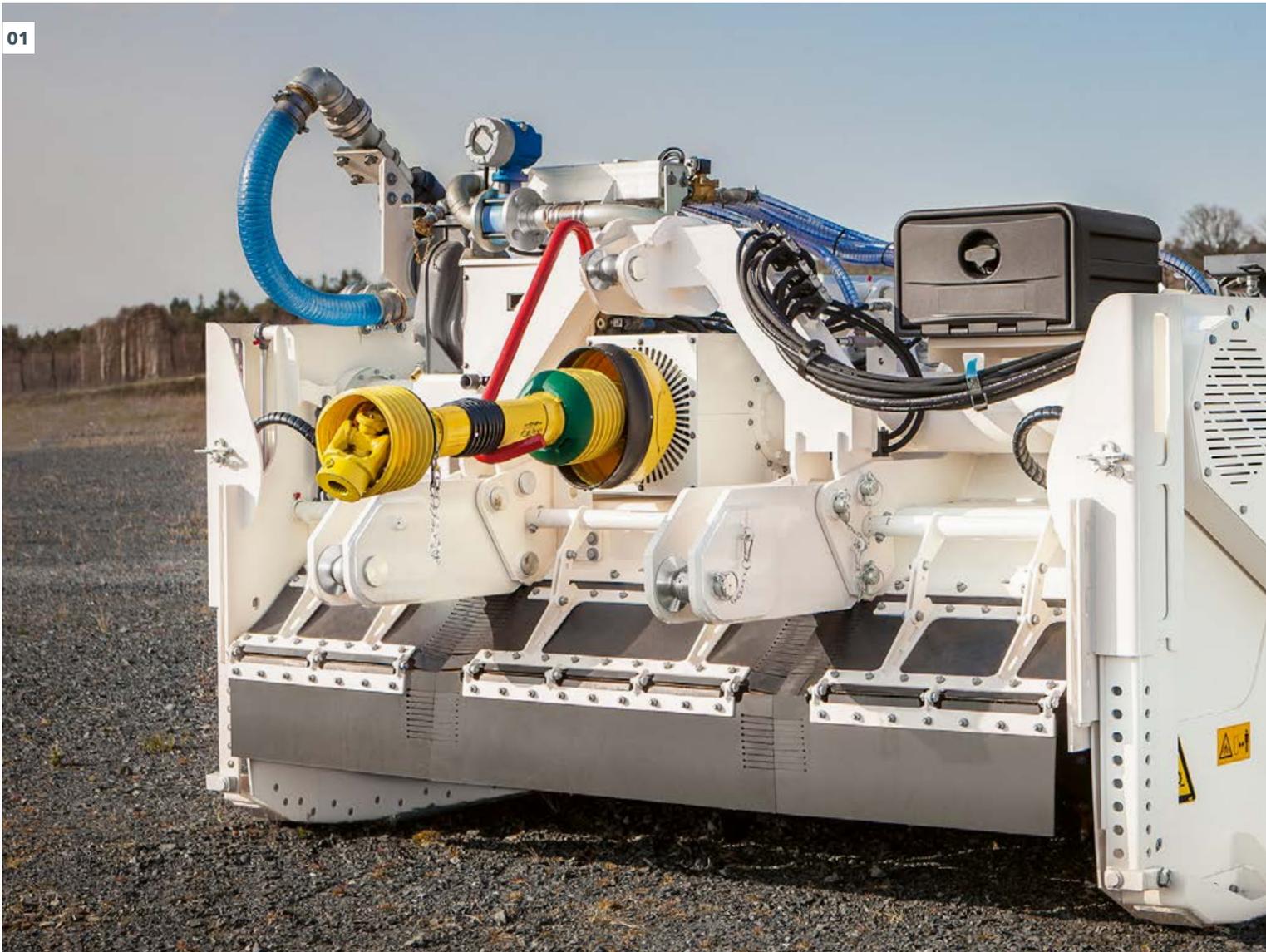
HOOKED UP QUICKLY AND EASILY

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.

01



Easy Connection

Fast and easy hitching to the tractor

Reliable Power Transmission

Heavy-duty power take-off

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

02 Hook up via three-point hitch, attach top link ...

03 ...connect driveshaft, and here goes!



VARIABLE STONE GUARD

01



Protection against Flying Stones

Height-adjustable 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.

02 - 03 The stone guard consists of fatigue-resistant hard rubber and can be adjusted to the stabilizer's current working depth.

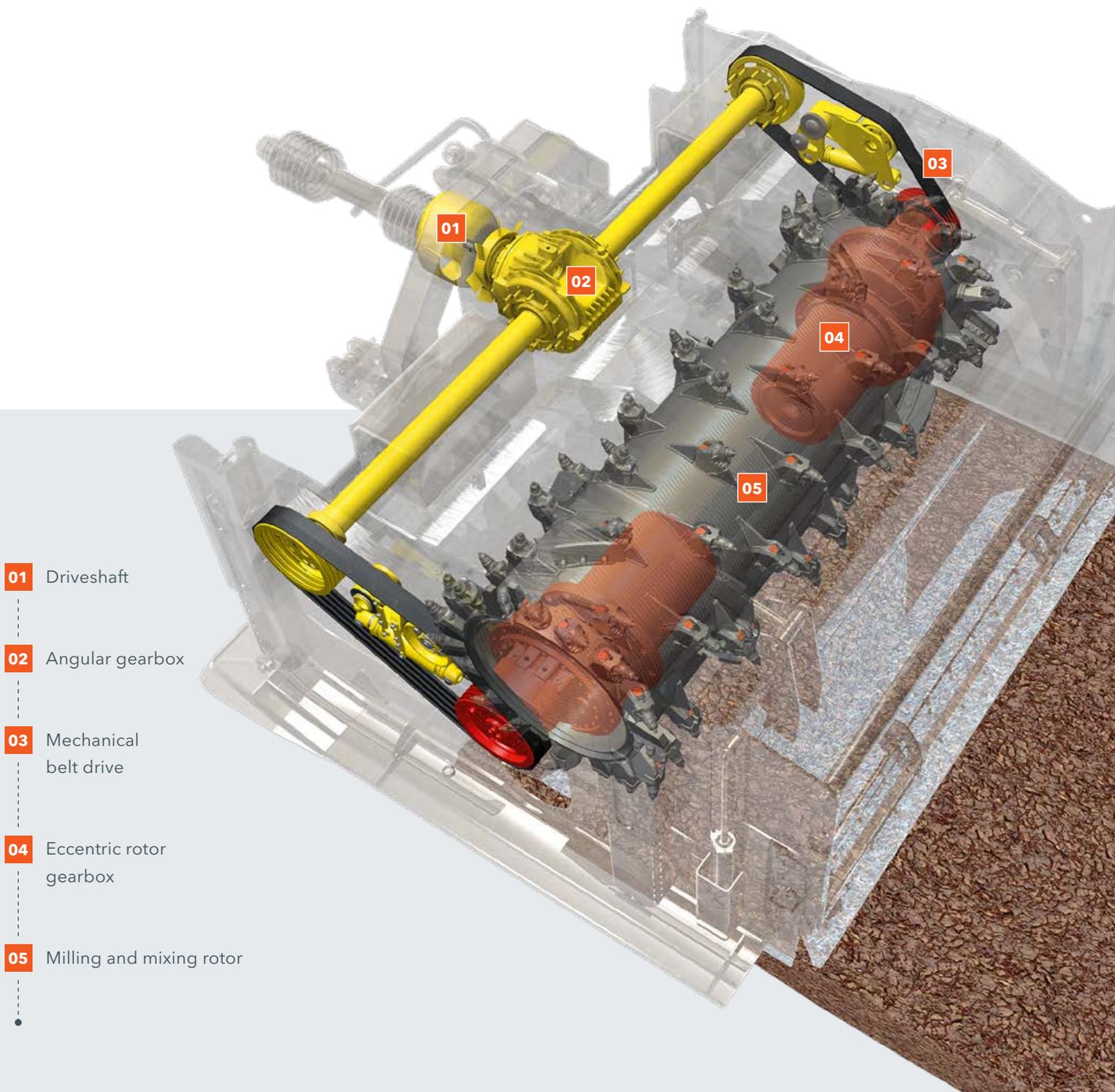


01 The stone guard is proving its worth in operation: no flying stones and less dust.

EFFICIENT MECHANICAL BELT DRIVE

High Efficiency
Mechanical belt drive

Lower Diesel Fuel Consumption
Smart drive train concept



- 01 Driveshaft
- 02 Angular gearbox
- 03 Mechanical belt drive
- 04 Eccentric rotor gearbox
- 05 Milling and mixing rotor

01 Powerful belt drive for full power at working depths of up to 500 mm.



01

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.

LOTS OF KNOW-HOW IN THE MILLING AND MIXING ROTOR

Wear-Resistance and Long Service Life

HT22 PLUS HD

Quick Pick Replacement

Pneumatic pick ejector

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 PLUS HD** for tough everyday operation on the construction site. With this 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 re-

placement, 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.

02



- 01 Ample storage space for tools or wearing parts.
- 02 The quick-change toolholder system **HT22 PLUS HD** significantly reduces operating costs of the machine.
- 03 If required, the innovative, extremely long-life **WIRTGEN WCC PLUS** flat picks with high impact-resistance can be fitted for working in rocky soils.
- 04 Basic model with welded toolholders HT9.



EFFICIENT WATER METERING

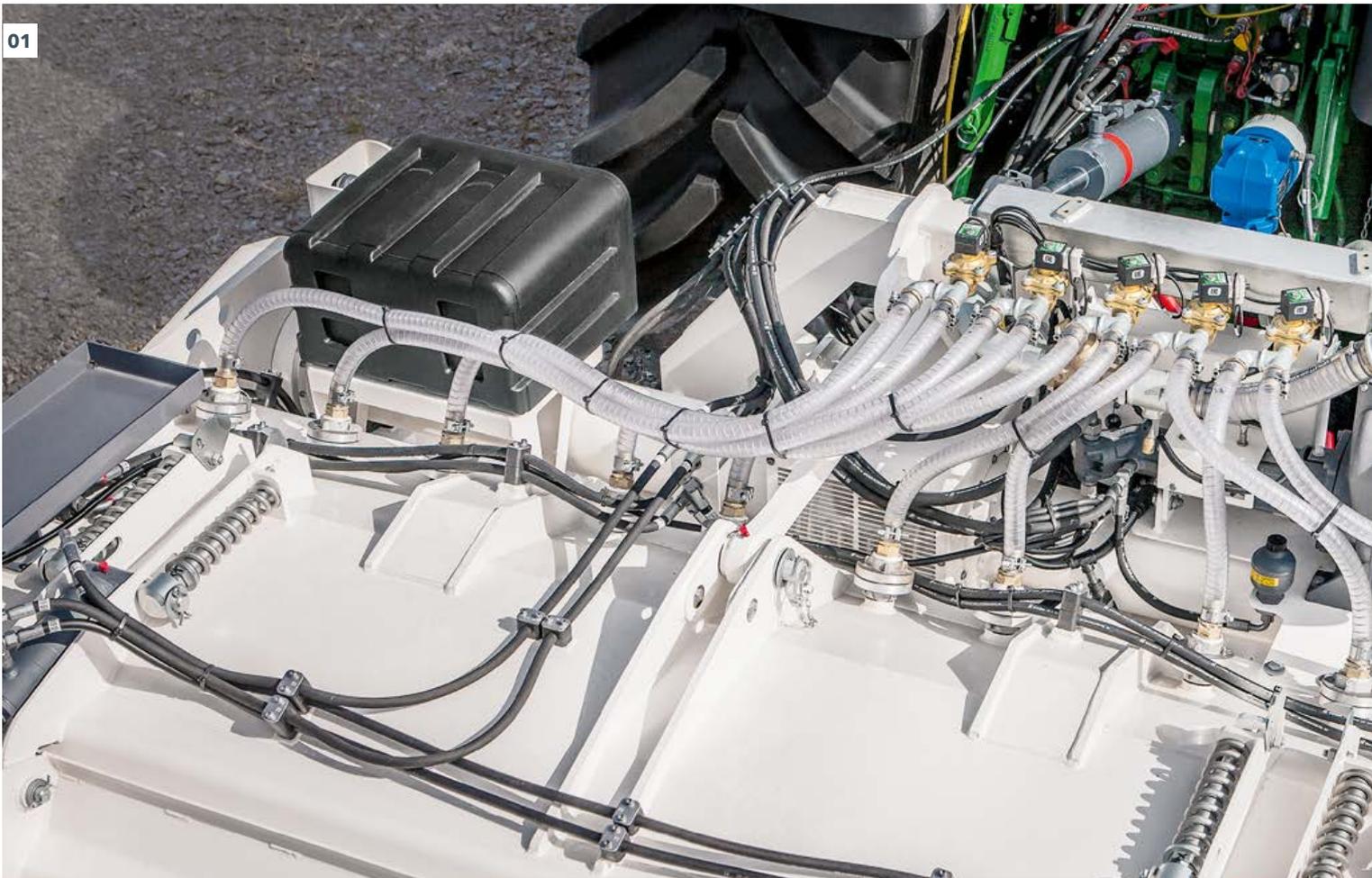
Reliable Water Spraying System

The ruggedly-engineered, microprocessor-controlled water spraying system includes a water filter, a centrifugal pump, a flow meter, and spraying nozzles and enables the precise addition of water (30 - 600 l/min) during the mixing process. The high-precision water spraying system, enables the setting of the required optimal moisture content for further soil treatment and enormously expands the range of possible applications.

Up to ten spraying nozzles (selectable in pairs) enable the realization of a variety of working widths. In addition, two different, easily exchangeable, nozzle types provide the ideal spraying pressure.

Control Panel With Essential Information

A separate, 8.4", touchscreen display for monitoring and metering water quantities is available for tractors that have no on-board display or a display that is too small. This makes entering parameters particularly convenient and easy.



Precise Water Metering

Microprocessor-controlled water spraying system

Everything under Control

Control panel with essential information

WIPT

The clear and logical layout of the menu enables the operator to check the process parameters and, if necessary, quickly and easily adjust the respective values.

If the tractor-towed stabilizer is connected up to the ISOBUS system of the tractor, the advance rate and milling depth values can be automatically taken into consideration in the metering process. Job data are recorded in the machine control system of the tractor-towed stabilizer and can also be reviewed on the display.



01 The water spraying system enables precise and constantly monitored water addition settings.

02 Easy input, checking, and adaptation of ...

03 ... process parameters via the 8.4" touchscreen display.

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.

01



Maximum Productivity

Side plates on skids

- 01** 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.
- 02** Combined with a mechanical retainer, the side plates guarantee a consistent working depth.
- 03** The hydraulically height-adjustable side plates allow the milling and mixing rotor to penetrate the soil immediately.
- 04** 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 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.

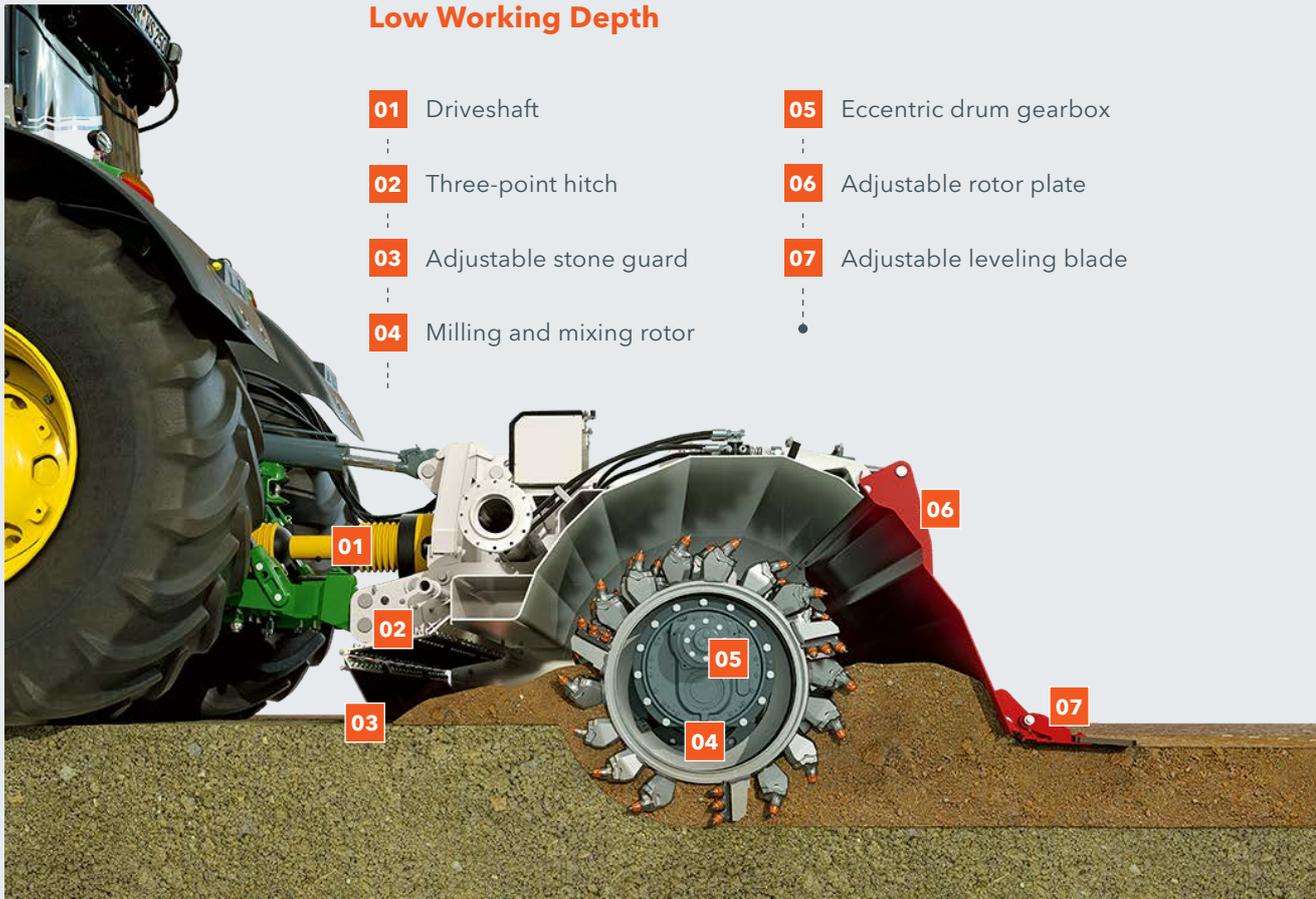


Also Ideal for Heavy Earthworks

Application-oriented mixing chamber

01 - 02 The rotor plate can be precisely adjusted to requirements.

Low Working Depth



01 Driveshaft

02 Three-point hitch

03 Adjustable stone guard

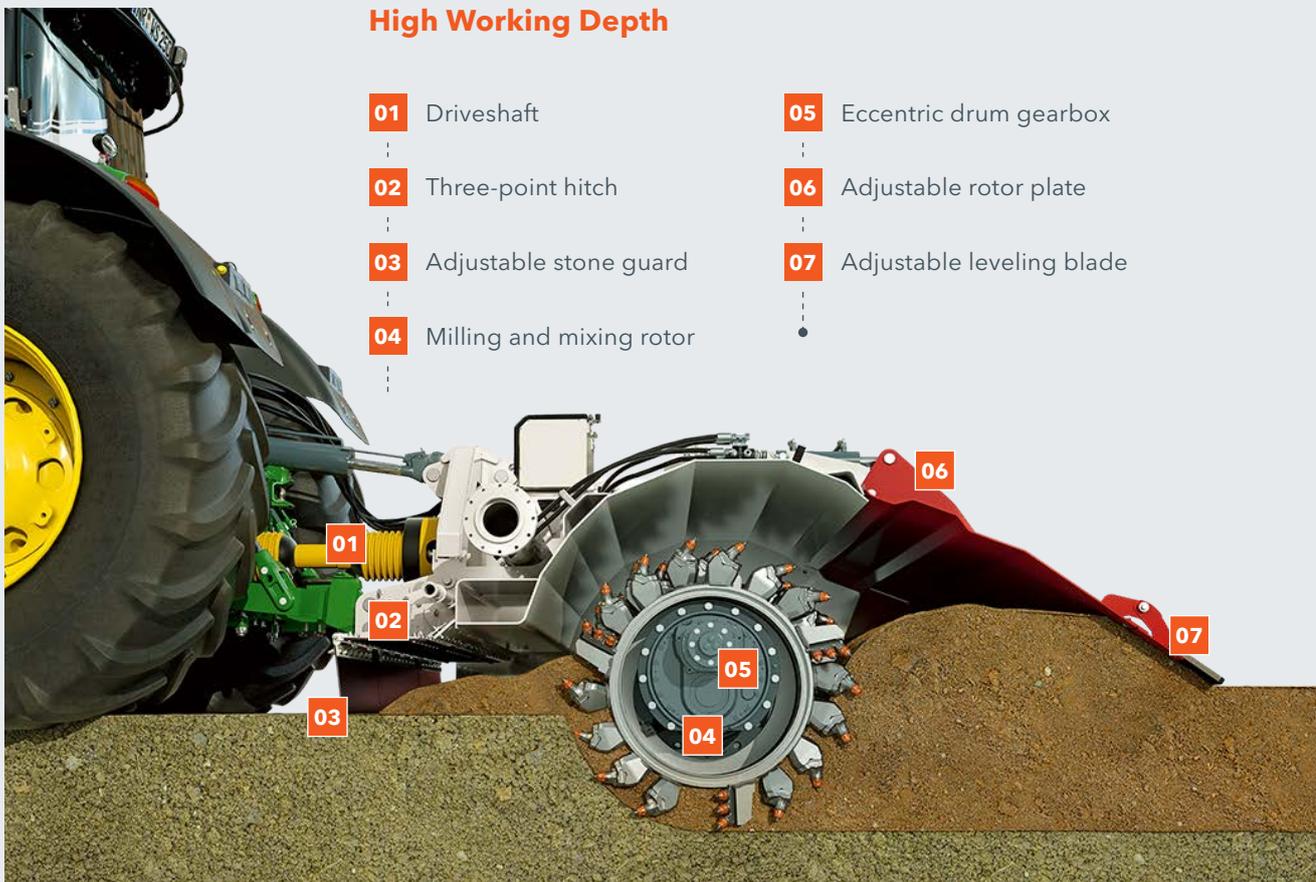
04 Milling and mixing rotor

05 Eccentric drum gearbox

06 Adjustable rotor plate

07 Adjustable leveling blade

High Working Depth



01 Driveshaft

02 Three-point hitch

03 Adjustable stone guard

04 Milling and mixing rotor

05 Eccentric drum gearbox

06 Adjustable rotor plate

07 Adjustable leveling blade

FINISHING WITH A PERFECT SURFACE



Perfect Finish

Following thorough mixing, the soil is leveled across the full width by the permanently pre-tensioned rotor plate which is fitted with an adjustable leveling 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 leveling blade to the rotor plate can additionally be adjusted manually to ensure optimum distribution of the material at all times.

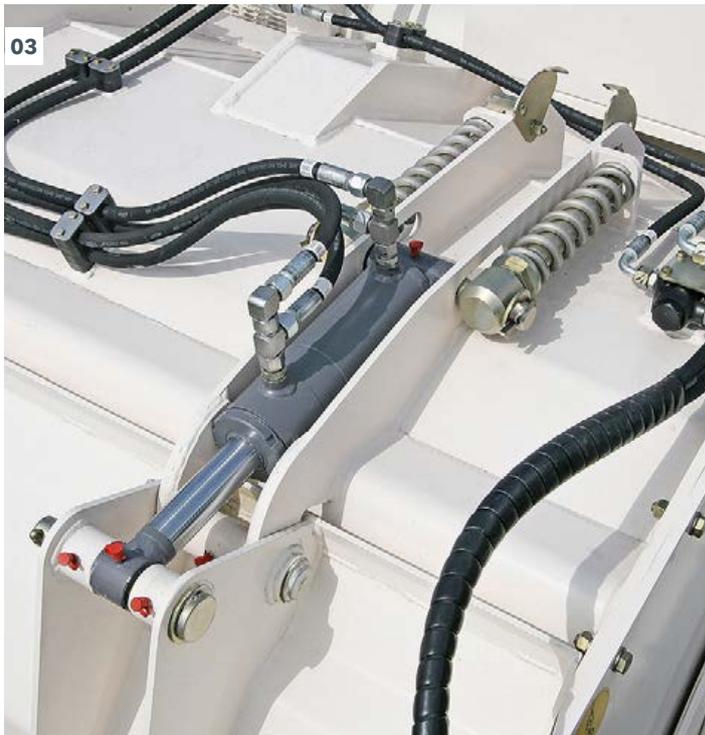
After compaction by suitable rollers, the stabilized soil meets the specified quality standards.

Homogeneous Mixing Quality

High contact pressure of the milling drum flap

Perfect Evenness

Adjustable leveling blade



- 01** The combination of rotor plate with spring assembly and adjustable leveling blade guarantees optimum results.
- 02** Adjustment of the leveling blade is effected mechanically via slotted holes.
- 03** Long spring assemblies ensure optimum contact pressure of the rotor plate.

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 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.



- 01 Soil improvement using lime reduces the water content in excessively moist or wet soil ...
- 02 ... in order to improve its compactability.



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 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.



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

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





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. 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.



| TECHNICAL SPECIFICATIONS | WS 220 | WS 250 |
|---|--|--------------------------|
| Milling and Mixing Rotor | | |
| Working width max. | 2,150 mm | 2,500 mm |
| Working depth | 0 - 500 mm | |
| 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 | | |
| Minimum engine power | > 180 kW / 245 PS | > 220 kW / 300 PS |
| Recommended engine power | > 220 kW / 300 PS | > 250 kW / 340 PS |
| Recommended traction drive | continuously variable 0 - v _{max} | |
| Max. output at the driveshaft | 280 kW / 381 PS | |
| Loading weight, front | 2,500 - 3,000 kg (1,800 kg for JOHN DEERE 8R series) | |
| Driveshaft | with internal toothing 1 3/4", 20 or 6 teeth ¹⁾ | |
| Driveshaft speed | 1,000 rpm | |
| Rear power lift | three-point, categories 3 and 4, DIN / ISO 730-1 | |
| Power Beyond- / - load-sensing hydraulic connection system ²⁾ | no | yes |
| ISO-Bus ²⁾ | no | yes |
| Additional Valves Required at Rear of Towing Vehicle (four in all) | | |
| Additional valve for rear rotor plate | yes | |
| Additional valve for front stone guard | yes | |
| Additional valve for upper hydraulic link (optional) | yes | |
| Additional valve with floating position for left and right side plates | yes | |

| TECHNICAL SPECIFICATIONS | WS 220 | WS 250 |
|--|----------|----------|
| Weight of Basic Machine | | |
| Empty weight with standard equipment, without fluids | 4,460 kg | 4,700 kg |
| Operating weight, CE ³⁾⁴⁾ | 4,540 kg | 4,780 kg |
| Maximum operating weight (incl. full range of equipment) | 5,100 kg | 5,700 kg |
| Additional Weight | | |
| Operator and Tools | | |
| > 4 pick containers | – | 100 kg |
| Optional Milling and Mixing Unit Instead of Standard | | |
| > Movable side plates on the milling and mixing rotor housing with milling depth stop | | 250 kg |
| > Additional skids, 250 mm wide | | 55 kg |
| Optional Milling and Mixing Rotor Instead of Standard | | |
| > Milling and mixing rotor FB2150 HT22 PLUS LA40 D22 with 98 picks | 60 kg | – |
| > Milling and mixing rotor FB2500 HT22 PLUS LA40 D22 with 106 picks | – | 130 kg |
| Optional Injection System / Addition of Binders Instead of Standard | | |
| > FB2150 water spraying bar, without pump and controller | 25 kg | – |
| > FB2500 water spraying bar, without pump and controller | – | 30 kg |
| > Single ESL water spraying bar: Spraying system with FB2500 water spraying bar (600 l/min), ISO 7241-1-A hydraulic coupling | – | 220 kg |
| > Accessories for single ESL water spraying bar (included in scope of delivery for the option) | – | 70 kg |
| Optional Additional Equipment | | |
| > Dimensionally stable 3" suction hose (4 m) for water with DIN 14322 - DN 75-B hose coupling | – | 15 kg |
| > Front push bar for pushing a tanker (40 mm / 50 mm lug) | – | 50 kg |
| > Hydraulic top link for trailer drawbar standard | 56 kg | 56 kg |
| > Driveshaft P600 | 42 kg | 42 kg |
| > Driveshaft P700 | 70 kg | 70 kg |

¹⁾ Driveshaft needs to be dimensioned in accordance with the tractor's engine power (length depending on equipment combination)

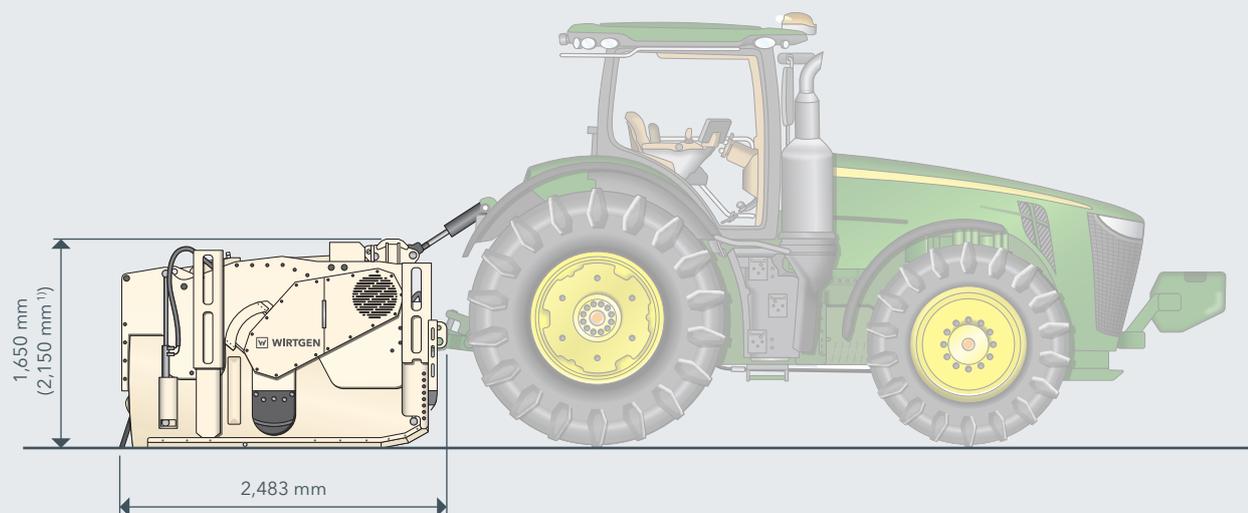
²⁾ Only with single ESL water spraying bar option

³⁾ Machine weight, half-full tanks, vehicle tool kit, excluding optional equipment

⁴⁾ Note: with P600 cardan drive shaft, without upper hydraulic link

SIDE VIEW WS 220 / WS 250

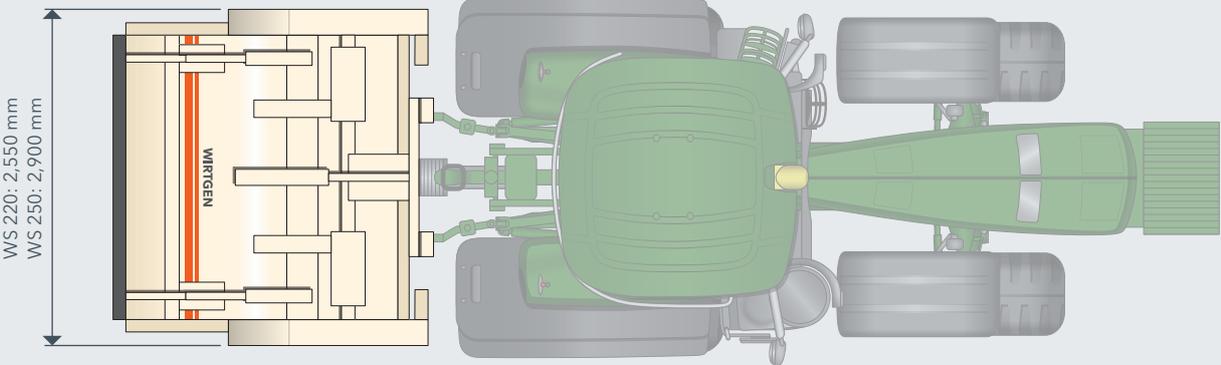
Configuration without water spraying system, with milling depth stop



¹⁾ with water spraying system

TOP VIEW WS 220 / WS 250

Configuration without water spraying system, with milling depth stop



| STANDARD EQUIPMENT | WS 220 | WS 250 |
|--|--------|--------|
| Basic Machine | | |
| > 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 without a milling depth stop | □ | □ |
| Milling and Mixing Rotor | | |
| > Milling and mixing rotor FB2150 HT9 LA35 D22 with 90 picks | □ | — |
| > Milling and mixing rotor FB2500 HT9 LA35 D22 with 96 picks | — | □ |
| Machine Control and Leveling 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 leveling blade with adjustable spring pre-loading | ■ | ■ |
| > The stone guard is adjusted hydraulically from the tractor | ■ | ■ |
| > Mechanical drive via tractor drive shaft (drive shaft speed 1,000 rpm), bevel gearbox, belt drive on both sides, each with a four-groove power belt, automatic belt tensioner and spur gearbox | ■ | ■ |
| 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 | □ | □ |

| OPTIONAL EQUIPMENT | 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"/> |
| > Additional skids, 250 mm wide | <input type="checkbox"/> | <input type="checkbox"/> |
| Milling and Mixing Rotor | | |
| > Milling and mixing rotor FB2150 HT22 PLUS LA40 D22 with 98 picks | <input type="checkbox"/> | — |
| > Milling and mixing rotor FB2500 HT22 PLUS LA40 D22 with 106 picks | — | <input type="checkbox"/> |
| > Milling and mixing rotor FB2150 HT22 PLUS LA40 with 74 flat picks WCC PLUS and 24 D22 round-shank picks | <input type="checkbox"/> | — |
| > Milling and mixing rotor FB2500 HT22 PLUS LA40 D22 with 82 picks WCC PLUS and 24 D22 round-shank picks | — | <input type="checkbox"/> |
| Injection System / Addition of Binders | | |
| > FB2150 water spray bar, without pump and controller | <input type="checkbox"/> | — |
| > FB2500 water spray bar, without pump and controller | — | <input type="checkbox"/> |
| > Single ESL: spraying system with FB2500 spray bar for water (600 l/min), ISO 7241-1-A controller connection | — | <input type="checkbox"/> |
| > Additional spraying system control screen | — | <input type="checkbox"/> |
| Machine Control and Leveling System | | |
| > Digital milling depth display, left or right | <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"/> |
| > Linkage device for John Deere tractors with additional hydraulic top link | <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"/> |
| > Hydraulic top link for trailer drawbar standard | <input type="checkbox"/> | <input type="checkbox"/> |
| > Pneumatic hammer with pick extractor/insertor | <input type="checkbox"/> | <input type="checkbox"/> |
| > Dimensionally stable 3" suction hose, 4 m for water with a DIN 14322 - DN 75-B hose coupling | — | <input type="checkbox"/> |
| > Connecting rod for pushing a tanker (40 mm / 50 mm lugs) | — | <input type="checkbox"/> |

■ = Standard equipment

■ = Standard equipment, can be replaced with optional equipment if desired

□ = Optional equipment

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