

## Original WIRTGEN CUTTING TOOLS FOR COLD RECYCLERS AND SOIL STABILISERS

**CLOSE TO OUR CUSTOMERS** 

# ORIGINAL WIRTGEN CUTTING TOOLS FOR COLD RECYCLERS AND SOIL STABILISERS

EXTREME IMPACT RESISTANCE; HIGH SHANK BREAKAGE RESISTANCE, BEST POSSIBLE TOOLHOLDER PROTECTION IN EVERY APPLICATION CUTTING TECHNOLOGY HAS ALWAYS TAKEN A TOP PRIORITY IN THE WIRTGEN GROUP. THAT'S WHY WE ALSO PAY SPECIAL ATTENTION TO CONSTANT FURTHER DEVELOPMENT OF THIS KEY TECHNOLOGY IN THE FIELD OF COLD RECYCLING MACHINES AND SOIL STABILISERS.

- > THE GENERATION Z<sup>2</sup> IS THE ALL-ROUNDER AMONG THE ROUND-SHANK PICKS FOR COLD RECYCLING AND SOIL STABILISATION. IT IMPRESSES WITH PRODUCT PROPERTIES SUCH AS THE HIGH BREAKAGE RESISTANCE OF ITS CARBIDE TIP AND THE OPTIMISED WEAR PLATE WITH ITS UNIQUE GROOVED PROFILE.
- > THE WCC PLUS MILLING TOOL IS UTILISED IN THE STABILISATION OF COHESIVE SOILS AND IS THE IDEAL TOOL IN SITUATIONS WHERE ENORMOUS IMPACT FORCES FROM LARGE PIECES OF ROCK CAN BE EXPECTED.

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## THE WIDE RANGE OF DEMANDS IN COLD RECYCLING AND SOIL STABILISATION

#### ENVIRONMENTALLY FRIENDLY COLD RECYCLING

Cold recycling and granulation are also internationally established processes in the construction industry. Damaged asphalt pavements comprising widely differing types of stone and an underlying gravel layer are milled off and, after the addition of binding agents, are typically mixed to produce a homogeneous mix that is repaved in-place.

#### DEMANDS ON MILLING TOOLS

- Uniform milling process to avoid oversized grains and ensure high-quality results
- High milling performance and minimal wear to assure optimum efficiency, even in hard, abrasive rocks
- Compliance with the specified grading curve to ensure permanent stability of the new base layer
- Homogeneous mixing of the binding agents to ensure high adhesion between the individual grains and thus provide maximum load bearing capacity



#### HIGH-PERFORMANCE SOIL STABILISATION

In use around the globe, soil stabilisation is the ideal solution for transforming sub-bases with insufficient load bearing capacity into road bases suitable for paving and compaction. In the process, a wide variety of soil types may have to be processed, ranging from 'highly cohesive' and 'interspersed with coarse stone' to 'abrasive'.

#### DEMANDS ON MILLING TOOLS

- Effective splitting and crushing of the soil to optimise the effectiveness of binding agents
- Uniform distribution and homogeneous mixing of binding agents and, where appropriate, water to produce a highly durable paving mix
- Maximum cutting performance even in tough, hard ground, to ensure high productivity and low fuel consumption
- > High impact resistance to assure high machine productivity rates on ground interspersed with large stones
- High wear resistance in abrasive, cohesive soils to ensure maximum cost-efficiency



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The universal cutting tool for cold recycling and soil stabilisation **GENERATION Z<sup>2</sup> PICKS** 

**GENERATION Z<sup>2</sup>** round-shank picks are distinguished by unique product properties that play a significant role in the reduction of operating costs. Thanks to their adapted shank design and optimised carbide tip geometry with a reinforced carbide base, the round-shank picks of this product line are designed to withstand high impact loads and are therefore the ideal solution for recycling and soil stabilisation applications. The relatively large steel body volume compared to conventional roundshank picks and the heavy duty wear plate maximise the service life of the picks and provide optimal protection for the upper part of the toolholder, especially in applications involving abrasive materials.

### Optimised carbide mix, specially formulated for applications in which high impact loads are expected.



In combination with the reinforced carbide base, the carbide mix with a high cobalt content of 7 % ensures outstanding durability of the carbide, even in situations with extremely high impact loads. In view of these unique properties, the universal picks of the GENERATION Z<sup>2</sup> series are the ideal choice for all cold recycling and soil stabilisation applications.

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# Round-shank picks GENERATION Z<sup>2</sup>

#### **GENERATION** Z<sup>2</sup>

The **GENERATION**  $Z^2$  universal round-shank picks also have a positive effect on the wear of the upper part of the toolholder. The innovative centring function reduces lengthwise wear. The service life can be increased by over 25 %, especially in the case of demanding applications such as pulverisation.

- Newly developed wear plate with a grooved profile provides validated improvement of centring and pick rotation.
- > Carbide assures long-term cutting capability and guarantees best possible carbide utilisation.
- > **The better centring and rotation** of the pick leads to a more than 25 % increase in the service life of the toolholder.



Self-forming of the toolholder centring profile over time through the use of GENERATION **Z**<sup>2</sup> round-shank picks

- W8/22Z<sup>2</sup> with flat toolholder contact surface
- W8/22Z<sup>2</sup> with pronounced centring profile



\* application-dependent

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### Persuasive arguments: ROBUSTNESS AND RELIABILITY

#### PERSUASIVE PERFORMANCE

- > Improved service life of the upper parts of toolholders due to the unique grooved profile on the underside of the wear plate of the GENERATION Z<sup>2</sup> round-shank picks
- > High operational reliability due to outstanding impact resistance
- Higher productivity especially when mixing abrasive materials

#### CARBIDE TIPS WITH MAXIMUM FRACTURE TOUGHNESS

An optimised carbide mix and adapted tip geometry achieve a higher fracture toughness of the carbide tip.

STEEL BODY WITH OPTIMISED WEAR VOLUME

In the case of abrasive materials, the steel body can be a limiting factor when it comes to full utilisation of round-shank picks. The increased wear volume of **GENERATION Z**<sup>2</sup> picks enables almost complete utilisation of the carbide.





In contrast to conventional cutting tools, **GENERATION Z<sup>2</sup>** picks have a repositioned clamping sleeve bearing at the lower end of the pick shank that improves its fracture toughness.

#### HEAVY DUTY WEAR PLATE WITH OPTIMISED GEOMETRY

The heavy duty wear plate protects the toolholder against wear caused by abrasive milled material. What's more, the flat wear plate geometry promotes improved rotation of the **GENERATION Z**<sup>2</sup> round-shank picks.

#### HEAVY DUTY VERSION OF THE FIELD-PROVEN WIRTGEN CLAMPING SLEEVE

The heavy duty clamping sleeve ensures reliable longterm clamping of the pick in the toolholder bore.

#### > UNIQUE GROOVED PROFILE WITH INNOVATIVE CENTRING FUNCTION

Depending on the application, the special grooved profile with its innovative, improved centring function increases toolholder service life by more than 25 %. When using **GENERATION** Z<sup>2</sup> round-shank picks, a centring profile works itself into the pick contact surface of the toolholder. This means that the advantage of **GENERATION** Z<sup>2</sup> can also come into play when using conventional toolholders. EXTREMELY HIGH FRACTURE TOUGHNESS OF THE CARBIDE CUTTING EDGE

 CARBIDE PROTECTIVE ELEMENTS PROVIDE INCREASED WEAR-RESISTANCE AND FRACTURE TOUGHNESS

OPTIMISED WEAR VOLUME IN THE SHOULDER SECTION

1015

mile

> SOLID CHIP-BREAKING WEB

> RELIABLE HT22 INTERFACE



# The specialists for stony ground WCC PLUS MILLING TOOLS

Due to their tool geometry and construction materials, WCC **PLUS** milling tools are perfect for mixing cohesive soils interspersed with large rocks or boulders. They feature extremely wear-resistant carbide cutting edges that, due to the exceptional strength of the material, possess extreme fracture resistance and are therefore resistant to impacts. Depending on the application, WCC **PLUS** milling tools are a useful supplement to your existing programme of round-shank picks with conventional carbide tips.

#### Properties of the carbide tips: GENERATION Z<sup>2</sup> and WCC PLUS milling tools



The extremely tough carbide cutting edges of WIRTGEN Compact Carbide PLUS (in short, WCC PLUS) milling tools make them particularly suitable for stabilising cohesive soils interspersed with large pieces of rock. Choosing WCC PLUS tools as an alternative to traditional round-shank picks makes very good sense in such situations.

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### Persuasive arguments: PRODUCTIVITY AND LONG LIFE



#### PERSUASIVE PERFORMANCE:

- Increased machine productivity thanks to no longer necessary or fewer tool changes
- Lower operating costs as a result of lower maintenance overheads
- > Highest impact resistance even in the event of large pieces of rock

#### EXTREMELY HIGH FRACTURE TOUGHNESS OF THE CARBIDE CUTTING EDGE

Thanks to the enormous strength of the cutting edges, which are able to withstand even the hardest impacts, the high fracture toughness of the carbide edges is a particular advantage when working in ground with large pieces of rock.

#### CARBIDE PROTECTIVE ELEMENTS PROVIDE INCREASED WEAR-RESISTANCE AND FRACTURE TOUGHNESS

Thanks to the wear-resistant carbide protective element, the milled material is effectively deflected, which considerably reduces wear on the **HT22** *PLUS* toolholder.

#### OPTIMISED WEAR VOLUME IN THE SHOULDER SECTION

The relatively high wear volume in the shoulder section of the WCC **PLUS** milling tool increases the service life of the HT22 toolholder and assures maximised use of the carbide.

#### > SOLID CHIP-BREAKING WEB

The potential service life of the tool is extended thanks to the solid chip-breaking web, which protects the carbide cutting edge considerably longer against washouts.

#### > RELIABLE HT22 INTERFACE

The reliable HT22 interface guarantees low-maintenance and reliable usage of WIRTGEN WCC **PLUS** milling tools.



#### WCC PLUS performance evaluation



#### Comparable machine performance with up to 30 % lower operating costs

> When stabilising, the WCC **PLUS** tool creates a penetration area comparable to that delivered by milling drums fitted with conventional picks. Depending on the application, this results in comparable fuel consumption and a reduction of operating costs by up to 30 %.



## **RECOMMENDED USES**

#### WCC PLUS AS AN IDEAL COMPLEMENT TO GENERATION Z<sup>2</sup> MILLING TOOLS \_ \_

Applications		Machine type*
I	Cold recycling and pulverising Examples in photos 1 and 2	WR 2000, WR 200, WR 200 XLi, WR 2400, WR 240, WR 2500 S, WR 250
	Soil stabilisation Examples in photos 3 and 4	WR 2000, WR 200, WR 200 XLi, WR 2400, WR 240, WR 2500 S, WR 250, WS 220, WS 250



\* Table also applies for all 'i' version machines

\*\* WIRTGEN Cold recyclers and soil stabilisers are fitted with this type of round-shank pick in the factory.

#### \_ CUTTING TOOLS FOR A WIDE RANGE OF APPLICATIONS \_ \_ \_

#### COLD RECYCLING AND PULVERISING APPLICATIONS

In the course of road rehabilitation projects, the round-shank picks penetrate below the base layer or even deeper into the ground. Depending on the structure of the road surface and the materials/additives used, it must be assumed that a certain proportion of abrasive (grinding) stone with low grain size and sometimes tough binder course materials will be encountered. A carbide tip with higher cutting capability (e.g. W6) can be advantageous when cutting such layers in which high cutting forces are the rule. The size of the carbide tips used should also be appropriately adjusted as the abrasiveness of the material increases. The use of a cylindrical variant of the carbide tip

(e.g. W1-13) is advisable in the case of medium-sized rocks or clods of soil.

#### SOIL STABILISING APPLICATIONS

Cohesive soils/milled materials generally contain abrasive (grinding) materials that flow around the carbide tip and the pick head during the cutting process. In such cases, wear to the steel body dominates, thereby limiting the service life of the picks. Here, the carbide tip plays an important role by deflecting material away from the steel body (pick head) and reducing its wear.

In the case of soils interspersed with small stones, it is advisable to use round-shank picks with a cylindrical tip (or a W6C tip). In this case, the fracture toughness of the carbide tip is the decisive factor, as suddenly occurring high impact forces must be deflected. When the cutting tools are expected to encounter extreme impact stresses due to massive pieces of rock, the upper part of the quick-change toolholder system can be replaced to enable the use of the WCC **PLUS** milling tool. Thanks to its enormous resistance to impacts, this brings considerable advantages when handling large pieces of stone.

> Asphalt layers with underlying gravel layer



> Extremely abrasive supplementary gravel



> Highly cohesive soil interspersed with stones



> Gravelly soil with a high proportion of abrasive stone



## HT22 QUICK-CHANGE TOOLHOLDER SYSTEMS



loading.

\_\_\_\_\_ HT22 PLUS HD UPPER PART\_\_\_

#### PERSUASIVE PERFORMANCE

- > Maximised cost/performance ratio thanks to ideally matched system components. The centring recess pressed into the upper part of the HT22 PLUS HD stabilises the GENERATION Z<sup>2</sup> round-shank pick in its optimum position and thus promotes rotary motion.
- Reduced shear stress thanks to ideal application of force in the upper part of the HT22 PLUS HD in conjunction with GENERATION Z<sup>2</sup> round-shank picks due to better centring and support.
- > Better bottom part protection due to larger wear volume in the shoulder area of the upper part of the toolholder ensures longer service life of the individual bottom parts and the entire milling drum.



#### MILLING AND MIXING ROTORS WITH THE \_HT22 QUICK-CHANGE TOOLHOLDER SYSTEM \_



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## INNOVATIVE, ERGONOMICALLY DESIGNED TOOLBOX



The stylish toolbox impresses with considerably improved carrying comfort. Its ergonomically designed handle enables it to be carried comfortably over longer distances. While the colour-coded sticker enables quicker selection of the right picks, the side window provides a clear view of exactly what's inside.



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The window in the side of the box makes it easier to see exactly what's inside. IN THE DEVELOPMENT OF WIRTGEN GROUP ORIGINAL SPARE PARTS, WE DRAW ON DECADES OF REAL-WORLD EXPERIENCE FROM CONSTRUCTION SITES AROUND THE GLOBE.

They are perfectly tailored to the requirements of our high-performance machines and enable them to deliver the efficiency and productivity you need.

With WIRTGEN GROUP genuine spare parts, you can always be certain that you are doing the best for your fleet. Even short machine downtimes cost you time and money. Put your trust in what only original spare parts produced using state-of-the-art manufacturing processes can offer you - top quality for maximum reliability and a long service life.

#### **PROMPT DELIVERY**

Our local service specialists provide in-depth advice during the purchasing process and ensure that your order is processed smoothly and quickly. Thanks to our well-stocked worldwide spare parts warehouses and our sophisticated logistics system, we will immediately and reliably deliver the genuine part or parts you need anywhere in the world, even in the event of longer import times. The reliable WIRTGEN GROUP spare parts service will even reach you at the most remote construction sites.

WIRTGEN GROUP original spare parts - maximum reliability, long service life and rapid availability.



## WIRTGEN GROUP original spare parts ONLY THE ORIGINAL ARTICLE WILL FULFIL YOUR EXPECTATIONS.

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#### YOUR BENEFITS

- > HIGHEST QUALITY: For a long machine life
- > IDEAL AVAILABILITY: Rapid delivery thanks to high storage capacities and the very latest logistics
- > EXPERT ADVICE: Service specialists with sound technical knowledge
- > FIRST-CLASS SUPPORT: Fast, reliable order processing
- > IDEALLY SORTED: Extensive, thematically coordinated service and maintenance packages

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