

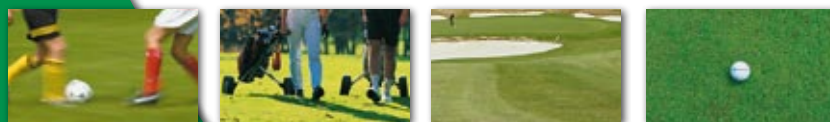


# **Wiedemann**

*Deep spiking  
Deep aerating  
Spiking  
Aerating  
Slitting  
Verticutting  
Spring-tining  
Sand brushing  
Overseeding*



## **TERRA COMBI**



## **TERRA COMBI**

Every player appreciates nice, wear-resistant turf. Various measures are required for achieving that target, such as the location-specific selection of seed and fertilizers and the right systematic turf maintenance.

Using the **TERRA COMBI** you can perform all necessary maintenance measures, which are needed for healthy growth of roots and an optimal turf. The **TERRA COMBI** will fit your budget, since it has been designed as a modular system. A universal frame allows the mounting of a large variety of working tools and rear attachments. Because of this, you can use the basic machine during the whole growth season and you only have to change the tools or rear attachments, according to the desired maintenance jobs. If your budget is not large enough to purchase the complete maintenance line at once, no problem! Once you have invested in the cost-efficient basic machine, you can purchase the appropriate supplementary tools and rear attachments in the subsequent years, according to your needs and financial resources. This way you can customize and expand the **TERRA COMBI** turf maintenance system step by step to suit your specific requirements.

**TERRA COMBI** – *the optimal maintenance of turf at a reasonable cost.*

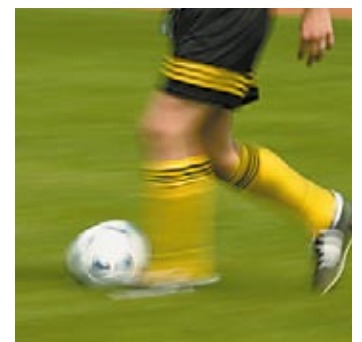
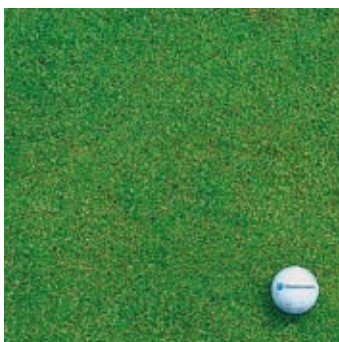
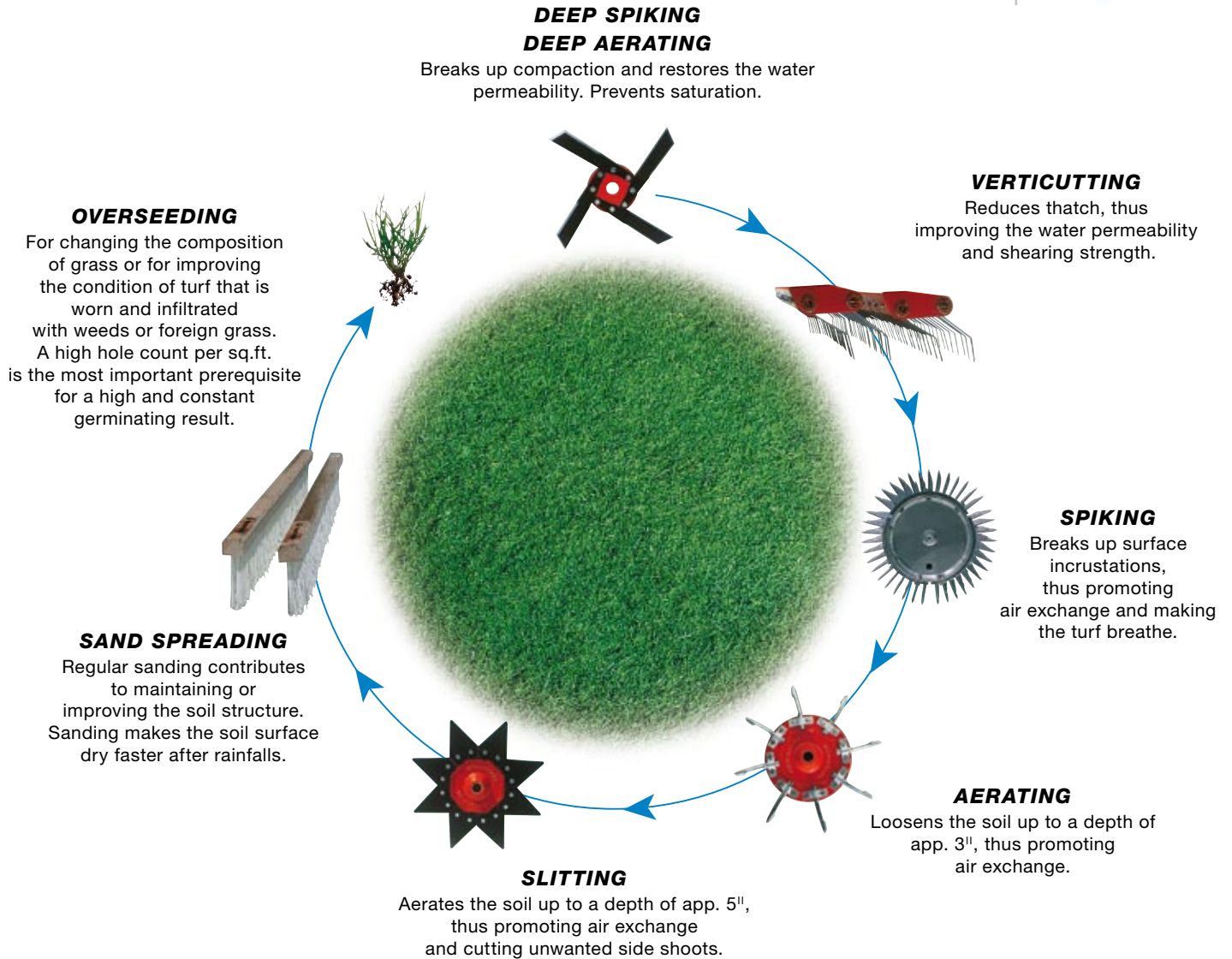


# Turf Maintenance and Regeneration

In spite of various maintenance measures many turfs are in poor condition. This is often due to compaction at a depth of 4" – 8" impeding the water permeability, thus leading to saturation. When this occurs, the root cannot breathe anymore and the growth of the turf is obstructed. For this reason the **TERRA COMBI** turf maintenance system comprises a special heaving rotor for breaking up soil compaction.



**TERRA COMBI** – the complete turf maintenance system from deep spiking up to overseeding.

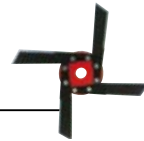


# The Tools of the **TERRA COMBI**

The **TERRA COMBI** has been designed as a modular system. The universal frame allows the mounting and use of a large variety of working tools and rear attachments. During the development stage the individual tools underwent rough permanent tests. The various high-quality materials of the tools were selected carefully according to the conditions of operation. Easy serviceability, low maintenance requirements and a faster exchange of the tools are further benefits of the **TERRA COMBI**.

Working with the **TERRA COMBI** is extremely easy and highly productive, since all tools are ground-driven. Safety is of utmost importance to Wiedenmann. The standard plastic hood covers all moving parts and thus helps prevent accidents. Some parts are supplied only in specific working widths. Please refer to the technical data.

## DEEP SPIKING



A frequent reason for a poor quality turf is soil compaction in the depth range of 4" up to 8". This soil compaction leads to saturation, which in turn affects the air circulation of the soil and prevents healthy growth of the roots. Maintenance measures such as verticutting, shallow aerating, or overseeding often do not produce the result desired since the underlying cause has not been removed.

The main prerequisites for healthy growth of roots are regular deep spiking and deep aerating. By breaking up compactions the roots can penetrate deeper into the ground and thus will make better use of water and nutrients. The water and air circulation will be improved.

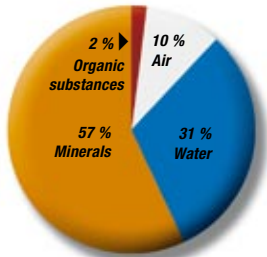
The **TERRA COMBI** utilizes heaving rotor and special knives to loosen and slit the soil up to a depth of 8". Depending on the extent of compaction and the ground conditions you can choose between low or high heave knives. The distance between the single knife rows amounts to app. 8". In case of severely compacted soils the standard ballast frame can be loaded with additional weights. Upon request a hydraulic weight transfer system is available (only for **TERRA COMBI** with working width of 63" and 83").

**TERRA COMBI with heaving rotor – the basis for successful maintenance measures.**

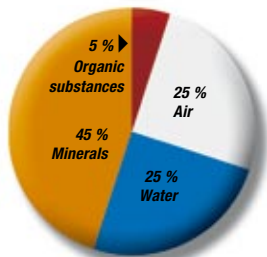
Heaving rotor with high heave knives



1.



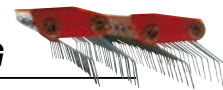
2.



1. Compacted soil: the share of air pores amounts to just 10 %.

2. Loosened soil: the share of air pores amounts again to the ideal rate of 25 %.

## VERTICUTTING

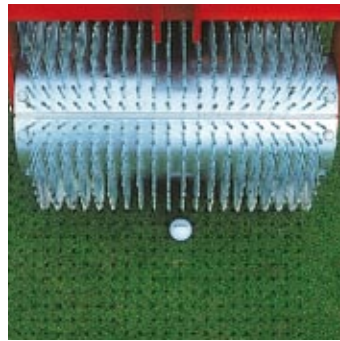


Dead plant parts, leaves or surface roots form thatch at the soil surface. Thatch, which is identifiable as a brown layer between soil and shoots of grass, reduces the water permeability and the air exchange. The **TERRA COMBI** with the intensive, parallelogram-suspended verticutting harrow removes this problem quickly and efficiently. By utilizing the high driving speed from 5 up to 7.5 mph the verticutting tines begin vibrating. These aggressive vibrations pull up the thatch from the turf and deposit it on the surface. The verticutting depth is adjusted precisely through depth wheels. The verticutting tines are placed in 4 rows to ensure that there is enough free space for an unblocked verticutting operation between the single tines.

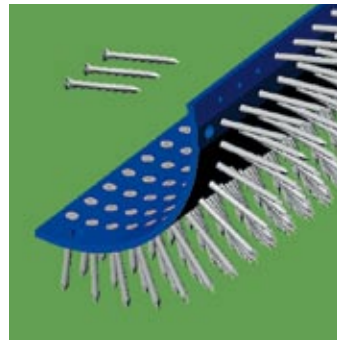
**TERRA COMBI with verticutting harrow – the cost-efficient solution for removing thatch at a high productivity rate.**



**TERRA COMBI 83"**



Square hole spacing of 1"



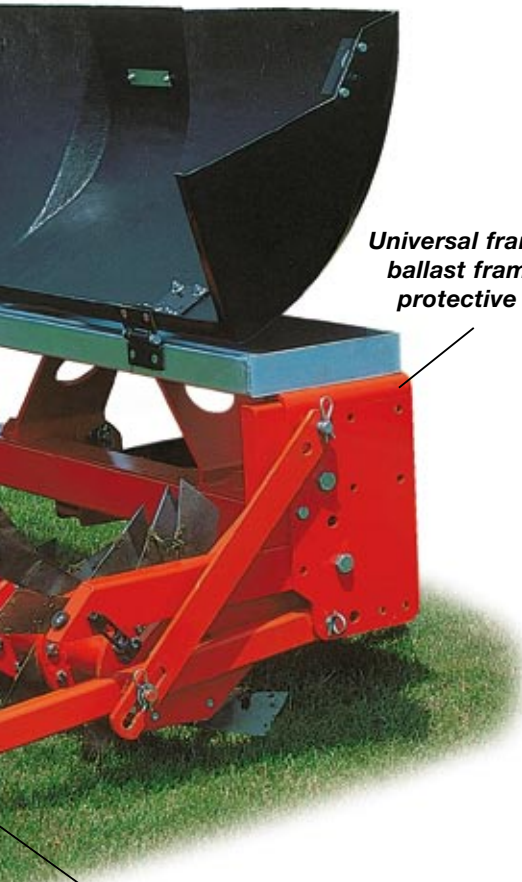
Easy exchange of tines



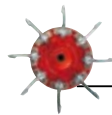
## SPIKING

Healthy turf needs air. This aeration is ensured by regular spiking. Incrustations at the surface are broken up and surface thatch is cut through, thus promoting the air exchange. Problems with algae are also removed this way. The spiked roller of the **TERRA COMBI** is ideally suitable for this task. The spiked roller is equipped with solid tines of 3/16" x 2 1/2", which achieve a square hole spacing of 1", yielding unbeatable 150 holes per sq.ft. – 150 instances of air per sq.ft. for your turf. Other hole spacings are possible as well. To achieve this, just remove the shells from the roller pipe, equip them (tool free) with the desired number of tines, and remount them. This allows square hole spacings of 2" or 4". Other hole spacings can be achieved easily as well. Due to the especially flexible attachment of the 3/16" solid tines, turns will not damage the turf. The **TERRA COMBI 53"** is equipped with a one-piece spiked roller, whereas the **TERRA COMBI 63"** and **TERRA COMBI 83"** are equipped with 3 or 4 spiked rollers, depending on the model (width) of machine. To allow these spiked rollers to ideally adapt to rough grounds, one of them is floating on the **TERRA COMBI 63"** through an adjustable spring, whereas there are 2 spiked rollers in floating position on the **TERRA COMBI 83"**. The working depth of the solid tines can be adjusted progressively by means of the optional depth wheels. The spiked roller can also be applied in connection with the combined overseeding unit.

**TERRA COMBI with spiked roller – makes your turf breathe.**



Universal frame with ballast frame and protective hood



## AERATING / SLITTING

Intensive play activities and the employment of maintenance machines in unfavorable weather conditions cause compaction zones at the soil surface. The coarse pores in the soil decrease, affecting water and air circulation. The biological activity grows weak. The turf suffers. The **TERRA COMBI** with hollow tines (Ø 1") loosens the soil and eliminates these problems up to a maximum working depth of 3". The hole spacing is about 8" in the direction of motion and about 4" at right angles to the direction of motion. Instead of the hollow tines you can also mount slitting knives with a length of 3" or 5" on the same cast-iron disc elements. The slitting knives aerate the soil up to a depth of 3" or 5" respectively and at the same time cut unwanted side shoots. In case of particularly hard ground conditions the **TERRA COMBI** can be loaded with additional weights on the ballast frame or via the optional hydraulic weight transfer system. Select between a rigid axle for level surfaces or a floating axle with 2 disc elements for optimal adaptation to uneven grounds. To ensure a steady load of the single segments even under uneven surface conditions, there is a standard hydraulic equalizing system in connection with the floating suspension of the single elements. The single hydraulic cylinders interact through a self-contained hydraulic system.

Rear roller

Hydraulic equalizing system



**TERRA COMBI with hollow tines**

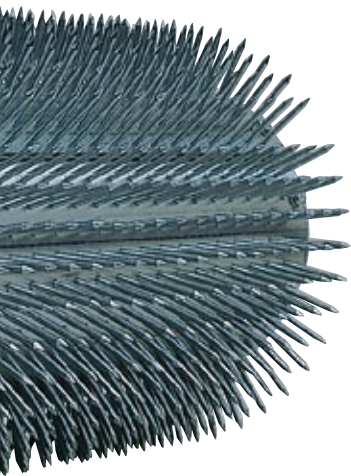


**TERRA COMBI with slitting knives**



**TERRA COMBI** with hollow tines or slitting knives – the quick art of aerating.





Belt drive for the stirring shaft.



**TERRA COMBI 53"** with optional overseeding unit.

## OVERSEEDING



For improving turf that is worn and infiltrated with weeds or foreign grass without breaking up the soil, the **TERRA COMBI** with overseeding unit is unbeatable. A prerequisite for the successful germination of the seed is intensive contact between seed and soil. Just as important is an even, stripe-free spread of the seed. All these important requirements for successful overseeding are met by the **TERRA COMBI** with spiked rollers and overseeding unit.

With the spiked roller Wiedenmann has developed a completely new type of tool with respect to function and technical concept. The goal of the development was a tool with which to achieve a high hole count per sq.ft. in one pass and without drive via p.t.o., so that ideal conditions for subsequent overseeding can be realized. The result is the spiked roller with 3/16" solid tines and square hole spacing of 1". Unbeatable 150 holes per sq.ft. are the best conditions for intensive contact between seed and soil, and the basis for an even improvement of the grass. Making turns without damaging the turf is possible due to the flexible attachment of the 3/16" solid tines.

Instead of the spiked roller you can also use special spring tines for the preparation of the seed-bed. For this, you may mount 1 or 2 sets of spring tines to the universal frame. Depending on the application ground (such as golf greens, fairways and athletic fields) and the desired working intensity, you may select between coarse and fine spring tines.

The overseeding unit is mounted directly to the frame of the **TERRA COMBI** via a parallelogram. The stirring shaft integrated into the galvanized seed container is driven via a V-belt by the low-pressure tires of the overseeding unit. This ensures an even flow of the seed. On request, the overseeding unit can be equipped with additional coarse or fine spring tines in order to open the turf even more intensively, thus promoting the conditions for optimal contact between seed and soil. The seed brush, which is also parallelogram-suspended, brushes the seed into the seed holes. The trailed seed roller with low-pressure tires presses the seed into the soil, thereby promoting intensive contact between seed and soil, which is necessary for optimal germination. The low-pressure tires with self-cleaning effect prevent materials from accumulating on the wheels.

For quick setting of the discharging volume or for quick change of seeds, the overseeding unit is equipped with a calibration trough and a turning crank. The short distance between seed discharge opening and turf of only 5" minimizes the risk that the seed will be blown away by the wind.



**Fine spring tines**

As soon as the overseeding unit has been brought from working to transport position, the seed discharge opening is closed automatically, preventing any unintended seed loss during turning maneuvers.

The seed volume can be adjusted progressively from .05 - 1.2 lbs per sq.ft.

**TERRA COMBI with spiked roller and overseeding unit with 150 holes per sq.ft. – ensuring even, stripe-free and successful overseeding.**



# **The Tools and Rear Attachments of the *TERRA COMBI***

According to the customer's need for multiple uses, the **TERRA COMBI** can be equipped with various tools and can also be combined with various rear attachments, allowing the performance of

different operations in one pass. This saves time, reduces costs, reduces down-time for the facility and avoids additional passes and compaction of the ground.



## **SAND BRUSHING**

For sanding turf or golf greens, Wiedenmann offers special machines (TERRA TOP 400 and SAND SPREADER). We will be glad to send you the respective brochures upon request. For leveling the sand and for filling the aeration holes, the **TERRA COMBI** with drag brush is ideally suited. Depending on the sanding intensity, the **TERRA COMBI** can be optionally equipped with up to 3 sets of spring tines to make the sand flow, which is ideal for the trailed parallelogram-suspended brush rails to brush the sand into the aeration holes and to level the surface. The subsequent smooth roller levels any roughness that still exists.

***TERRA COMBI with drag brush - the ideal brush/roller combination for efficient sand brushing with the top finish.***



## **LEVELING**

When performing maintenance measures such as deep spiking, aerating or slitting, it should be ensured that any roughness produced is compensated and leveled immediately. For this purpose, the optional rear roller with rounded edges is ideally suited; it can be used without any problems in connection with the heaving rotor or cast-iron disc element.



**Bogey**

## **BOGEY**

Instead of the direct attachment to the rear 3-point hitch of the tractor, the **TERRA COMBI** 63" and 83" can also be equipped with a bogey. This can be an advantage with combined rear attachments.

***TERRA COMBI with bogey - an alternative attachment to the rear 3-point hitch.***



# TERRA COMBI

TECHNICAL DATA	TC 135	TC 160	TC 210
<b>UNIVERSAL FRAME</b>			
Working width in inches:	53 <sup>11</sup>	63 <sup>11</sup>	83 <sup>11</sup>
Mounting:	rear - 3-point cat. I + II		
Drive:	ground-driven		
Ballast frame, depth wheels, spiked roller	standard	–	–
Parking stand, ballast frame, protective hood	–	standard	standard
Weight of basic frame with ballast frame and spiked roller in lbs. app.:	385	–	–
Weight of universal frame incl. ballast frame & protective hood in lbs. app.:	–	320	364
Depth wheels	standard	•	•
Basic rail for mounting spring tines to universal frame	–	•	•
Hydraulic weight transfer	–	•	•
<b>TOOLS</b>			
<b>Heaving rotor</b>			
Working depth of heave knife in inches app.:	–	8 <sup>11</sup>	8 <sup>11</sup>
Weight in lbs. app.:	–	275	287
Low heave knife	–	•	•
High heave knife	–	•	•
<b>Spiked roller</b>			
Working depth of spiked roller max. in inches app.:	1 <sup>11</sup>	1 <sup>11</sup>	1 <sup>11</sup>
Weight in lbs. app.:	see above	518	683
<b>Cast-iron discs</b>			
Cast-iron discs, rigid	–	•	•
Weight in lbs. app.:	–	760	940
Cast-iron discs, pendulous with hydraulic equalizing system	–	•	•
Weight in lbs. app.:	–	760	937
Working depth of slitting knives max. in inches app.:	–	3 <sup>11</sup> / 5 <sup>11</sup>	3 <sup>11</sup> / 5 <sup>11</sup>
Working depth of hollow spoons max. in inches app.:	–	3 <sup>11</sup>	3 <sup>11</sup>
<b>Verticutting harrow</b>			
Weight in lbs. app.:	–	275	298
Working depth in inches app.:	–	0 - .20 <sup>11</sup>	0 - .20 <sup>11</sup>
<b>REAR ATTACHMENTS</b>			
<b>Overseeding unit</b>			
Weight in lbs. app.:	320	342	408
<b>Drag brush</b>			
Weight in lbs. app.:	209	–	298
<b>Coarse and fine spring tines</b>			
Fine spring tines for overseeding unit, drag brush or basic rail	•	•	•
Coarse spring tines for overseeding unit, drag brush or basic rail	•	•	•
<b>Rear roller</b>			
Weight in lbs. app.:	–	99	121
<b>Bogey</b>			
	–	•	•

(•) = Optionally available (–) = not available

Descriptions and images are not binding. Construction and design are subject to modifications.

Further information:



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