



Combi STRIP



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MACCHINE AGRICOLE S.r.l.



Combi STRIP

The "Combi STRIP" is a tool designed to the tillage for preparing only the future seeding line for the planting of crop on lines such as corn, sunflower, sugar beet, soya bean, rape or sorghum.

The processing is performed in the view of conservative agriculture on hard ground, reducing the worked surface by 80%, providing the ground cover between rows.

This entails a number of advantages to the ground itself, as the protection against driving rain, control water erosion, more lift soil against agricultural machines, retaining moisture below with lesser evaporation of water to the benefit of the crop and reducing emergencies weed.

The most common agronomic technique is the processing decoupled from the sowing. In this case, when the soil is dry, through the use of row markers or satellite systems, it will be possible to sow with a conventional planter, such as the "Precisa XL" ma/ag.

In the presence of dry soils or in tempering and when conditions allow them, it is possible to carry out the sowing in combination by the use of a trailer mounting the machine for strip tillage and the planter.

It is shown that the strip tillage, compared with the other preparation of the soil, allows productions comparable to other types of working, while profitability is favored for the reduction of the direct costs of tillage in the order of 25-45%, depending on the conditions, due to the fuel and time savings.



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Combi STRIP follow the seeding line



The heart of the machine is represented by the elements for the preparation of the strips of sowing. The work is performed by some tools arranged in series which work according to this sequence of operations: cleaning of the strip by the cut of organic residues, opening and working of the groove without inversion of the layers with variable depth, according to the tool mounted, refining or end confinement. During the work, the machine can perform the injection in the furrow of fertilizer, if equipped with particular accessories.

The preparation of the seed bed is realized by the combination of hooked, wavy or smooth discs together with coulter anchors and refiner and confinement rollers of different conformation.

Basic, the processing realizes a strip of about 10 up to 25 cm in width, to a depth which, starting from 0 cm usually does not exceed 20 cm, but, by changing tool, can reach even 30 cm.

Essential element of the equipment is the "single unit with parallelogram". As for other agricultural equipment (like planters and inter-row cultivators) for granting a perfect strip work, we have decided to mount all the working elements on "parallelogram" independent and completely adjustable that better suit to the soil conditions and are not affected, if not in a marginal way, from the machine position. Each unit works thanks to its weight and to a "preload" that is conferred to the element by two adjustable tension springs.



Couple of hooked discs for the cleaning of the strip of the residues on the soil

This tool of the machine is made of a couple of hooked discs and converging respect at the advancement direction, so as to move the organic material left and right on the working row.

This permits to have a seed bed cleaned from residues that will obstacle the contact between soil and seed during the sowing itself. At the same time, the row spacing will be covered by a greater quantity of residue that will permit all the beneficial effects in favor of the soil that we have already known.

The discs are mounted on bearing supports.

Cut residue disc and open furrow

This tool is crucial, because it cuts the residues of previous crop and affects the soil only on the surface without mixing up to 5-8 cm of depth, making it easier to avoid clogging on the rear elements and uncontrolled lateral side explosions of the soil, promotes the movement of biomass on row spacing in a complete way.

Working anchor with penetration tool

This is a key component to prepare the sowing strip and facilitate the growth of roots in depth. The main function is to break the soil by decompacting it with a thin tooth up to a depth which varies according to the chosen tool.

To select the right tool and the type of point, you must check what is the status of the soil below the surface: compacted, loose, hard or good working condition soils need to be managed with the right equipment.

If the "Combi STRIP" is equipped with a hopper for fertilizer, thanks to pipes integrated in the working anchors, you can deposit the manure behind the tool at the desired depth, which generally amounts to 6-8 cm or more.



Working discs and containment

These are two discs with dedicated supports, floating, with compressing springs. They are located behind the working anchor with which they are integrated and converge on the rear part with an adjustable inclination degree, so to displace part of the loose soil on the centre of the strip of work for creating a lightweight "Arginello" of sowing, not more than 10-12 cm in height. These discs are adjustable in all directions according to the demands and maintain the earth along the working line.

Refiner roller or ended compaction

This device, like the others, is mounted with dedicated bearing, on an adjustable subframe, floating with thrust spring and works the entire width of the row.

In the case you want to mount a refiner roller, this can have various profile, also if, in general, it consists of plates or bars, more or less accentuated for the breakup of the clods of the soil. The function is identical to that of the rear roller on the disc harrows, to favor the formation of fine soil. On the soils in which the process of freezing and thawing usually occurs and the processing is in autumn, these devices may also not be present.

In case you want to sow in combination and in conjunction with the processing, the refiner roller must be replaced by a compactor roller that makes compaction of the soil formed to "Arginello", prepared by the previous discs so that on this the seed will be deposited from the rear planter.



The advantages of the “Combi STRIP” and of the technique of the strip tillage are:

- **High productivity of the work** with a variable feeding speed between 7 and 15 Km / h and an average hourly output variable according to the working width of the models with a consequent **reduction of manpower and large areas workable**
- **Working only on a row** obtained thanks to the use of interchangeable working tools put on sequence
- **Double layer working** thanks to the anchor that works on depth and to the discs that work on the surface of the soil, not more than 10 cm
- **Low environmental impact**, lower emission of carbon dioxide into the environment and significant reduction of fuel consumption per worked hectare, thanks to the reduced power required for the work
- **Reduction of the numbers of steps**, in fact with a unique step, you can have the preparation of the soil and, with the machine properly set up, you can handle the sowing and / or the manure distribution
- **Reduction of the production costs** thanks to the modularity and versatility of the equipment
- The sowing can be managed with **traditional planters**

- **Highly presence of residues after the working** up to 80% obtained thanks to the not inversion of the layers of the soil
- **More efficient use of manures and fertilizers** with improved efficiency of use
- **Strong training of the ground** with favorable development of beneficial organisms (eg earthworms and microorganisms), in the first layers of the soil
- **Production yields comparable to those obtainable with the “traditional” processing system**
- **Versatility and modularity of the equipment**, transition from “strip tillage” configuration to the “combined” configuration with the precision planter



REFINER CAGE ROLLER, WITH TOOTHED CURVED PLATES



REFINER CAGE ROLLER, WITH STRAIGHT PLATES



COUPLE OF TRACING WHEELS



CAST IRON ROLLER



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CONDUIT FOR THE INSERTION OF THE FERTILIZER OPTIONAL

The "Combi STRIP" is available in different dimensions: 4 rows with fixed frame, or 6-8-12 rows with hydraulic foldable frame for the transport on road, for working width from 2,50 to 6,00 m.

The medium HP needed for single unit "strip" is around 25 HP (18,4 KW) for adjustable HP from 100 HP (73,6 KW) for equipments of 4 rows and over 200 HP (147,2 KW) for the 12 rows. In fact, the technique can also be used with small tractors ... in a view of a more sustainable agriculture.



PRE-LOAD SYSTEM WITH ADJUSTABLE SPRING STANDARD



PRE-LOAD SYSTEM WITH PNEUMATIC BELLOW OPTIONAL

TECHICAL CHARACTERISTICS

Number of rows	4	6	8	12
Frame	Fixed	Foldable		
Inter-row (cm)	70-75			45-50
Transport width (m)	2,50			3,00
Working width (m)	2,50	4,50	6,00	
HP needed (HP/KW)	Up to 25 HP (18,4 KW) per row according to the working depth			
III point linkage	III° Cat.			
Fertilizer	With hopper mounted on the frame		With front hopper or independent front trailer hopper	
Rear attack	Optional of III° Cat.			

**Working
in a only pass**

Combi STRIP 8 rows space distance 70 cm
trailed version
in combination with planter ma/ag "Precisa XL"



MADE IN ITALY - CEE



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