

Inter row cultivator GELIO

Agrokraft
DEUTSCHE AGRARTECHNIK FÜR PROFIS



GERMAN AGRICULTURAL TECHNOLOGY FOR PROFESSIONALS

Inter row cultivator GELIO



Inter-row cultivator GELIO with a variable row spacing from 10-15cm to 75cm or more is designed to care of a wide variety of crops: corn, sunflower, soybeans, beets, wheat etc.

ADVANTAGES:

- 1 Parallelogram maintenance of the depth of processing on each row. Setting the depth of processing with the help of a control spindle.
- 2 Active precision guidance system helps to avoid undercut the line of crops.
- 3 High clearance of the frame up to 800 mm and smooth adjustment of the row spacing.
- 4 Hydraulic folding from the tractor cab.
- 5 Resistant to clogging tools ensure a good work even with strong weed growth. Well-adapted "Vibro-cutters".
- 6 A wide support wheel with a special tire helps to avoid the adhesion of the earth.
- 7 The use of a cultivator makes it possible to reduce the amount of plant protection products introduced.
- 8 It is possible to install the system for input of liquid or granulate fertilizer (option).
- 9 Loosening inside the row of cultivated plants with the help of a comb harrow (option).
- 10 Protective discs on the bearing support provide reliable protection of crop plants against undercut (option).

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Arrangement of the inter row cultivator GELIO:



1 Frame = 6 Machines!

- The universal frame allows you to use the machine as a rotary cultivator STERN, shredders crop residues TURBO, spring tooth harrow striegel TOR, seeder VELES or two-lane seeder VELES-2 for the seeding of all types of cereals, rape seed and soy beans.
- 3-point linkage supports the frame from below and ensures the stable work of the cultivator.
- The mechanical guidance system with iron (or rubber) wheels allows the cultivator to follow the tractor precisely and cultivate very close to the rows without undercut the plants.

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Arrangement of the inter row cultivator GELIO:



- Each parallelogram of the cultivator is mounted on the frame with a single bolt. The bolt provides a very easy adjustment of the inter-row distance.
- The depth adjustment is carried out with the help of the control spindle of the rotary wheel on the parallelogram, which makes it possible to copy accurately the soil relief and guarantees a constant depth of cultivating.
- A special wide support wheel allows you to work even in highly moist soil without sticking of the ground.

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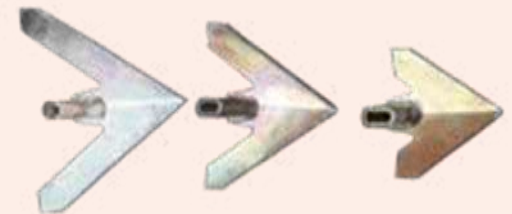
Arrangement of the inter row cultivator GELIO:

**Working group
GELIO-K**



Optionally: The sweeps can be used with the width of 200mm or 250mm.

Working group GELIO-K: there are 2 S-spring tines and 3 spring vibro-tines with 150 mm sweeps in this working group. It is possible to use this working group universally for all kinds of crops, if you remove 2 S-Spring tines and adjust the row distance.



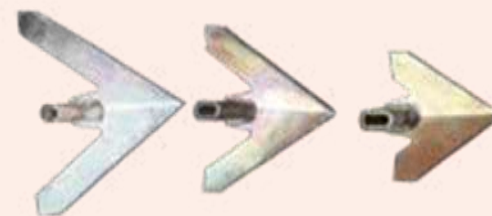
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Arrangement of the inter row cultivator GELIO:



Working group GELIO-S: there are 3 spring vibro-tines with 150 mm sweeps in this working group.

Optionally: The sweeps can be used with the width of 200mm or 250mm.



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Arrangement of the inter row cultivator GELIO:

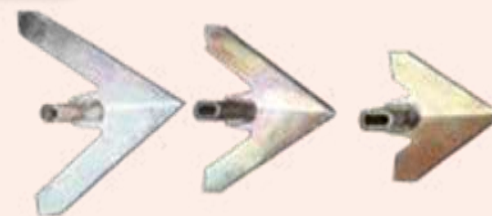
Working group
GELIO-R



Working group GELIO-R: there are 8 loosening starts and 1 tine with 150 mm sweeps in this working group. The stars can be regulated in two dimensions and allow you to work either for hilling or for loosening between the rows.



Optionally: The sweep can be used with the width of 200mm or 250mm. Optionally: each working group can be mounted with 2 S-tines with the sweeps 150mm, 200mm or 250mm.



Inter row cultivator GELIO

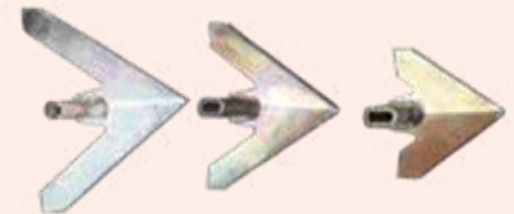
Arrangement of the inter row cultivator GELIO:

**Working group
GELIO-P**



Working group GELIO-P: there are 5 S-spring tines with 150 mm sweeps in this working group. It is possible to use this working group universally for all kinds of crops, if you remove 2 S-Spring tines and adjust the row distance.

Optionally: The sweeps can be used with the width of 200mm or 250mm.



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Arrangement of the inter row cultivator GELIO:

Working group GELIO-U: there are 2 adjustable angle blades in this working group.



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Optional equipment for the inter row cultivator GELIO:



Protective discs

Protective discs with a diameter of 430 mm provide a good protection for the plants in the initial phase of grow.



Comb harrow

The Comb harrow can be used for the loosening inside the row of cultivated plants.



Protective shields

Protective shields protect the plants from undercutting.

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Optional equipment for the inter row cultivator GELIO:



◀ LINUS



◀ GINUS

The GELIO cultivator can optionally be equipped with the LINUS system for input of liquid fractions in the inter-row or in the row, as well as on the leaf surface. The system GINUS can be used for input of granular fertilizers in the inter-row or under the sweeps during the cultivating.

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◀ GINUS



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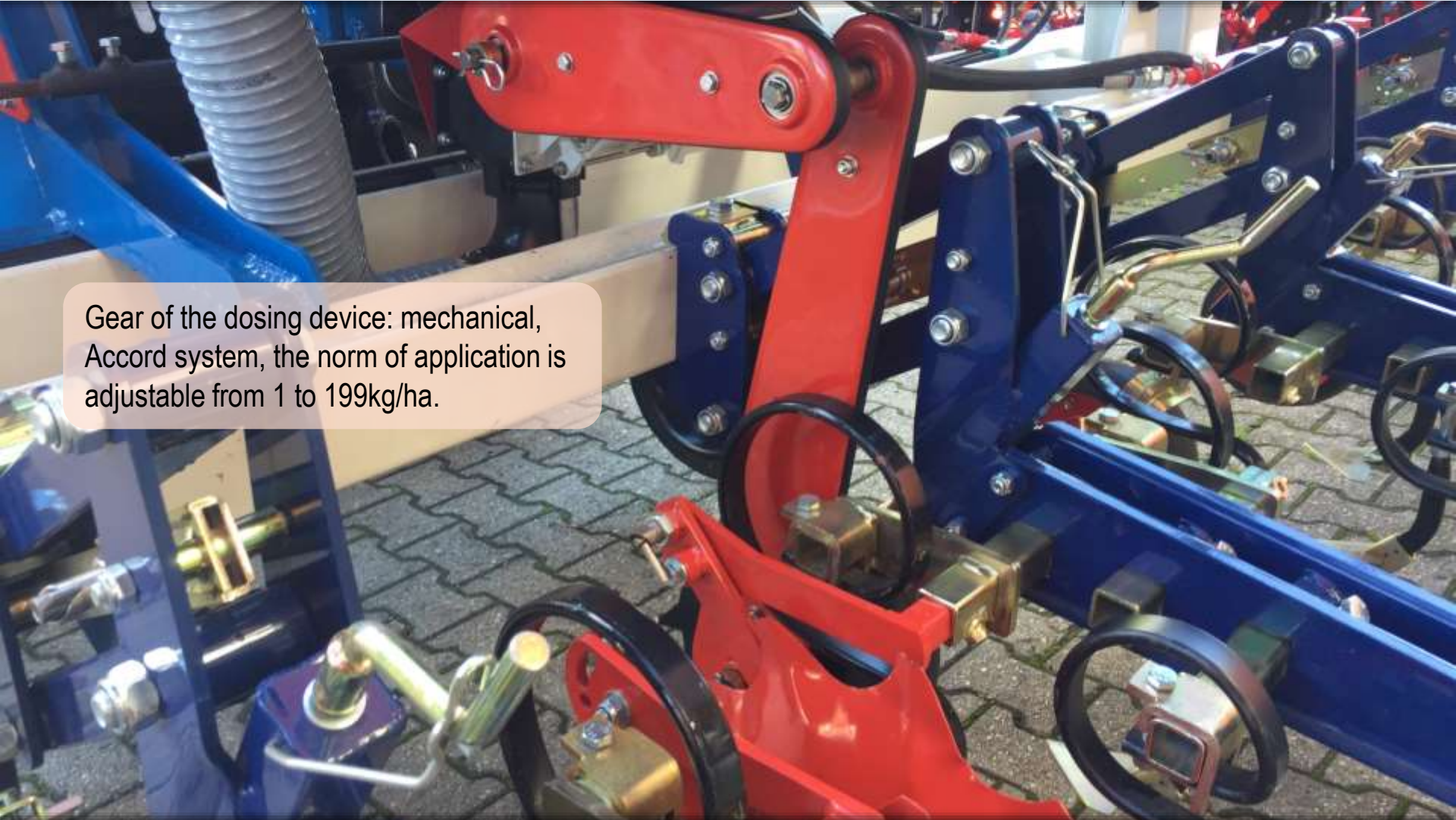
Description and structure of the granular fertilizer application system GINUS



- A tank can have a capacity of 800 l / 1000l or 2000l depending on the frame type of the cultivator.
- The turbine is driven by a hydraulic motor mounted on the bunker from the hydraulic system of the tractor.
- Constant rate of application, regardless of the tractor speed, is kept by adjustment and control of the rate of introducing through the spore wheel.
- The distribution hats have the possibility of re-equipment, by closing of the outputs.
- The system for fertilizer application with the working group.

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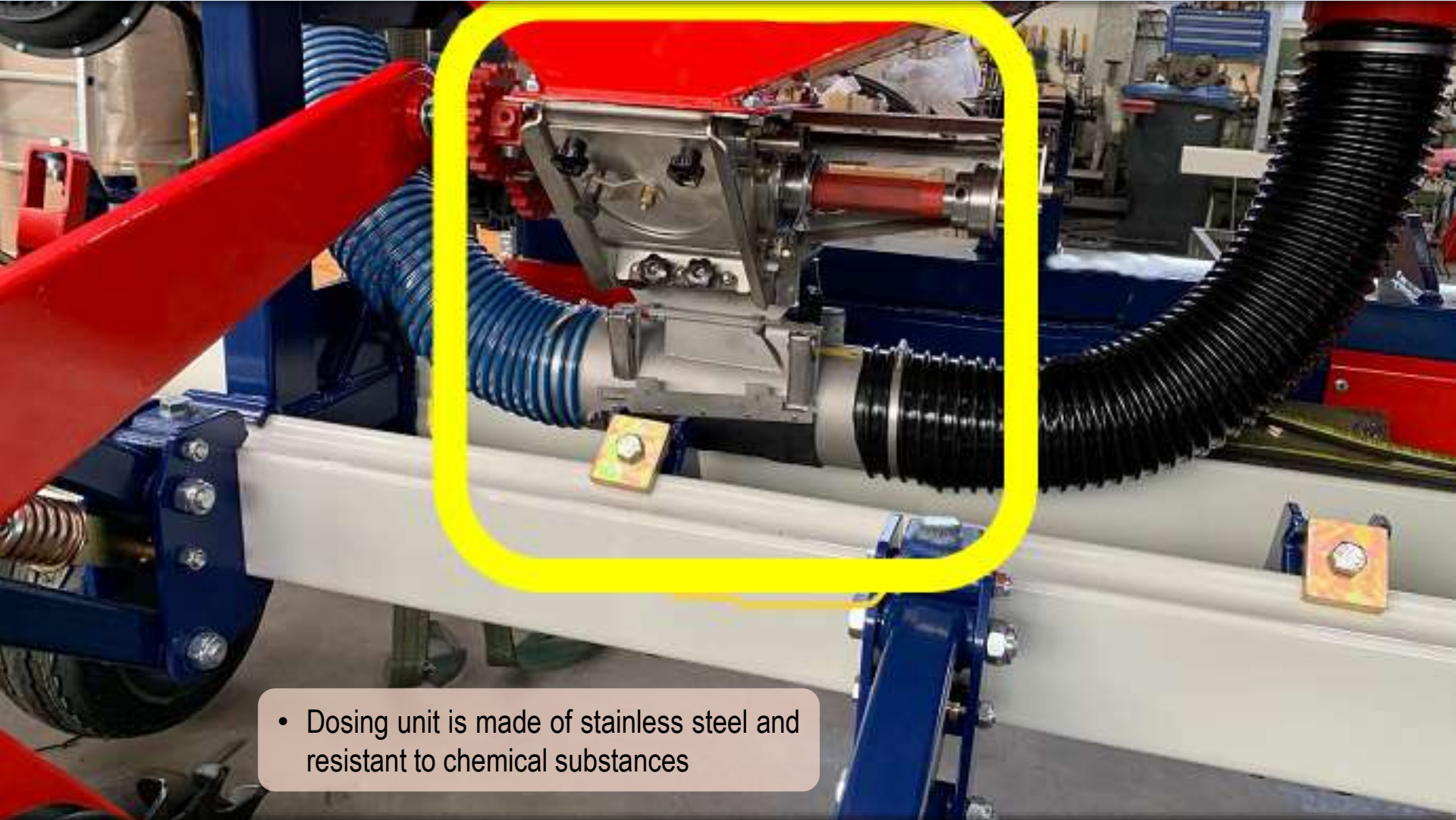


Gear of the dosing device: mechanical, Accord system, the norm of application is adjustable from 1 to 199kg/ha.

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- Dosing unit is made of stainless steel and resistant to chemical substances

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There are several opportunities of application of granular fertilizers in the soil: spreading on the surface before or after tillage, application in a row or row spacing, or in the soil under the sweeps.

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Liquid fertilizers are now widely used in agriculture and allow to increase the quantity and quality of the crop. Depending on the tasks facing the economy, in addition to liquid fertilizers, herbicides or insecticides are used. For rational use of agro technical terms, reduction of time, economy of labour and fuel resources, application of liquid fertilizers, herbicides or insecticides is recommended to be combined with other agro technical measures.



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Description and structure of the liquid fertilizer application system LINUS-600



- Electric pump drive.
- The main tank for liquid fertilizers is 600 liters.
- Rinsing tank 16 liters.
- Control system for automated dosage.



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Description and structure of the liquid fertilizer application system LINUS-2x600



- Electric pump drive.
- 2 main tanks for liquid fertilizers of 600 liters each.
- Rinsing tank of 16 liters.
- Control system for automated dosage of one or two components, on both sides of the row.

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Description and structure of the liquid fertilizer application system LINUS-Front

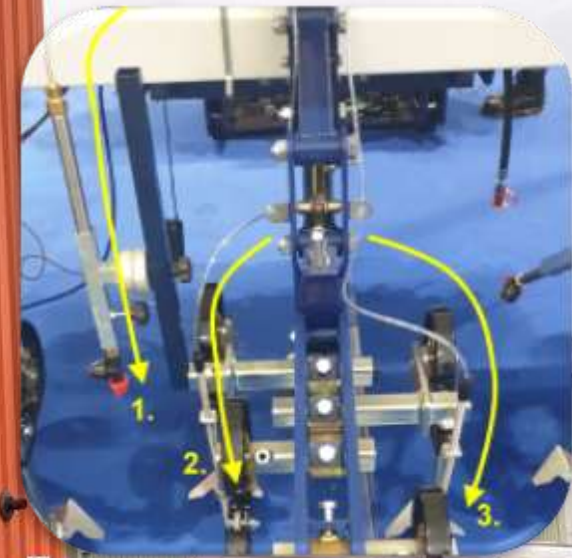


- The system LINUS-FRONT with a tank placed on the front of the tractor:
- 600l main tank or more (up to a maximum of 1900l)
- Tank for washing system
- Hand wash tank
- Front frame with 3 point linkage
- Front lights
- Computer AGROKRAFT
Cruise 4, Can-Bus radio control
- The pump is electric, powered by the tractor system.

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It is possible to put 3 different liquids at the same time during the cultivation, using our System LINUS-2x600 and Linus-Front. The control system can manage up to 4 different components.



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There are several opportunities for input of liquid fertilizers and chemicals:

- ▶ 1 the first liquid fraction on the leaf surface or under the leaf
- ▶ 2 the second liquid fraction in the row distance or under the sweeps.
- ▶ 3 the same or the third different liquid fraction in the row distance or under the sweeps.

Optionally can be equipped with nozzles with an angle of attack adapted to the purpose of agro technical measures.

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Inter-row cultivating with simultaneous application of plant protection products enables:

- to reduce the soil temperature by 8-10 °C
- to provide soil aeration and struggle with soil crust
- to fight with weeds
- to save the cost of plant protection products



Innovative technology, equipment: "EXACT" precision guidance system



Description and characteristics of the system EXACT

- Rows of plants in front of machine are recorded by a video camera.
- The resulting image is processed by the computer to identify a high concentration of green pigment recognizing cultivated plant.
- Due to the wide-view camera and processing several rows of crops at the same time, the system is reached a optimal central fixation of cultivated crops. The resulting image is compared with the established system EXACT grid divisions, which indicating the row spacing.
- This information is used to accommodate working groups of tilled cultivator in the center between rows with a hydraulic displacement unit.

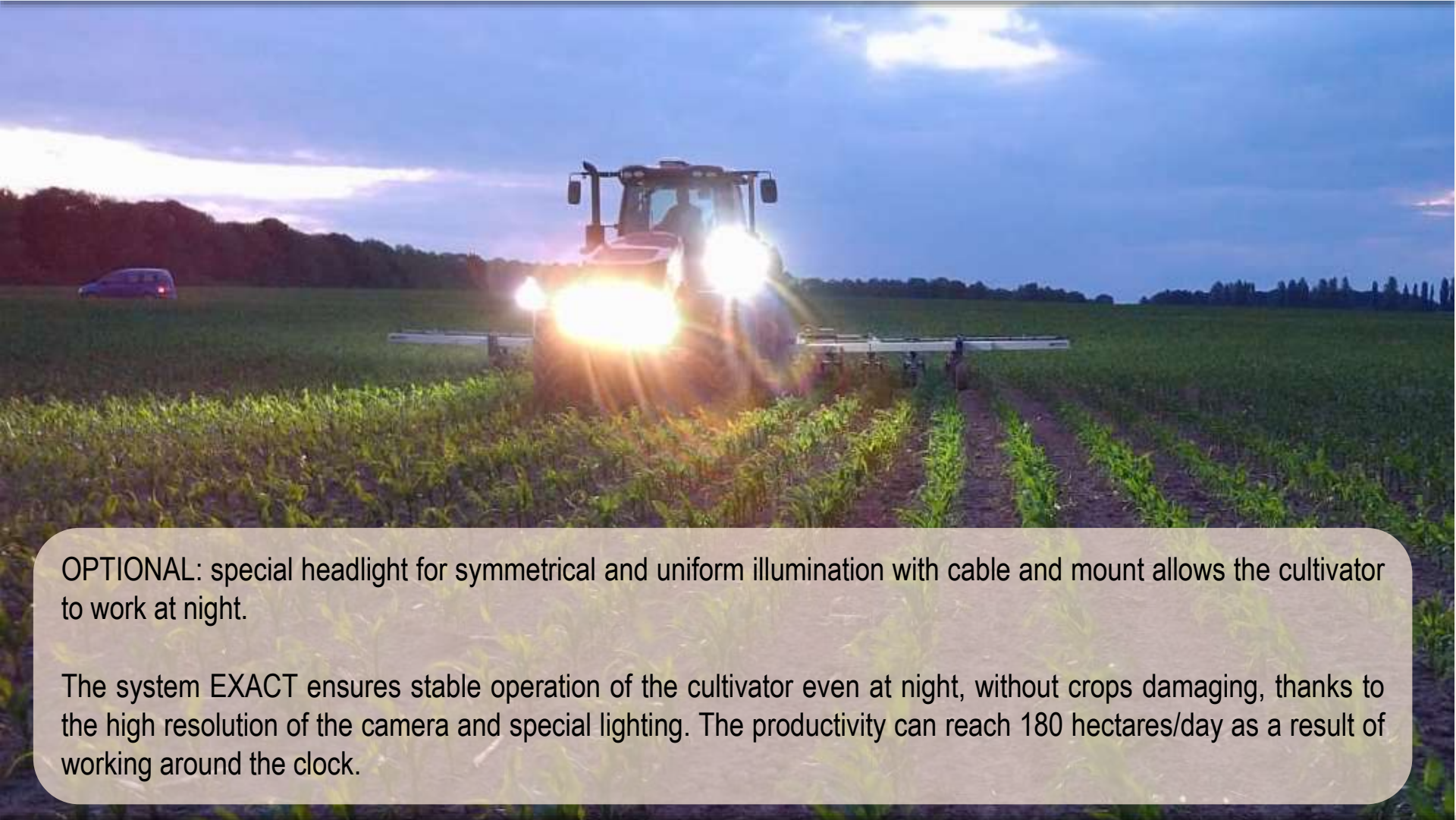


Thanks to the amendment of the camera information with the graphical network of the EXACT system, the following is made possible:

- Effective soil cultivation in case of strong weed growth.
- Avoidance of plant cutting.
- Working speed of the cultivator is increased to up to 18 km/h; while increasing the productivity by 2-3 times.

Innovative technology, equipment:
"EXACT" precision guidance system

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OPTIONAL: special headlight for symmetrical and uniform illumination with cable and mount allows the cultivator to work at night.

The system EXACT ensures stable operation of the cultivator even at night, without crops damaging, thanks to the high resolution of the camera and special lighting. The productivity can reach 180 hectares/day as a result of working around the clock.

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Innovative technology, equipment: "EXACT" precision guidance system



Description and characteristics of the system EXACT

EXACT system in the new improved version, a system of hydraulic side shift with the following items:

- "CMOS" image transmission camera with new robust steel housing and high dynamics range in order to improve the productivity.
- New 9 inch touch screen monitor with one single cable connection and clear transmission of the information in real time.
- The drive section of the lateral displacement system has a three-point attachment of category 2 or 3 and features a new improved design and easy operating setting of the sensors.
- The support wheel is equipped with a speed sensor.
- The latest software version is the result of many years of tests and improvements and allows for working in crops with fine adjustment selection for the green or red leaves and offers an overview of row tracking exact to one centimetre. The software even allows for precise row processing at a high working speed of the cultivator of up to 18 km/h.
- If necessary, the second video camera can be connected. Thanks to the USB port, your settings can be stored and restored at any time. For language support, oriental and Cyrillic languages are provided.
- Input voltage range to the tractor has been extended: 5-20V.

Innovative technology, equipment: "EXACT" precision guidance system

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System EXACT allows you to work in a very early phase of development of sugar beet and to cultivate without damaging the plants.



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**Innovative technology, equipment:
"EXACT" precision guidance system**



EXACT precision guidance system allows for cultivation at a distance as close to the sowing rows as possible and on the trails. During the steep travel of the tractor on the trails, the cultivator frame keeps all sections precisely in between the rows.



Innovative technology, equipment:
"EXACT" precision guidance system

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EXACT precision guidance system allows:

- Avoidance of row cutting even during the lateral displacements of the tractor on the trails.
- Increase the working speed of the cultivator to 18 km / h.
- Increase the processing capacity by 2-3 times. EXACT system allows for the processing of the crops 24 hours a day.



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Innovative technology, equipment:
"EXACT" precision guidance system



Calculation of the working efficiency of the EXACT precision guidance system

Crop	CORN	SUNFLOWERS	SOYA
Sowing area	1000 ha	1000 ha	1000 ha
Crop yield	10 t/ha	2,8 t/ha	2,5 t/ha
Total crop	10.000 t	2.800 t	2.500 t
Area that is cut during the cultivation	10%	10%	10%
Crop shortfall	1000 t	280 t	250 t
Price 1t	140 €/t	310 €/t	320 €/t
Loss of profit as a consequence of the plant cutting during the cultivation	140.000 €	86.800 €	80.000 €



Innovative technology, equipment: "EXACT" precision guidance system



A PRACTICAL EXAMPLE OF A PAYBACK CALCULATION

One of our client from Ukraine has bought our inter-row cultivator GELIO with precision guidance system EXACT.

It was a last minute purchase late in the season. He has cultivated only 600 ha of his corn fields.

These 600 ha have given 12 tones/ha.

The rest area, which was not cultivated with our systems has given ca. 10 tones/ha.

$600 \text{ ha} \times 2 \text{ tones} \text{ (2 tones more harvest then from the rest area)} = 1.200 \text{ tones}$

$1.200 \text{ tones} \times 140\text{€} \text{ (the price for 1 ton of corn)} = 168.000,00\text{€}$

The client has paid for inter-row cultivator GELIO for corn 16 rows x 70 cm + EXACT precision guidance system 53.024,00€

Usually the purchase of the guidance system EXACT and cultivator GELIO pays off after processing only 200-250 hectares.

Do not forget that you can work with the speed up to 18km/h. This means you need only 1 cultivator with guidance system instead of 2 or 3 machines. This also makes, that you do not need 2 or 3 tractors and 2 or 3 drivers.

A very important point is also, that our guidance system allows you to work at night and to cultivate up to 2.400 ha per season.