

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.

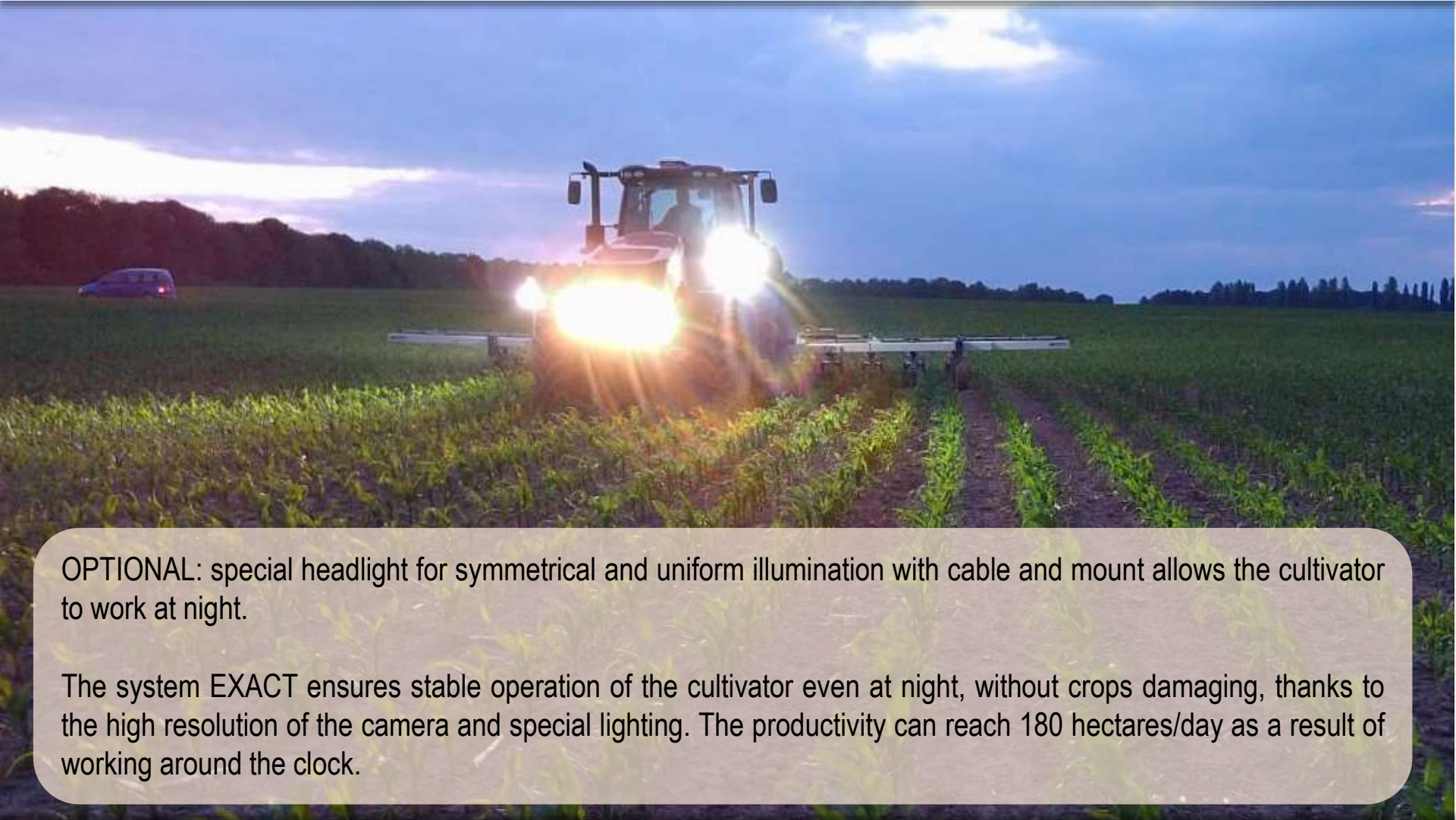


Thanks to the amendment of the camera information with the graphical network of the EXACT system, the following is made possible:

- 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.

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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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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.

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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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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.



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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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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 €



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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.