



CAMERA STEERING SYSTEM ROW-GUARD





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The ROW-GUARD camera steering system steers the hoe with absolute precision along the crops via a sideshift frame. This guarantees precise and close work of the hoe even at high speeds and will relieve the driver. Even with very small plants (from approx. 2 cm / 0.80") as well as in different colors or with heavy weeds, the ROW-GUARD camera steering in organic and conventional cultivation brings increased precision.

The automatic camera steering can be conveniently set from the tractor via an operating terminal. With the help of different setting parameters, adapted to the crop (row spacing, number of rows in the camera's field of view, plant width and height), an appropriate grid is laid over the image. Based on this data, the hoe is centred exactly along the row with the help of the sideshift frame. This ensures a narrow hoeing belt which guarantees maximum weed control.



Precision can be increased - with camera and sideshift frame!

Type	Info	Hoe kg / lbs	Weight approx. kg / lbs
ROW-GUARD 500	for frame up to 6.99 m / 22.90 ft	≤ 2500 / 5511	390 / 859
ROW-GUARD 500 SR	for frame up to 12.2 m / 40.00 ft	≤ 3900 / 8598	530 / 1168
ROW-GUARD 500 SRHD	for frame up to 12.2 m / 40.00 ft	> 4000 / 8818	960 / 2116



STANDARD EQUIPMENT

- ✓ Sideshift-frame with total offset of 500 mm / 19.70"
- ✓ Upper and lower links guided on both sides
- ✓ Upper and lower links equipped with hardened bushings
- ✓ Mounting category CAT II / category CAT III for type SR and SRHD
- ✓ Quick couplers for quick changing of the inter-row-crop cultivator
- ✓ Guidance shafts made from high-strength, coated metal for minimised wear and tear
- ✓ Parking support when ordered without hoe
- ✓ Camera with 2 vertically placed, high definition lenses with different exposure for improved operation in changing light conditions
- ✓ Holder for camera for Einböck hoes
- ✓ Stabilising wheels with high gauge wheels or rubber version when supplied with Einböck hoeing machines
- ✓ Wheel sensor with holder and cable (length 3 m / 9.80 ft) suitable for the stabilising wheels of the ROW-GUARD
- ✓ Sensor on the upper link to determine the position of the 3 point linkage
- ✓ Control unit with touchscreen und integrated video-monitor and universal-holder for the tractor cab



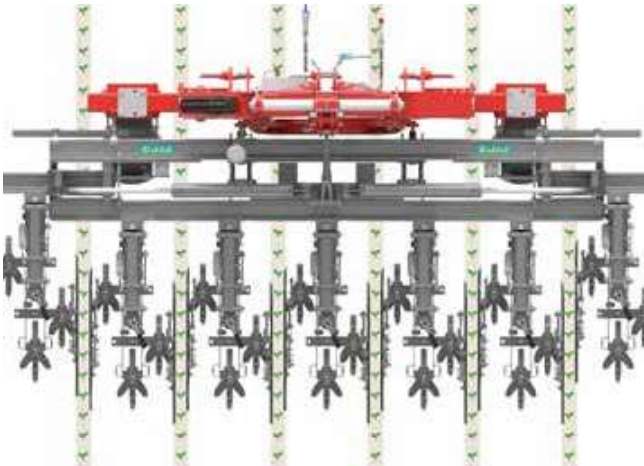
OPTIONS

- LED-lights
- Mechanical feeler
- 7 pin signal cable
- Additional camera for working with section control
- Stabilising wheels with high gauge wheel or rubber version when ordered without hoe

ADVANTAGES ROW-GUARD

CONCEPT

- » Camera-guided sideshift-frame in 3 different versions
- » Latest camera software - recognizes 1-5 crop rows in HD and 2D or 3D
- » One ROW-GUARD can be used for various row-crop cultivators
- » Rubber wheels or metal-gauge-wheels
- » Options: mechanic feeler, LED-lights



SHORTEST CONNECTION OF SIDESHIFT FRAME AND ROW-CROP CULTIVATORS

Because of the narrow construction of the Einböck-linear-sideshift frame the centre of gravity remains very closely to the tractor. This construction offers the following advantages:

- » Reduced axle load on the tractor and therefore reduced soil compaction
- » The wider the construction of the sideshift frame, the higher the load on the rear axle and the lifting power requirement of the tractor increases
- » The extremely narrow construction of the ROW-GUARD moves the centre of gravity only 20 cm / 7.90" to the rear
- » Machines with parallelogram shifting extend the position of row-crop cultivator up to 80 cm / 31.50" and more to the rear
- » Especially when fields are not straight or in hilly conditions the short construction is a big advantage

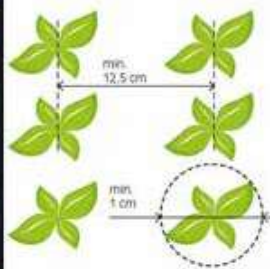
ONE SIDESHIFT FRAME = SEVERAL ROW-CROP CULTIVATORS

Simple and quick coupling and uncoupling of the Einböck sideshift frame allows to use different row-crop cultivators with only one sideshift frame.



LATEST VERSION OF HARD- AND SOFTWARE

- » Highest level of quality and excellent construction of the sideshift frame
- » Smooth and consistent movement because of the high-quality proportional valve
- » Millimetre-accurate control of the linear sideshift frame
- » State-of-the-art and intuitively operated touch-screen terminal
- » 100% control of functionality before leaving the factory
- » Spare connection for manual control like feeler or hand steering



RELIABLE PLANT RECOGNITION OF DIFFERENT ROW-CROPS

The system can be used in various crops with the following color modes: green/blue, green/yellow and red. From row spacing 12,5 cm / 4.90" and applicable from a plant size of 1 cm / 0.40" (depending on the crop)

FLEXIBLE POSSIBILITIES TO ADJUST THE CAMERA

- » Number of rows 1-5
- » Row spacing up to 1,5 m / 4.90 ft
- » Quickly adjustable to different crop dimensions



Einböck

CHOPSTAR

ADVANTAGES ROW-GUARD

BEST VISIBILITY - EVEN IN FIELDS WITH HEAVY WEED INFESTATION AND SMALL CROPS

The software recognizes the plant rows even in case of heavy weed infestations and/or small plants. The settings can be adjusted easily on the conditions.

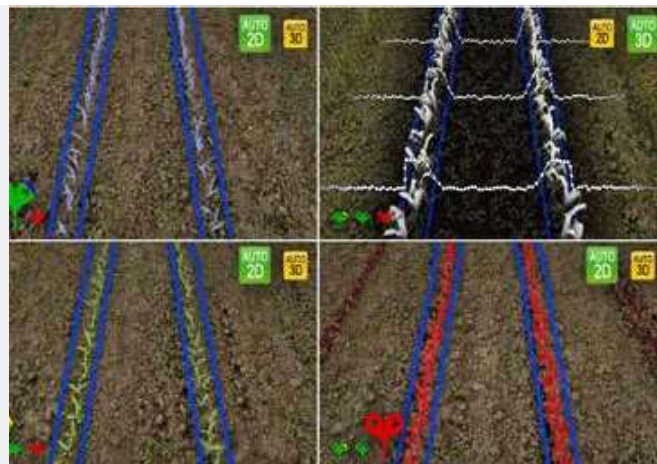


SPECIAL FEATURES:

- » Proportional hydr. valve: dynamic control of the valve for smooth operation of the sideshift frame
- » 3D-mode: the machine recognizes the row because of the difference in height between crops and weeds
- » Automatic recognition of height and angle position of the camera: comfortable adjustment of camera height
- » Color options in the 2D-mode (green/yellow, green/blue, red)
- » Automatic switching of offset
- » High camera resolution
- » Recognition of different row structures (single or multiple rows)
- » Integrated chart for recommended camera height
- » Saving of settings

ADAPTATION OF THE CAMERA APPLICATION TO THE CULTURE

The camera setting can be adjusted to suit the color or height of the crop. You can choose between green/yellow (e.g. corn), green/blue (e.g. soybeans, vegetables) or red (vegetables e.g. beetroot) in 2D mode. The 3D mode can be used for corn, soybeans, sunflowers, etc., if the plant rows have a clear growth advance (approx. 10 cm / 3.90") over the weed. Correct adjustment to the crop further increases the accuracy of row guidance.



STABILISING WHEELS OF THE SIDESHIFT FRAME

When ordering an Einböck row-crop cultivator height-adjustable stabilising wheels are included in the standard configuration. The wheels can be adjusted to the track width of the tractor and the row distance.

Depending on the type of soil you can choose between rubber stabilising wheels (1) or metal gauge wheels (2).

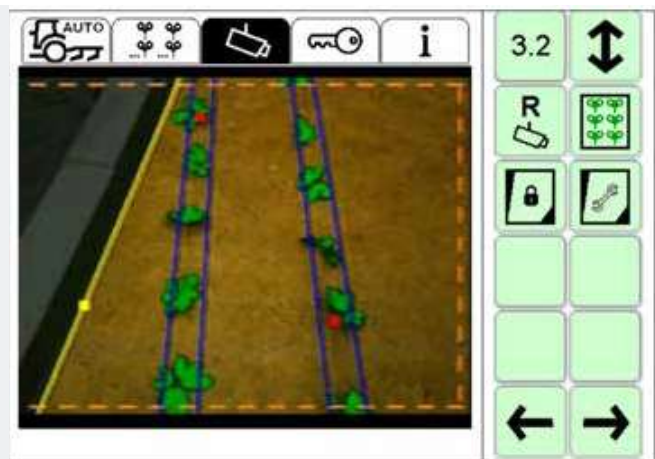


3D-MODE

Rows can also be detected on the basis of the height difference. Especially in heavy weed-infested fields this additional option ensures additional precision.

CUTTING OF THE IMAGE

Tractor tracks or other elements in the image would prevent the ROW-GUARD from precise working (especially in smaller working widths). Therefore, it is possible to cut the image easily and quickly.

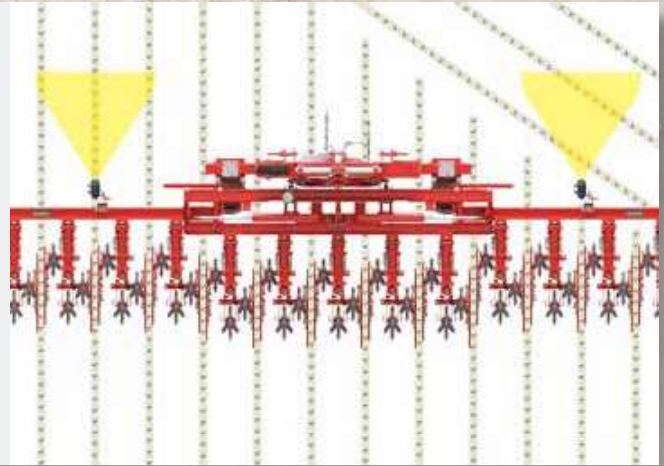




OPTIONS ROW-GUARD

MAXIMUM PRECISION - 2ND CAMERA (OPTIONALLY)

A row-crop cultivator can be controlled by two cameras simultaneously. Especially for very small crops, an additional camera, by looking on additional plant rows, ensures a great result. Especially for hoes with hydraulic lifting "Section Control": For example, on pointy rows at the headlands a row of plants always remains within the camera's field of view. This ensures hoeing until the last unworked row and guarantees a weed control on the full surface of the field.



MECHANICAL FEELER

- » For sensing a crop row (row spacing > 35 cm / 13.8")
- » Supports the ROW-GUARD shortly before or after row closure
- » Called "cat-whiskers" in North America

LED-LIGHTS

For working at night or at dusk.



ROW-GUARD HOTLINE

In case the operator needs help to correctly set the machine, a trilingual 24h phone-hotline is available during the season of hoeing. Its number can be found in the operating instructions.

