

WHEN FARMING MEANS BUSINESS

Realising the full potential of farming is about growing and developing your business, not only your crop or livestock, but also your profit. Improve productivity and profitability by focusing on the positives and minimising disadvantageous aspects, through strong, dedicated management.

Success springs from determination and clear targets, from laying down the appropriate strategy and allocating correct investments for the future. Quality results require the right ideas and equipment. When there is work to be done, you need the optimal setup and smart solutions that support you towards an easier, more profitable way of working. You need solutions that make tough and demanding conditions less complicated.











EFFECTIVE SOWINGTO MAKE SOWING PERFECT

Placement

The Unicorn is excellent in precise seed placement. You can be sure that the sowing unit follows the ground contour perfectly and the coulter forms a clean and clear furrow to ensure best seed-to-soil contact. You can seed perfectly in line and in relation to each other but also synchronised over the complete working width.

Intelligence

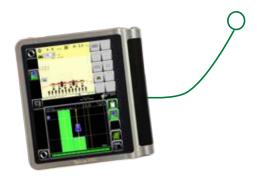
You invest in the best equipment for sowing your crop. In return you want the best results and to increase the yields significantly. With the Unicorn you have everything under control with ISOBUS Technology and Kverneland's Precision SMART Farming solutions.

Versatility

You want a precision drill that is versatile. Ready for the various crops to sow shallow or deep. Ready to adjust to the various ways of tillage, standard or mulch seeding in different types of soils. Universal machines allow cost savings.

Efficiency

When the time is right, you want to sow immediately. The soil has to be prepared with care and the moment of sowing depends on the right conditions, like local weather. To be successful you need a precision drill that is reliable and effective.



With Unicorn you can rely on a perfect execution.

PRECISE SINGULATION

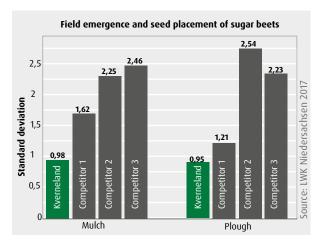
WITH UTMOST PRECISION PLACEMENT

The mechanical sowing system of the Unicorn operates as an internally filled drill, with chamber wheel speeds which correspond to the normal sowing speed in practice. The adjusted chamber speed of the bearing borne chamber wheel minimises bounce and roll impulses, thus increasing the precision of seed placement. Unicorn is the flexible allrounder, not only for conventional sowing but also for mulch sowing, fitted with either mechanical drive or electronic e-drive II.

- Specially moulded seed cells around the edge of the cell wheel pick up individual pellets from the seed chamber, with any surplus pellets falling back into the second seed chamber.
- With the rotation of the special hardened cell wheel the seeds are transported anticlockwise in the direction of the coulter.
- A **standard cover ring** protects the seed heart from sand and dust. This minimises friction and wearing of the seed heart and cell wheel.
- Along the hardened scraper ring the seeds are forwarded to the coulter. Finally a precise ejector pin supports the exact dropping time of the seeds.

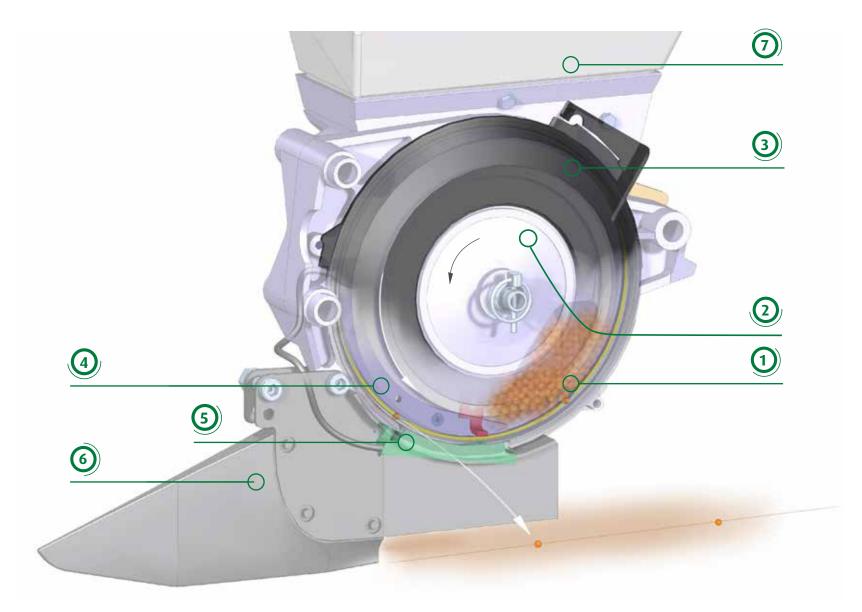
- Underneath the cell wheel there is the opto-electronic sensor which controls the correct function of the seed heart. In case of missing seeds, the sensor transfers a signal to the terminal. The opto-electronic sensor also serves as a low level sensor.
- Different coulter types are available: a standard, a deep (sandy conditions) and a hardened metal coulter with treated coulter tip to use in wearing soil conditions.
- The **seed hopper** with 9l content for approx. 1.5 packages beet seeds, is made from special plastic. This provides easy emptying and avoids sticking of e.g. coating.

Iowest standard deviation = High seed placement + Best plant distribution



Exact seed placement

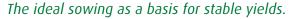
Kverneland's precsion drill achieved the lowest standard deviations both in mulch sowing or after plough.



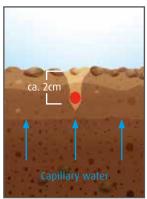
PERFECT SEED PLACEMENT MULCH AND CONVENTIONAL SOWING

The Unicorn sowing row can be used for conventional (ploughed land) and conservational conditions without any modifications. The aim of conservation sowing methods is to conserve the soil in times of sparse vegetation and during the early stages of beet plant life. The way in which the Unicorn works, not only conserves the soil but also causes only slight soil movement, in order to avoid germination of weed seeds.

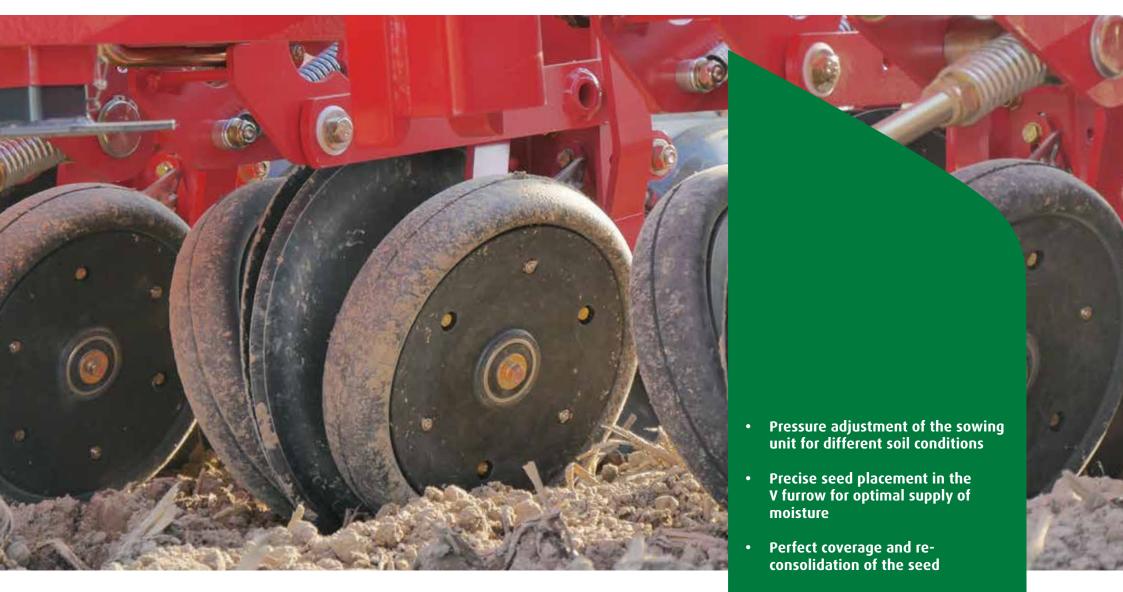
Double cutting discs (notched optional) in "V" formation with side-mounted wheels, in front of the actual drill, cut cleanly through organic crop residue. The following coulter opens a precise furrow, into which seeds can be placed exactly. The side-mounted wheels ensure constant depth guidance. With the standard seed coulter a low dropping height of only 3cm is possible which ensures excellent, precise seed placement. Finally two coverers provide ideal seed coverage with soil and close the furrow. A pressure roller provides the necessary reconsolidation for good seed-to-soil contact.











SOWING ROW UNICORNFOR LIGHT AND HEAVY SOIL

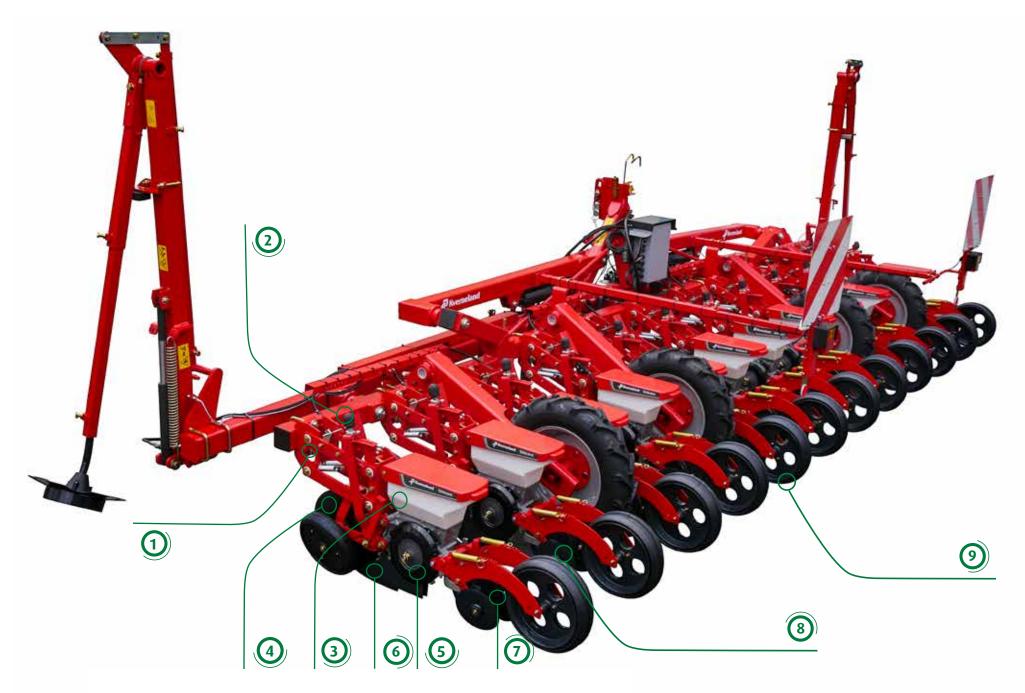
Optimal depth guidance is the prerequisite for precise sowing. The Unicorn sowing row can be used for both conventional as well as conservation sowing without any modifications.

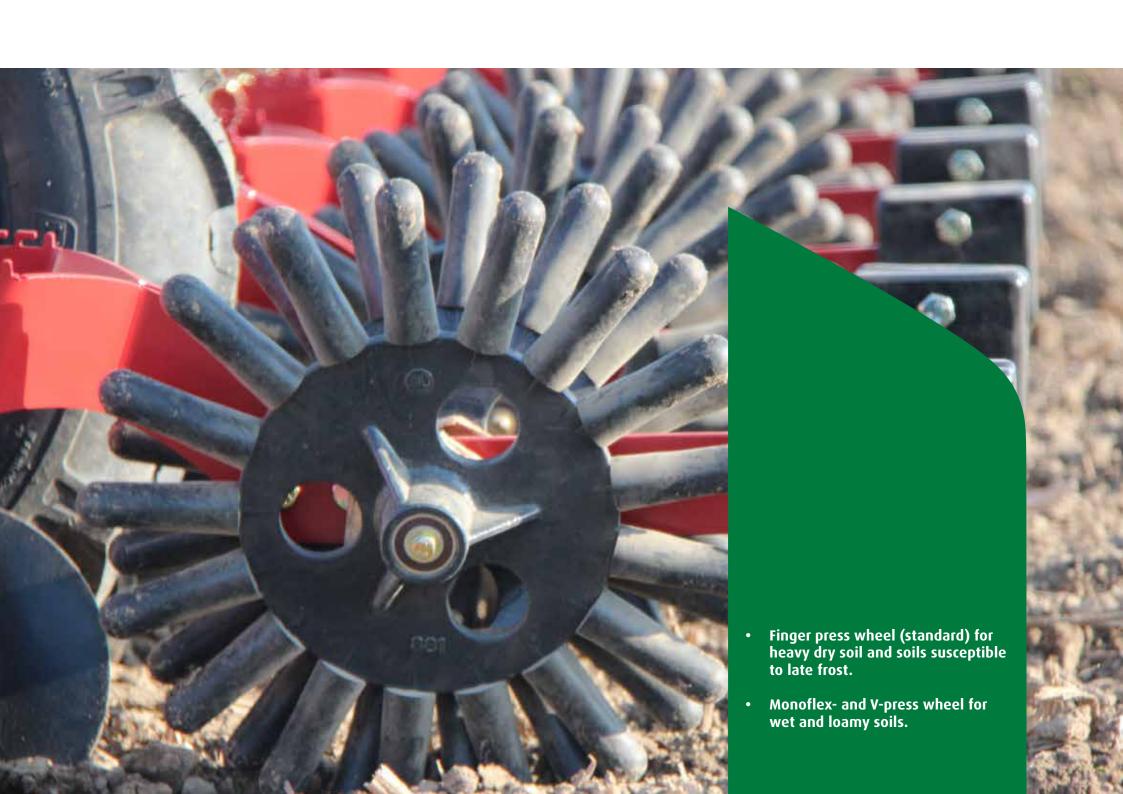
Versatility and reliability are key.

- Parallelogram guided with lifting device and the possibility of additional weight transfer by spring pressure of up to 50kg.
- Sowing depth adjustment of the depth quiding wheels by grid in 0.5cm steps.
- 9l seed hopper for approx. 1.5 packages of sugar beet seeds with large opening for easy filling.
- Toothed or smooth double-cutting discs with side zero pressure tyres for optimal preparation of the seed furrow and depth guidance.
- Unicorn sowing heart with mechanical or electric drive e-drive II.

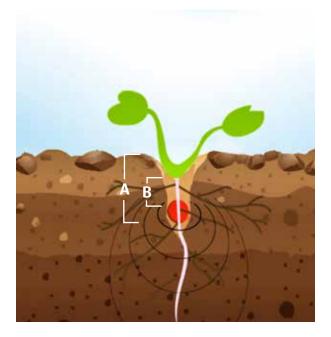
- The normal sowing coulter ensures an optimal V-furrow and can be additionally extended. Optionally a deep sowing coulter for a depth of up to 5cm and a special hardened metal coulter are available.
- The pivoting intermediate press wheel made of iron-cast with self-cleaning rubber ring ensures excellent seed-to-soil contact and re-compaction.
- Spring-loaded rotating coverer provides ideal soil coverage of the seed.
- The Finger press wheel (standard) ensures the best re-consolidation of the furrow.

 Optional Monoflex- or V-press wheels are available.





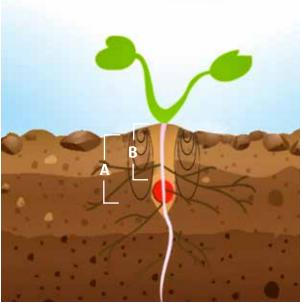
OPTIMAL SEED-TO-SOIL CONTACT CHOOSE THE RIGHT PRESS WHEEL



Finger press wheel

V-shaped coulter opens furrow. The seed is covered with loose soil by the adjustable coverer. The covering soil (B) is lower than the sowing depth (A).

→ A "Micro climate" then protects the germinated plant. Ideal for heavy dry soils and soils susceptible to late frost.



Monoflex- and V-press wheel (option)

The V-shaped coulter opens the furrow. The seed is covered with loose soil by adjustable coverer. The amount of covering soil (B) is similar to that of the sowing depth (A).

 $\, o \,$ Ideal for wet and loamy soils.

MAXIMUM FLEXIBILITY

FOR MAXIMUM PERFORMANCE

Unicorn precision drills are produced to meet all the practical requirements of today's agriculture, utilising the proven stability and open design of its toolbars.

Robust frame, maximum clearance and smooth running

Using the simple electro-hydraulic control, the parallel folding frames can be operated easily and safely from the tractor seat. Perfect seed placement is also achieved by optimal adaptation of the wing frame sections to the ground contour. Track marker arms with overload protection are standard. The toothed discs ensure clear marks. Additional equipment such as micro-granular applicators, tramlining control system or pre-emergence markers can easily be fitted.

Unicorn is equipped with maintenance free ball bearing lever change gearboxes, which are easily accessible and enable quick setting of sowing distances. The e-drive II version is identical to the mechanical model in its basic design, with the exception of the seeding hearts which are driven directly by a 12-volt motor. This eliminates the need for mechanical parts such as gearboxes, drive shafts and chains. With its wide variety of functions and operating safety, the Unicorn e-drive II can be controlled directly from the tractor cab using ISOBUS technology.

12-rows parallel-hydraulic folding frame: 6.0m workir	a width.	
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Unicorn Frame	Working width (m)	Rows
Rigid	3.0	6
Rigid with lengthwise transport device	6.0	12
Rigid with lengthwise transport device	9.0	18
Rigid with lengthwise transport device	12.0	24
Parallel hydr. folding	6.0	12
Parallel hydr. folding	9.0	18



18-rows parallel-hydraulic folding frame; 9.0m working width.



24-rows rigid frame with lenghtwise device; 12.0m working width.



UNICORN E-DRIVE II

CONTROLLING AND STEERING FROM CAB



With e-drive II each sowing unit is driven individually

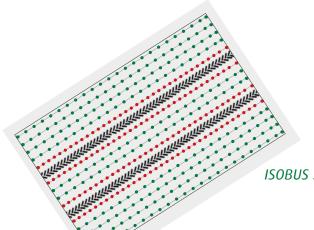
via an electric motor. All the data is entered and read

the move. All the sowing units can be switched off

individually. This solution saves seeds and money!

by an ISOBUS conform terminal like IsoMatch Tellus GO/ PRO. The sowing distances are infinitely adjustable on

e-drive II	
Individual row start and stop function	•
Variable seed rate per row	•
Variable seed rate adjustment during sowing	•
Two independent tramlining systems	•
Edge row effect (0-30%)	•
Opto-electronic control	•



ISOBUS Standard.

Edge row effect
The seed distance of the edge rows (red) e.g. seed lines next to tramelines can be adjusted in percentage from plus 0 to 30%.

Another benefit of e-drive II comes into play with the individual tramline control with edge row effect. As tractor wheels are wider than the normal 45/50 cm spacing of the seed rows, the tractor will destroy too many plants without tramlines e.g. for crop care actions. But with tramlines, there are less plants and therefore less yield. However, with the edge row effect almost the same

yields can be achieved. The seed rate e.g. in lines next to tramlines can be increased from 0 to 30 % (edge row effect). With e-drive II tramlines can be set up for every sprayer width.

The e-drive II features complete electronic monitoring of all machine functions. This includes the seed monitoring by opto-electronic sensors as well as the steering of hydraulic functions such as the control of trackmarker arms and folding processes. Only the design of the seeding heart and hydraulic functions enable the steering of all these functions without external power supply. All functions can be used without an extra generator or accumulator.

OPTIMISED CROP CARE

MICROGRANULE APPLICATOR



The demand for microgranule applicators is increasing. Micro nutrient and also small amounts of insecticides or fungicides ensure the best start of the crop.

The hoppers, made of special grade plastics, have a capacity of 35 litres. Depending on the working width, each hopper supplies up to 3 seeding rows. Application rates from 2.5kg up to 20kg/ha are possible. Alternative metering wheels are available to suit every application requirement for pesticides.

Optionally, a SURE FILL adapter secures the filling process. An electric switch-off solution avoids that microgranules are spilt on the headlands.

Operator-friendly

- Excellent overview
- Electronic monitoring of all functions
- Complete control of the machine from cab

Environmentally friendly

- Precise and defined application by GEOCONTROL and GEOSEED®
- Saving seeds

Return on investment

- Effective resource management
- Stable yields

State-of-the-art technology for the professional farmer.









Sowing Depth

The seeding depth can be adjusted easily, without the need of any tools, using the ingenious depth control system (0.5 cm steps). The front wheel mounted with a parallelogram ensures excellent depth control even in heavy soil conditions.



Pressure Adjustment

With the pressure adjustment (up to 50kg) the operator can individually adjust the coulter pressure of each row to any soil conditions to ensure an optimal sowing depth: 0kg in light and sandy soils, 50kg in heavy clay.



Coverer and press wheels

The pivoting spring loaded iron-cast intermediate press wheel with rubber ring, the rotating coverer and the Finger-, Monoflex- or V-press wheel ensure good seed to soil contact and best re-compaction for good emergence.

Equip your Unicorn according to your requirements.





SYNERGY EFFECTSFOR HIGHER UTILISATION

The Unicorn can also be used for sowing rape and chicory, this allows for the extended use of the machine, earning an improved pay back of the machine cost.

Precision drilling of rape has been used in seed multiplication for a number of years. Through increased use of hybrid rape varieties it is also becoming of interest to farms who wish to sow seeds in exact plants/m², thus saving seed costs. Precision-drilled rape is generally sown in row widths of 45 or 50cm. This row distance allows the use of mechanical weeding machines to destroy e.g. former rape in hybrides. Down the spacing will vary depending on location and variety between 20 and 40 seeds/m². Results from various testing facilities show that precision-drilled rape can achieve higher germination rates (nearly 100%) and the same yields. Whilst at the same time saving seed quantity and overall costs.

Profitable use with rape and chicory.

Pelleted chicory can also be sown with the Unicorn. The chicory is used for sugar extraction (Inulin) by the food industry. The row width is also 45cm. The seed is sown at a distance of 10cm in the rows and the sowing depth is extremely shallow at 0.5cm.







GEOCONTROL

COST SAVING WITH PAYBACK

The more precisely and evenly a seed is sown, the easier it is to work and harvest, and the greater the possible yield.

Seeding with GPS and GEOCONTROL in combination with a Unicorn e-drive II is a major step towards precision and cost saving. These machines are all equipped with ISOBUS technology which, with the help of the IsoMatch Tellus GO / PRO terminal, can be easily controlled.

Each electric driven seeding element, in combination with GPS and GEOCONTROL, is automatically switched on or off in exactly the right place, ensuring there is no overlap with any row that has already been sown. This is especially handy in triangular fields, on curved or irregular shaped headlands. You can also continue seeding at night since the switching on/off of the seed elements is completely reliable.

iM CALCULATOR APP - free to download

After filling in the required data, the calculator clearly shows what you can save in terms of money. With GPS it is possible to accurately seed, spread and spray without any overlap. The iM Calculator app calculates the cost saving by using those GPS functionalities.

The amount of seeds saved depends on the size and shape of the field and may amount to more than 5%.

The iM Calculator app for tablets is free to download from the App Store or Google Play. Please find the online calculator on our homepage:

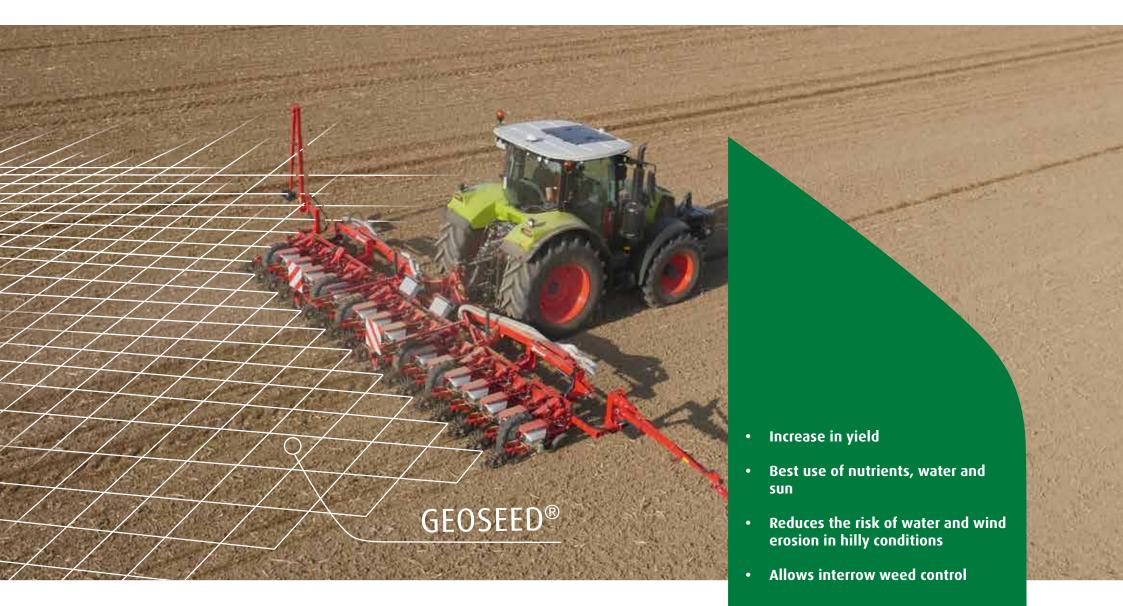
http://imcalculator.kvernelandgroup.com/#/





- No overlapping
- Quick row closing, no imperfection
- Decreased weed pressure
- Best suger beet development and quality









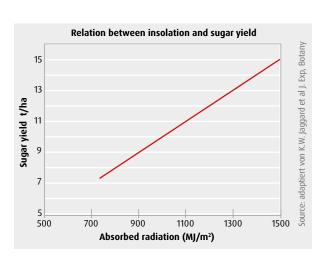
PATENTED 2-D SEED PLACEMENT

GEOSEED® increases the yields of row crops and ensures maximum efficiency. Seeds are placed perfectly in line and in relation to each other.

GEOSEED® Level 1 is the synchronisation within the working width. This improves the distribution of seeds up to perfection in parallel or diamond pattern: Positive effects are the best use of nutrients, water and sun. Also wind and water erosion is decreased. Level 1 needs no GPS signal.

GEOSEED® Level 2 is the synchronisation over the whole field. This is the necessary requirement for interrow cultivation, also across the seeding direction. GEOSEED® is the only system in the world that makes this mechanical weed control possible!

Biologically working farmers are also able to use a mechanic weed control across the seeding direction without injuring the plant. This saves costs and increases the turnover. With an exactness of 2.5cm yields are increased. With RTK GPS signal the synchronisation of rows can be done over the whole field of sugarbeet or maize, pumpkins or beans. Therefore a connection to a GPS signal is needed.



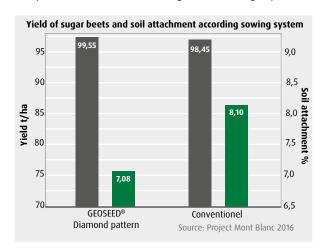


GEOSEED® - EFFICIENT HARVESTINGWITH LESS SOIL ATTACHMENT

Experiences from practising experts have shown that the right positioning of the beets in diamond pattern makes harvesting smoother with higher harvesting performance results. In particular the uniform loading of the harvester and the lower soil attachment allows to drive at higher speeds.

Higher harvest rate

In 2016 the consultancy initiative "Mont Blanc" found out in an experiment that the sugar beet yield in cultivation with GEOSEED® in diamond pattern is about 1t/ha higher than in comparison to classical precision sowing. In addition, the beets in diamond pattern can be harvested with less soil attachment. This is not only an advantage when determining the effective yield or sugar profit, but also increases the harvesting efficiency and transportability, and enables the use of sugar beet in biogas plants or in cattle feed.









ROW CULTURE AFTER STRIP-TILL STRIPEWISE SOIL PREPARATION

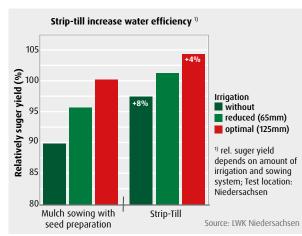
The soil is cultivated only within the stripes where the crop is intended to grow. Depending on the row width, up to 70% of the soil surface remains untouched. This technology does not only protect the soil against erosion and drying but also reduces the tillage costs.

Residue-free, deeply loosened seedbed ensures high emergence and deep root formation

By dividing the field into cultivated and uncultivated area, Strip-Till combines the advantages of direct seeding and seeding after plough. The solid soil and the layer of residues between the rows prevent erosion and support the storage of water. Within the row that has been cultivated by the Kultistrip, a fine crumbled seedbed is prepared, offering optimum conditions for the young plant.

In addition to the cultivation of the stripes the Kultistrip can implement a fertiliser layer in the soil at the same time. Thus providing the plant with optimum of nutrition. The plants can develop faster and the soil is covered earlier with vegetation due to a more earlier row closure. Finally the weed development is suppressed. By using GEOCONTROL there are no overlaps. Costs for fertiliser, seeds and chemicals are saved as well.

GPS control of the tractor is advised for the Strip-Till. The implementation of the RTK-signal (+/-2cm) guarantees a high precision and is therefore recommended. The working width of the Stip-Till implement should correspond to the working width of the precision seed drill or have its double width at maximum.



THE RIGHT SEEDBED

FOR MAXIMUM FIELD EMERGENCE

An optimal seedbed is the basis for high field emergence and thus for high yields. It requires a fine crumbled and uniform reconsolidated seedbed to allow an optimal seed coverage. At the same time best seed-to-soil contact is achieved when the seed is connected with the capillary water from deeper soil layers.

An optimal suger beet seed bed

Ideally seedbed preparation should not be deeper than the sowing depth. Structural weaknesses of the soil must be improved in many places by deeper processing, but in wet conditions and heavier soils this would be fatal. The goal is to avoid as many passes as possible to maintain soil aggregates and to ensure uniform reconsolidation.

Active equipment such as Kverneland power harrows and passive machines such as seedbed harrows (TLD and TLG see next page) or disc harrows (Qualidisc Pro and Qualidisc Farmer), which intervene less in the soil structure, can be used here. If there is a risk of field mice, the seed should not be sown too flat and must be re-consolidated directly. The occurrence of slugs can be reduced with good re-compaction to destroy cavities. A higher proportion of fine earth stops slugs finding places to hide.









Levelling

A straight levelling board or Clod board ensure effective levelling and first breaking of clods.



Depth control

The roller is fitted at the front, directly following the levelling equipment, to ensure depth control. Due to this position at the front, the risk of soil building up on the roller is reduced.



Cultivating / Crushing

Four rows of tines giving optimum soil flow and leave the soil aggregates. On sandy soils, the optimal loosening depth for the beets is 20 to 25cm, on clay soils about 15cm.



Crumbling / Consolidation

A finger harrow, a single or double crumber roller or a combination from standard- and Crosskill roller provide an excellent seedbed with good seed-to-soil contact. This ensures access to capilary water to start germination quickly.

SAFE ON THE ROAD EASY TO CONVERT









Easy conversion from working to transport position. All frame versions have a transport width of max. 3.0m. This ensures a safe road transport.

The parallel-hydraulic foldable frames can be steered comfortably from the tractor cab via one acting valve. Only low lifing power is needed due to the close centre of gravity. The bigger rigid frames with lengthwise transport device can be trailed by tractor linkage. They are homologated at 25 km/h in most of the European countries.







MANAGE YOUR FARM AS A BUSINESS WITH OUR ISOMATCH PRECISION FARMING OFFERING

Our precision farming offering is essential in managing your farming business with success. Applying electronics, software, satellite-technology, online tools and Big Data enables you to use your farming equipment more effectively and reach higher profitability of your crops.



iM FARMING - smart, efficient, easy farming

Speed up on the path towards connected agriculture. We offer you numerous options and solutions for how to produce more with less; utilise inputs more efficiently and thereby increase profits and sustainability.

Enhance your success with e-learning

IsoMatch Simulator is a free downloadable virtual training program. It simulates all functions of the IsoMatch Universal Terminals and Kverneland ISOBUS machines. Train yourself and make yourself familiar with your machine to avoid errors and enhance your machine performance.

The best overview in farm management

IsoMatch FarmCentre is the first of a series of telematics solutions. This fleet management solution is applicable for your ISOBUS machines in combination with an IsoMatch Tellus GO+/PRO. Whether you wish to control your fleet, manage tasks remotely or analyse machine performance data, IsoMatch FarmCentre provides this in an efficient web application, linking implements, tractors, terminals and the cloud in one continuous flow of data and connectivity.







Improve your performance Maximum efficiency, minimum waste

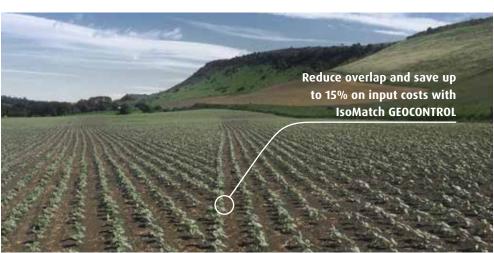
Be a PRO in increasing productivity

The IsoMatch Tellus PRO 12-inch terminal provides you with the optimal solution for an all-in-one control system inside the tractor cab. It is the centre for connecting all ISOBUS machines, running precision farming applications and Farm Management Systems. It offers everything you need to get the maximum out of your machines and crop, as well as cost savings in fertiliser, chemicals and seeds by using automatic section control and variable rate control. With the unique dual screen functionality it gives you the

opportunity to view and manage two machines and/or processes simultaneously.

Easy control management

The **IsoMatch Tellus GO+** is a cost-efficient 7-inch terminal, especially developed for managing the machine in a simple way. Easily set up the machine with the soft keys and simply use the hard keys and rotary switch for optimal control while driving.



Maximum savings!
The IsoMatch
GEOCONTROL
precision farming
application includes
Manual Guidance and
Data Management
free of charge. It is
possible to expand
this application with
Section Control and/or
Variable Rate Control.



IsoMatch Grip

This ISOBUS auxiliary device is made for maximum machine control and efficient farming. Operate up to 44 implement functions from one device.



IsoMatch Global 2

The IsoMatch Global 2 is a GPS antenna system with DGPS accuracy for the best precision and productivity possible.



IsoMatch InLine

Light bar for manual guidance including section status information. Manage the distance from the A-B line and steer for the ideal position.



IsoMatch (Multi)Eye

Connect up to 4 cameras to the IsoMatch Universal Terminals. It gives you full control and overview of the entire machine operation.



ORIGINAL PARTS & SERVICE LET'S FOCUS ON YOUR BUSINESS







MYKVERNELAND SMARTER FARMING ON THE GO

A personalised online platform tailored to your machine needs

With MYKVERNELAND you will benefit from easy access to Kverneland's online service tools.

First hand access to information on future developments and updates, Operator and spare parts manuals, FAQs and local VIP offers. All info gathered in one place.





TECHNICAL DATA



TECHNICAL DATA ROW

Unicorn sowing row	
Conservation sowing	•
Conventional sowing	•
Single hopper capacity (I)	9
Weight (kg)	63
Row weight transfer up to 50kg	•
Row lifting device	•
Clod deflector	0
Finger press wheel	•
Monoflex press wheel	0
V-press wheel	0
Double sided rotating coverer	•
Double cutting disc smooth	•
Double cutting disc toothed	0
Rubber cleaning wheels	•
Iron cast intermediate press wheel with rubber ring	•
Normal seeding coulter	•
Coulter for deep sowing until 5cm	0
Hardened metal coulter	0
Elektronic drive	•
Mechanical drive (chain)	•





Standard equipmentO OptionNot available

TECHNICAL DATA

Model	Unicorn					
Frame	rigid			parallel hydraulic folding		
Working width (m)	3.0	6.0	9.0	12.0	6.0	9.0
No. of rows	6	12	18	24	12	18
Row width (cm)	45/50	45/50	45/50	45/50	45/50	45/50
Transport width (m)	3.0	3.0 2)	3.0 2)	3.0 2)	3.0	3.0
Weight for basic version(kg)	400	910	1,750	2,800	1,250	2,180
Gear & Electronic						
Mechanic drive with 7 gear lever gearbox	•	•	•	-	•	-
e-drive II, ready for GEOSEED®	•	•	•	•	•	•
IsoMatch Tellus Pro	0	0	0	0	0	0
IsoMatch Tellus Go	0	0	0	0	0	0
Visus	0	0	0	-	0	-
Radar	•	•	•	•	•	•
Frame						
Linkage	Cat. 2	Cat. 2	Cat. 3	Cat. 3	Cat. 3 / Cat. 3N/2	Kat. 3 / Kat. 3N
Tyres 26x12.00STG	-	-	-	•	-	-
Tyres 5.00x15	•	•	•	0	•	•
Hyraulically operated track marker arms	0	•	•	•	•	•
Manually operated track marker arms	•	-	-	-	-	-
Pre-emergence markers	0	O 1)	O 1)	O 1)	0	0
Lighting Equipment	0	0	0	0	0	0
Track eradicator (2x2 tines)	0	0	0	0	0	-
Hydr. frame ballasting kit	0	0	-	-	0	-
	_	0	0	0	-	-
Lengthwise transport device						
Lengthwise transport device Microgranulat						
-	0	0	0	-	0	-
Microgranulat	O 35		O 35	-	O 35	-
Microgranulat Mikrogranule applicator		0		- - -		-

¹⁾ Risk of collision of pre-emergency marker and lengthwise transport devise ²⁾ Lengthwise transport device

Standard equipment Option Not available 0



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