

POTATO TECHNOLOGY
BEET TECHNOLOGY
VEGETABLE TECHNOLOGY

GRIMME

The MATRIX series



The MATRIX series

MATRIX is a mechanical precision seeder for 12 and 18 -rows, for seeding beets, canola and chicory. It is equipped with ISOBUS as standard and is seen as the continuous development of the well known KLEINE precision seeder technology, which has been proven in the market for over 35 years. The MATRIX can be equipped either for conventional seeding or for mulch seeding - both versions with high accuracy placement. For quick set-up times the frame can be folded hydraulically to a maximum width of 3 m within 12 seconds. The inner filled cellular wheels are driven via electric motors, this technology enables an exact, but easy to vary distance of the seed within the seed-row.



10 great features of the GRIMME MATRIX:

- future-proof operation
- ISOBUS (standard)
 - Only one operator terminal is required for all machines with ISOBUS-compatibility

- Fast movement between fields
- Quick folding in only 12 seconds
 - No sensors required
 - Parallel and synchronous folding
 - Road transport width for row width of 45 and 50 cm max. 3m

- High accuracy seeding
- Minimum drop height of the seed

- Easy seeding up to the edge of the field
- Dual marker arms with compact folding design for road transport without leaving the tractor cab
 - Low height in transport position

- Seeding of up to 27 ha without leaving the cab.
- Seed hoppers with a capacity of 100,000 beet seeds
 - Very useful scale for partial filling
 - Simple emptying for left over seed

- Exact depth control
- With conventional and mulch seeding
 - At high working speeds
 - With equipment for mulch seeding
 - Pressure load of the seeding units can be varied mechanically up to 90 kg (standard)
 - Hydraulic pressure load of the seeding units can be varied up to 150 kg (option)

- Seed Savings
- Automatic Section Control (option)

- Optimal seed pressing
- Heavy 5 kg, rubber covered cast iron pressure roller
 - With height and sideflexing (curved seeding)
 - The load onto the pressure rolls can be varied mechanically up to 7.5 kg (standard)

- Outstanding compaction
- Fingertip press wheel for universal use
 - Monoflex wheel for light soils
 - V-Farmflex wheel for heavy soils
 - Rear covering rollers especially suitable on loose (silty / sandy) soil

- Optimised crop yield
- Variable rate seeding
 - Clever Planting: Adaptation (reduction) of the seeding distance in the seed rows beside the spraying tracks (standard)

The main frame with parts for tractor attachment

The basis for precise seeding is the correct attachment of the precision seeder to the tractor. GRIMME offers various options for the safe attachment of the MATRIX to different tractor sizes. With its hydraulic parallel folding without any additional sensors, the MATRIX enables the fastest folding on the market. Two versions of tracking loosening tines enable optimum loosening and levelling of the tractor tracks. The lane markers make it child's play to perfectly align the next lane.



Reliable attachment

of the MATRIX 1200 either with a lower guide-shaft CAT 2 or CAT 3 as well as the MATRIX 1800 with CAT 3. The lower guide-shaft of the MATRIX is fitted in a movable way for optimum adaptation to uneven ground.



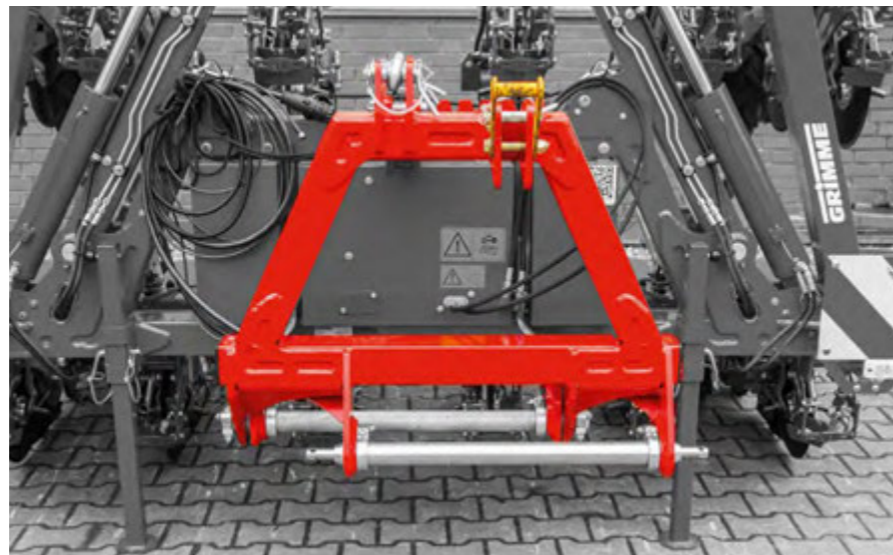
Always the optimum traction point

thanks to three upper link holes and the two slotted holes for mounting the lower guide-shaft on the mounting kit. This allows flexible adaptation to any tractor size.



Optimum seed placement

even on tractors with a track width of 1.50 m and a row width of 50 cm. The optional available offset-frame allows the machine to be attached offset, so that the seeding units do not run in the tractor track.



Safe and compact parking

of the machine in the folded state by means of the easily adjustable jack stands at the front of the main frame.



NEW

Relief of the wheels

Two optional parking supports at the rear side relieve the load on the wheels when the machine is parked for longer periods in the folded state, e.g. after the season.



Tidy hoses and cables

after the machine has been parked thanks to the hose cabinet located centrally on the main frame.



Quick set-up times

due to hydraulic parallel folding in only 12 seconds without any sensors. The maximum road transport width is 3 m for row width of 45 and 50 cm.



Smooth running

and exact depth control of the entire machine thanks to four wheels (MATRIX 1200) and six wheels (MATRIX 1800) with a dimension of 5.00-15.



Additional storage space

provided by two storage compartments in the main frame. Useful for the additional transport of seeds for up to four hectares or alternatively for a vacuum cleaner for easy emptying of the seed boxes and additional seed for up to two hectares.



Smooth and steady work

The optional harrow allows the seeding units to work steadily on light, pourable soils. The tine rakes can be adjusted in working depth and aggressiveness via the perforated rail. The result is a loosened and levelled track and thus a more even seedbed.



Working without blocking

Blockage-free operation of the seeding units on heavy soils even with a high amount of mulch due to the spring tines. The optional Crossboard can be adjusted in working depth and aggressiveness via perforated rail. The result is a loosened and levelled track and thus a more even seedbed.

Clearly visible marking

in all conditions by the optional lane markers. The serrated discs are equipped with a thrust ring for safe depth limitation.



Easy seeding up to the edge of the field

Lane markers can be lifted and folded hydraulically from the tractor's cab, so that a machine width is not exceeded during road transport.



Operational safety

Shear bolts, which are available directly next to the track indicator arm, minimise downtimes. Two shear bolts are fitted as a replacement.



Safe road travel

in the dark with the optional lighting package including position lights and warning boards at the front and lighting and warning boards at the rear side of the machine.



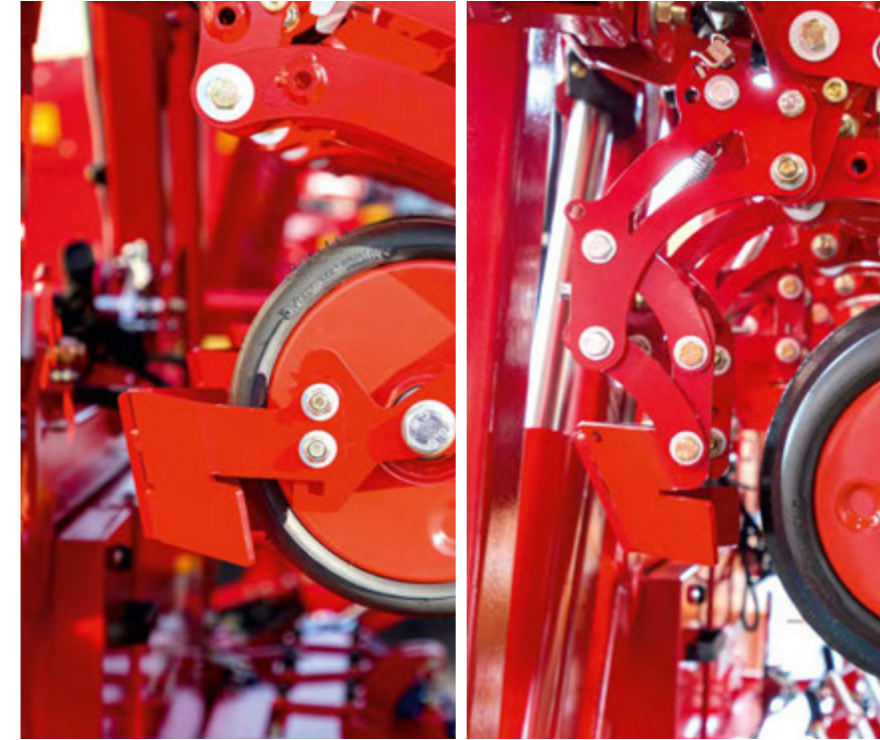
The seeding unit

The heart of the precision seeder is the seeding unit. The MATRIX fulfills all requirements that the grower desire: Conventional seeding unit or seeding unit for mulch seed. Both versions lead to highest precision in seed placement due to the minimum drop height and the so-called "zero-differential-speed" for the drive of the cellular wheel. Further advantages are the stable running of the machine even at high seeding speed due to a suspension of the seeding units in a parallelogram; the exact depth guidance for a perfect field emergence and growth; large seed boxes for high acreage and the largest variability of caster wheels on the market. Due to the uninterrupted frame above the seed-meter, no loads are transferred into the seed-meter, thus protecting it from damage.



Seeding unit for conventional seeding

The conventional seeding unit is perfectly designed for use on ploughed, conventionally cultivated areas.



Perfect preparation

of the seeding, even on soils with a lot of clods, thanks to optional clod clearers in front of each seeding coulter. For an optimal adjustment to the ground contour the clod clearers are guided in a parallelogram. In case of mulch seed equipment, the intensity of the clod clearer can be adjusted via tension springs. Its working depth is determined by a simple wing screw. The result is a clod-free seed row.

Seeding unit for mulch seeding

The seeding unit for mulch seeding is ideally suited for use on areas with reduced tillage intensity. The V-shaped cutting discs with lateral fitted depth control wheels run in front of the seeding and cut organic material on the surface.

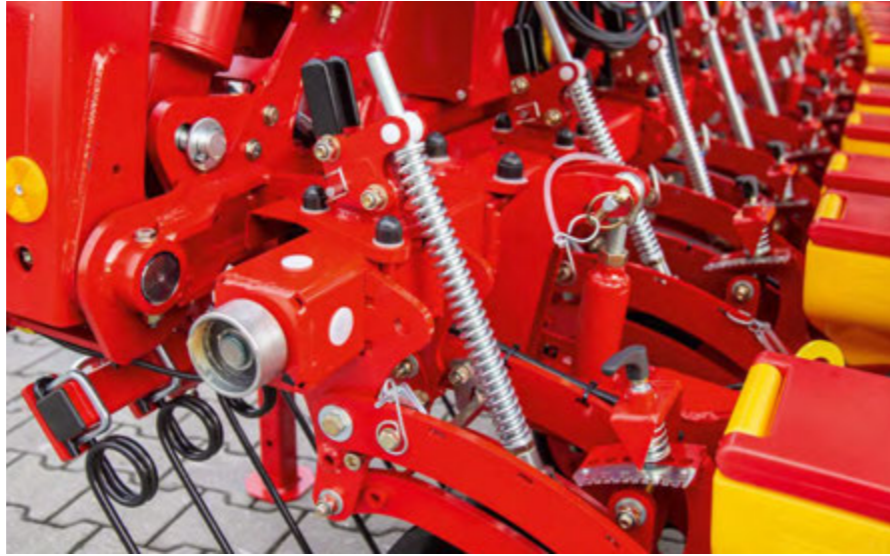


Exact adjustment of the depth guidance

via an excenter-lever in several steps of 0.5 cm. The depth guidance can be modified in a range of 5 cm for a fine adjustment. The perfectly reproducible placement depth of the seeding units ensures a uniform emergence of the seed.

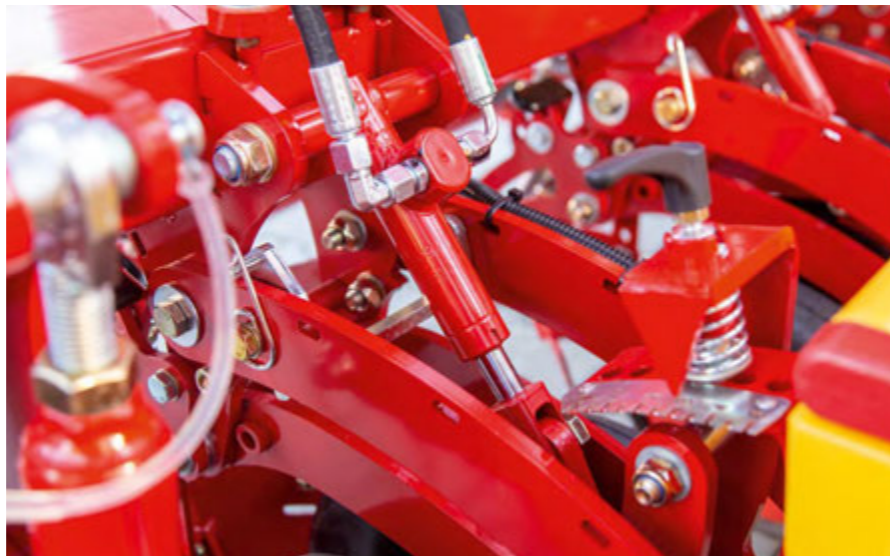
Tool-free adjustments

Tool-free mechanical adjustment of the pressure, which is set to the seeding coulter as standard, in case of equipment for mulch seeding. The additional mechanical load is a maximum of 90 kg.



Perfect positioning

of the seeding units thanks to the optional available hydraulic pressure load, which can be set to the seeding coulter. Including a hydraulic ballasting of the mainframe for mulch seed equipment. The load is infinitely adjustable from 0 to 150 kg per seeding row. The pressure load is set centrally for the entire machine. This option is perfect in conditions which change frequently.



Hydraulic ballasting of the mainframe

to ensure the optimum and smooth run position of the seeding units even at the highest coulter pressure. The hydraulic ballasting of the mainframe is always part of the hydraulic pressure support.



Seeding of up to 27 ha without leaving the cab

due to the large seedboxes for at least 1.5 units of beet seed and high acreage. The seed boxes are conveniently accessible and easy to fill by opening the folding, dust proof covers.

Simple and quick partial filling

of the seed boxes thanks to the internal scale.



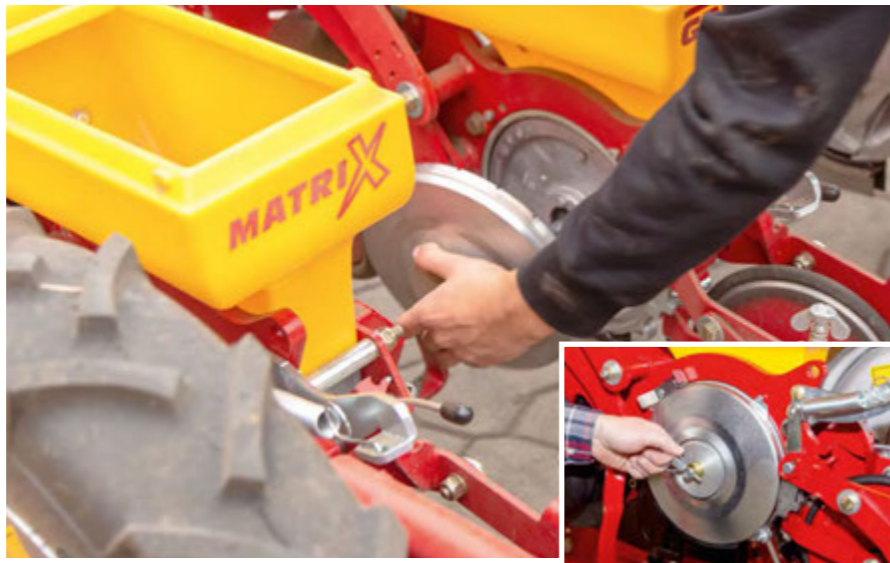
Precise seed placement

due to the high-precision singling of seed and minimum drop height of the seed into the seed furrow. The inner filled seed plate also provides an exact seed spacing and maximum mechanical seed protection. Different kits are available for seeding of canola and chicory.



Quick change

of the cellular wheels by simple and tool-free disassembly and reassembly using a spring and lynch pin.



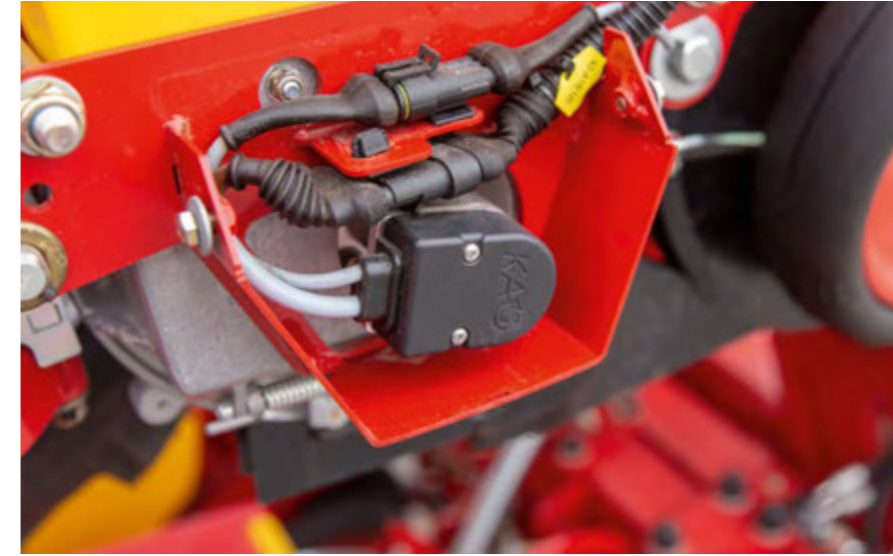
Protection against damage

and sticking soil by an optional available cover of the cellular wheel. Tool-free, quick and easy dismantling allows an easy access of the cellular wheel.



Highest accuracy of seed placement

even at high speeds due to the maintenance-free electric drive of the seeding units. The electrical drive is the basis condition for Section Control and Clever Planting.



Easy and fast change from one seed to another

to reduce unproductive idle-machine times an easy to use spring-loaded, tool-free emptying flap is fitted to each seed box. The covers of the storage compartments can be used to collect small residual amounts.



Complete emptying

without dismantling of the cellular wheel e.g. in case of changing the variety. The vacuum cleaner is housed in a storage compartment of the main frame for quick access. A socket for power supply for the vacuum cleaner is easily accessible at the rear side of the main frame.



Optimum germination conditions

due to the standard deep seeding coulters, which work below the level of the cutting discs, especially in dry conditions. This creates a stable seed furrow as the seed coulters do not work in loosened soil. Early closing of the furrow is prevented. The seed pill does not lie in the loosened soil, but directly on a humid, water-bearing layer.



Low wear

with the seeding coulters type "flat" (with low side blades, available as an option). As this coulters type is designed with 10 mm lower side blades, it works at the same depth as the cutting discs in front of it and thus always in a soil which is already loosened. The optical sensor used as standard in both coulters is used for exact seed placement and to avoid missing plants.



Optimal seed pressing

in all conditions due to the 5 kg rubber covered intermediate press wheel. In order to prevent seed pressing out of the furrow in curvy conditions, the intermediate press wheel is mounted in a pendular way. The optional available spring-loaded pressure support allows up to 50% higher load for a smooth running even at high speeds.



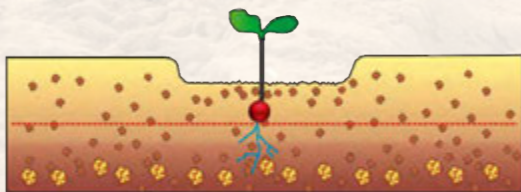
Sufficient fine soil

to cover the seed furrow. Discformed furrow closers are fitted as a preparation for the recompaction by the caster wheels (standard). The working depth can be adjusted without tools.

On intensively pre-treated seedbeds

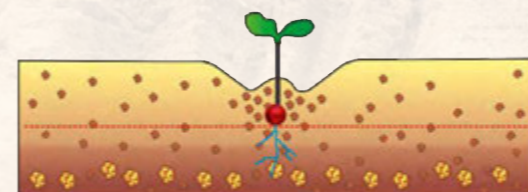
the optional available furrow closing-plates are the ideal solution for covering the seed furrow with fine soil (e.g. after tillage with the plough). The working depth can be adjusted without tools.





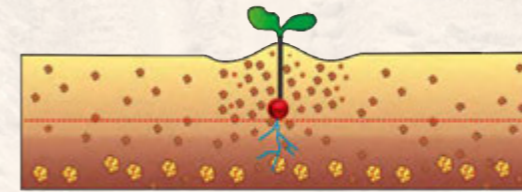
① Covering roller

The covering roller is particularly suitable on flowing, slippy, silty soils, which provide enough humidity and capillarity without additional load. Since the soil is not compacted intensively, there is a low risk of silting.



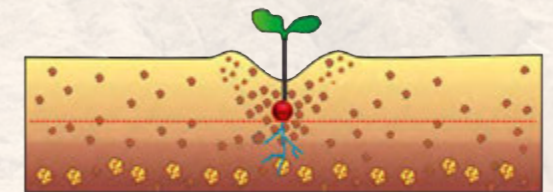
② V-Farmflex roller

The V-Farmflex roller is suitable for heavier soils, as the seed furrow itself is not rolled over and compacted, but pressed from both sides. Variable angles of the rollers influence the flow of soil into/on the seed furrow. When using the equipment with V-formed Farmflexrollers there are no additional furrow closers.



③ Monoflex-roller

The Monoflex-roller is ideal for loamy soils and soil with a high risk of erosion. The higher coverage of the seed with soil prevents the seed row from being slurred respectively drifted over.



④ Fingertip press wheel

The fingertip press wheel can be used universally on a wide range of different soils. The seed is only covered with a small amount of soil. This allows the soil to warm up fast, enabling a rapid field emergence.

Operational functions

Thanks to the standard ISOBUS technology, the MATRIX is equipped with a future-proof operation concept. The complete control and monitoring of the machine is carried out from the tractor cab via various ISOBUS terminals available for selection. Operation via ISOBUS-compatible terminal from the tractor manufacturer or an ISOBUS terminal from any other manufacturer is possible too. Features such as Clever Planting (standard) or Section Control (option) in conjunction with a GPS-system on the tractor provide seed savings, precise seeding and perfect, uniform growth. Subsequent work for plant care and harvesting are simplified and yields maximised. The hectare meter is standard equipment. Of course, MATRIX can also be integrated into the Internet-based customer portal myGRIMME.



CCI 800

is the ISOBUS operation terminal with a screen of 8 inch and an intuitive MultiTouch operation like a tablet or a smartphone. Additional features such as Section Control can be integrated at any time. A connection to the data-exchange platform "agrirouter" is also possible. You can also display the image of an additional camera. The unique help system provides the driver with additional information about the currently selected functions.



CCI 1200

is an ISOBUS operation terminal with a screen of 12.1 inch and an intuitive MultiTouch operation like a tablet or a smartphone. The layout of the screen can be arranged individually in portrait or landscape format as well as in MaxiView. Two ISOBUS-compatible machines can be displayed and operated simultaneously. Features such as Section Control and a connection to the agrirouter are also possible. The unique help system provides the driver with information about the currently selected function.



Operation via tractor terminal

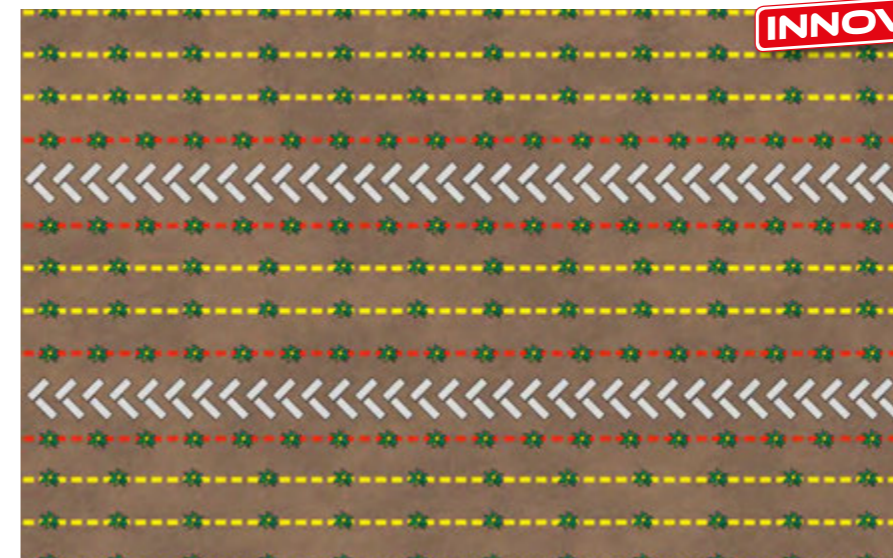
or via an ISOBUS terminal from another terminal manufacturer is possible at any time due to the ISOBUS standard. Section Control and other functions can be used as usual.



INNOVATION!

Optimised crop yield

by Clever Planting (standard), which automatically reduces the seeding distance in the rows next to the spraying tracks. The result is a more even growth and a higher yield.



Seed Savings

and reduction of mass losses when harvesting. Section Control is the perfect feature to avoid ineffective cross-seedings at the headland.



myGRIMME **NEW INNOVATION!**

The new Internet-based portal myGRIMME for final customers provides access to machine-specific equipment and many other functions. In addition, all GRIMME machines are clearly displayed. Spare parts can be easily and quickly identified, located and ordered via myGRIMME shop.

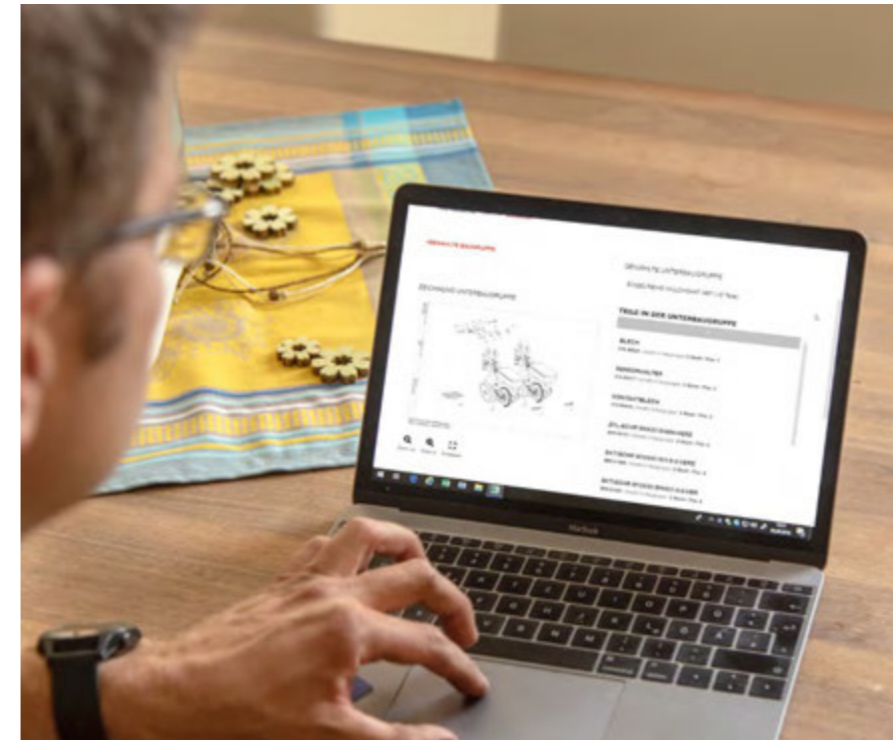
My Machines

All registered machines are displayed clearly with their specific machine options. Machine specific documents such as operator manual and spare parts book can be accessed at any time.



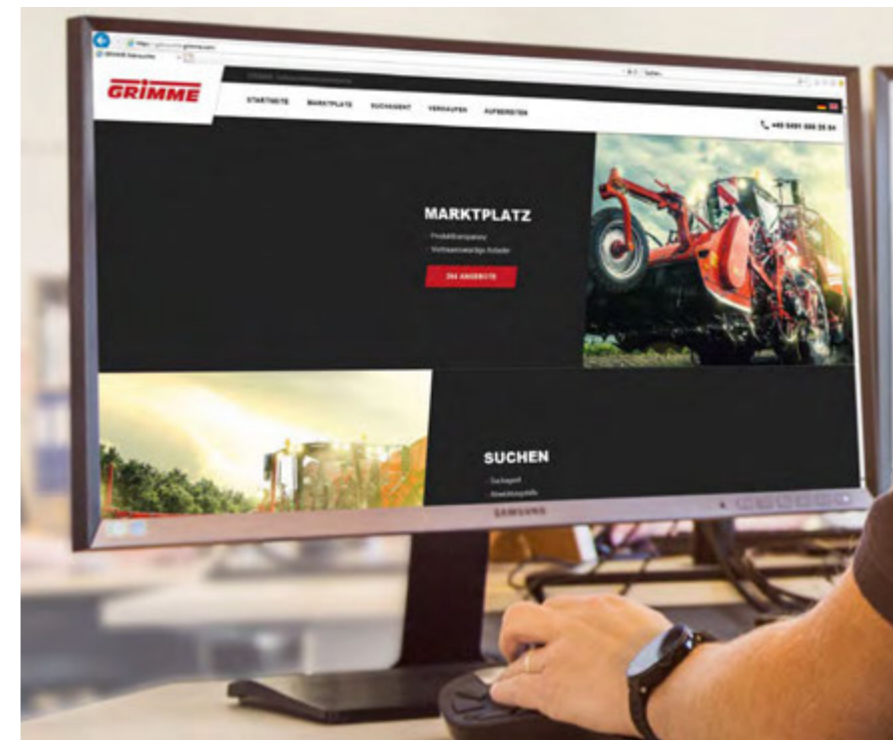
Fast identification of spare parts

by the specific spare parts list for your MATRIX. Identify and locate easily the required spare parts, that you need.



Order online

Order your identified and localized spare parts online through the new myGRIMME shop.



Additional functions

such as the online configurator or portal for used machinery are already integrated in myGRIMME. Additional applications will be incorporated in the next stages of development, so that you as a user will receive a permanently growing added value in myGRIMME.

MATRIX 1200/1800

Standard equipment

	MATRIX 1200	MATRIX 1800
Length		1900 mm
Length in transport position		1900 mm
Width at row width 45 cm	5440 mm	8000 mm
Width in transport position at row width 45 cm	2860 mm	2730 mm
Width at row width of 48 cm	5580 mm	8700 mm
Width in transport position at row width 48 cm	2950 mm	3500 mm
Width at row width 50 cm	5790 mm	8800 mm
Width in transport position at row width 50 cm	2950 mm	3000 mm
Height in working / transport position	1420 / 2560 mm	1420 / 3500 mm
Approximate empty weight at row width 45 cm and 50 cm, version for mulch seeding	1800 kg	2800 kg
Approximate empty weight at row width 45 cm and 50 cm, version for conventional seeding	1700 kg	2600 kg
Number of rows	12	18
Row width		45 / 48 / 50 cm
Lower linkage category	2	3
Volume of the seed hopper per row		10 l
electrical drive of the cellular wheel		X
Pressure load can be varied mechanically in four steps up to Landwheels		90 kg 5.00-15
Number of support wheels	4	6

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Grimme product range beet technology

Seeding technology, 12- and 18-rows



Harvesting Technology, 6-rows



Self-propelled harvesters, 6- rows





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