

Vegetable technology

Various options for the successful vegetable growing



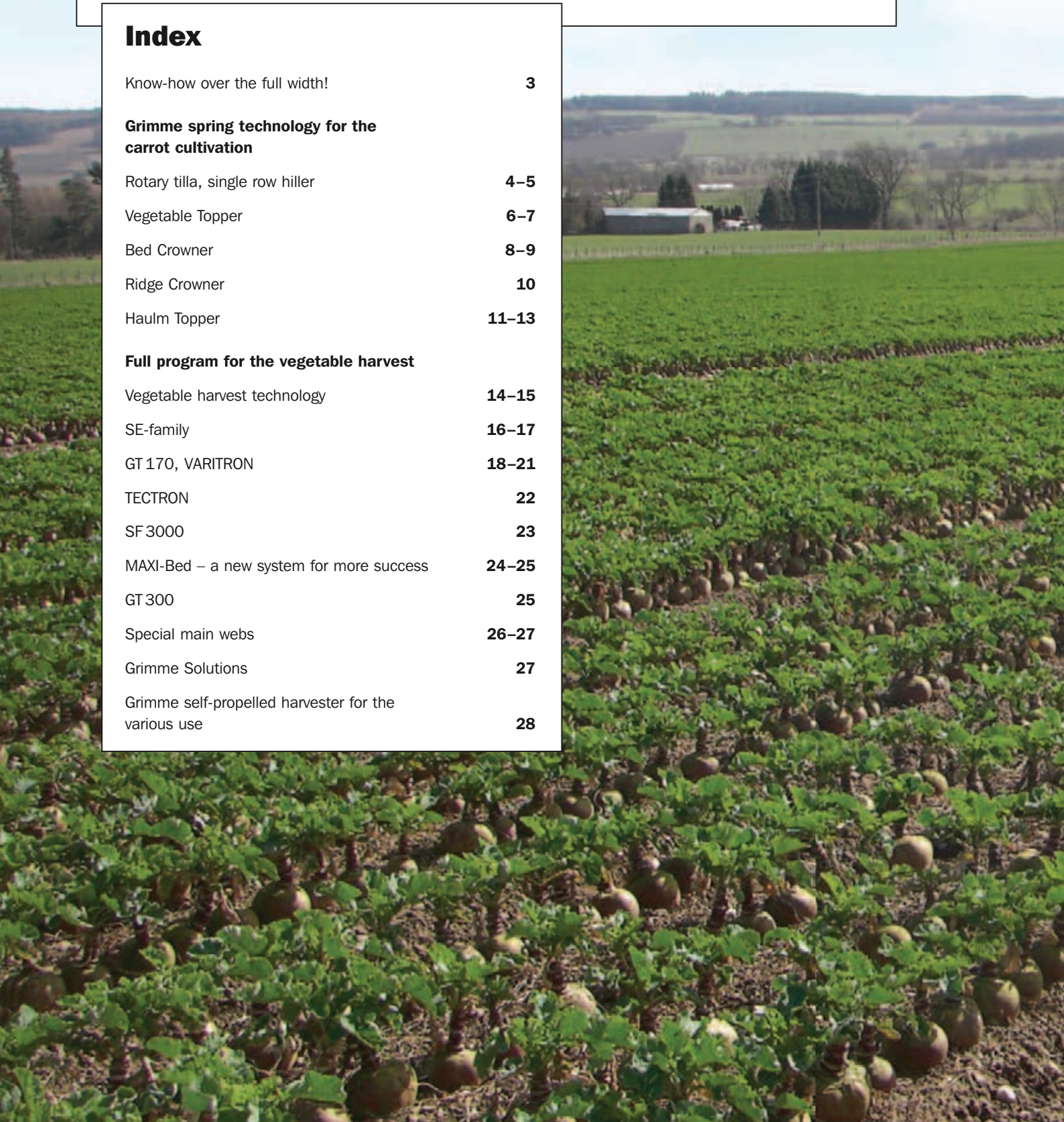
Vegetable: culture with special characteristics

Knowledge is necessary for the successful vegetable cultivation starting with a good ground preparation for the seed, correct cultivation and gentle harvest. Trust in the experience with which Grimme has developed

agricultural machinery for the professional grower for decades. Benefit from the various options we offer for the different conditions and crops. For harvesting success in the future.

Index

Know-how over the full width!	3
Grimme spring technology for the carrot cultivation	
Rotary tilla, single row hiller	4–5
Vegetable Topper	6–7
Bed Crowner	8–9
Ridge Crowner	10
Haulm Topper	11–13
Full program for the vegetable harvest	
Vegetable harvest technology	14–15
SE-family	16–17
GT 170, VARITRON	18–21
TECTRON	22
SF 3000	23
MAXI-Bed – a new system for more success	24–25
GT 300	25
Special main webs	26–27
Grimme Solutions	27
Grimme self-propelled harvester for the various use	28



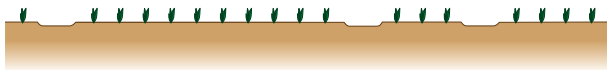
Know-how over the full width!

The vegetable cultivation often needs special customized solutions. Grimme has the know-how to adopt proven machine concepts for the use in various special root crops. Benefit from this knowledge for more success in

cultivating and harvesting root crops. No matter how you cultivate your vegetable we will find the right solution.

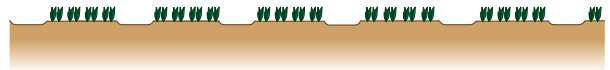
Cultivation 1x1:

Single row cultivation



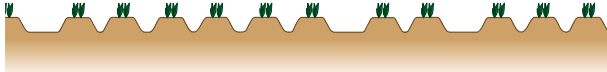
The row width (3) is one of the deciding factors in the single row cultivation. Together with the growing depth is it the key point for the necessary version and alignment of the digging unit.

Bed cultivation



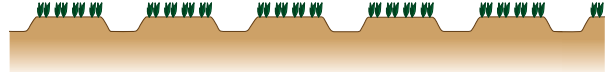
The tyre width (2) and track width (1) of the tractor decides the bed width. For the harvest the bed width at the sole (D) and the crown (A) is decided.

Ridge cultivation



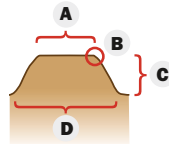
Vegetables are sensitive for water logging. That is one reason for ridge cultivation. Depending on the alignment on the ridge we are talking about single, double or triple rows.

Separated bed cultivation

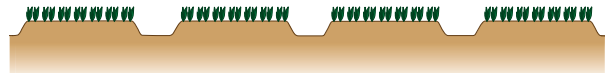


Soils with high clod and stone content should be separated before planting. With the mechanical separating the ground is loose and ventilated. The bed width is based on the track width (1). Traditional track widths are 1.5 or 1.8 m.

- A** Ridge or bed crown
- B** Ridge or bed shoulder
- C** Ridge or bed side
- D** Ridge or bed sole

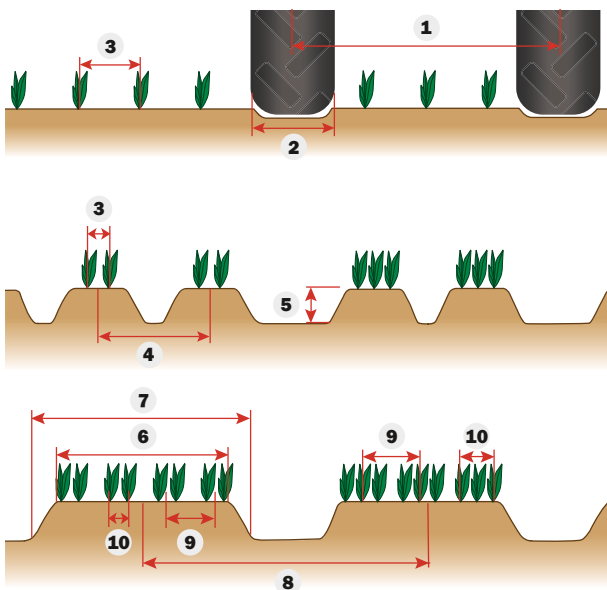


(Separated) MAXI-Bed cultivation



With the MAXI-Bed system Grimme started a new area. With a 2.7 m track width increases the net cultivation area about 10%. So, harvesting success in a new dimension.

Modest planning – harvesting success



- 1** Tractor track width
Centre tyre to centre tyre
- 2** Tractor tyre width
Normally same as the bed distance
- 3** Row distance
- 4** Row width
Normally same as the ridge distance
- 5** Ridge or bed height
- 6** Ridge or bed crown width
- 7** Ridge or bed overall width
- 8** Bed distance
Centre bed to centre bed
- 9** Average row distance
Distance double row centre to double row centre or
Distance triple row centre to triple row centre
- 10** Inner row distance

Grimme spring technology for the carrot cultivation

With heavy ground the ridge shape is very important. Rotary Hillers loose and ventilate the soil, reduce clods and therefore increase the sieving output during harvesting. This means

that for the customer ideal growing of the root crop in the loose soil, higher output of even grown crop for the market are achieved. And the economical effect is: less people are

necessary in the picking area to remove clods from the harvester and a higher sieving capacity in the machine.

SPRING TECHNOLOGY

Fine preparation for fine seed – precise and powerful with Grimme

Rotary Hiller for a full field cultivator for light soil: simple to adjust and with exact depth guiding. The power transfer takes place via a durable spur gear drive. The option of the two-sided drive is ideal for deep cultivation for field crops.

The clamp for full width operations (2) can be removed with a few manual actions to use the machine in ridges.



Low wear and tear on any soil! (1)

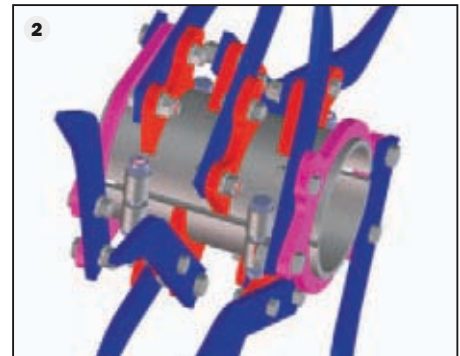
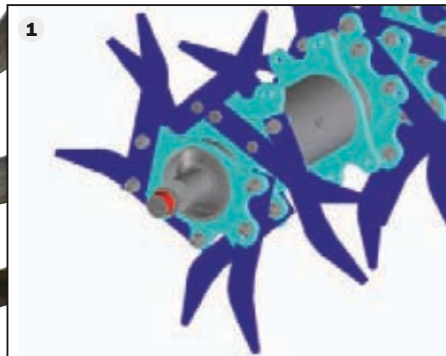
Basic cultivating tines: are coated with additional wear and tear protection



Wide cultivating tines: as hard as diamond due to hardening under vacuum pressure



Special cultivating tines: with resistant hard metal, specifically for stony soils



Precise depth control and high load capacity with standard support wheels (3), twin support wheels (4) or wide support wheels (5) available for all Rotary Hillers.





Attractive shape and stable: the hydraulically ridge pressure roller behind the cultivator for carrots to prepare the perfect seedbed. The ridge crown width is variable and possible to adopt to single, double or triple rows. Smooth sides enable easier mechanical weed control later.

Enough room for your vegetable: single row shaper with open top



Well shaped ridges from the beginning! Single row shaper with open top (1) is ideal to shape ridges with emerged crop and therefore for mechanical weed control. All single row shaper are singularly suspended (2) and spring loaded (3). The double toolbar consists of a robust welded frame (4) onto which a choice of ridging bodies, discs or tines can be fitted.

HARVEST PREPARATION

Grimme Vegetable Topper: makes topping easy

No matter if you cut
of the heads on the
ground (1) ...



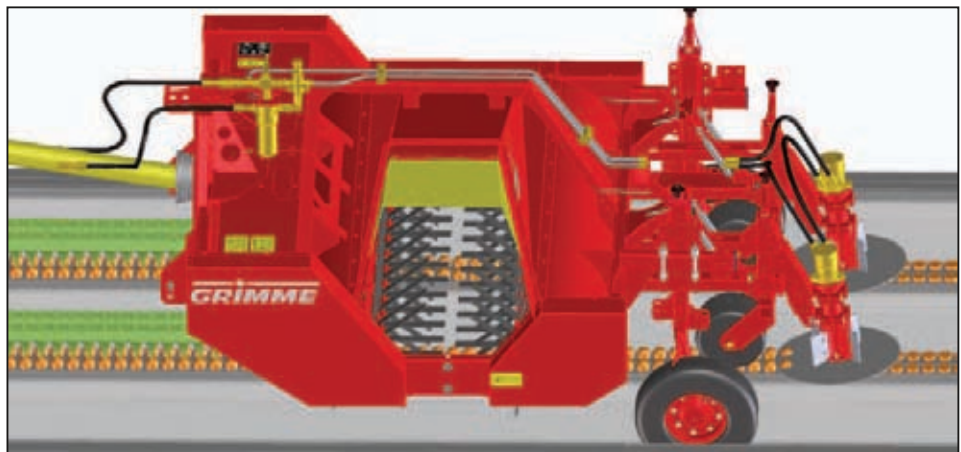
...on the ridge (2)...



... or in the bed (3) you
always get the right cut
for your conditions. With
the detachable tunnel it
is possible to change the
discharge from the r/h- to
the l/h-side.



As much as possible, as less
as necessary: you decide how
much haulm stays on the top!
Simple settings and quick change
of the cleaning flails enable the
adoption to the various conditions.



Ridge crouner is extremely
successful following a Vegetable
or Haulm Topper. First most
of the haulm is removed then
the Ridge Crouner cuts the
tops off for a clean cut at the
required height.

Cause simple is just simple: the
awarded QUICK-FIX for a quick
change of the flail shaft. With
a few simple manual steps
you can react to the
changing haulm
conditions. An
awarded solution!



Simple and quick: first loose
the screw ...



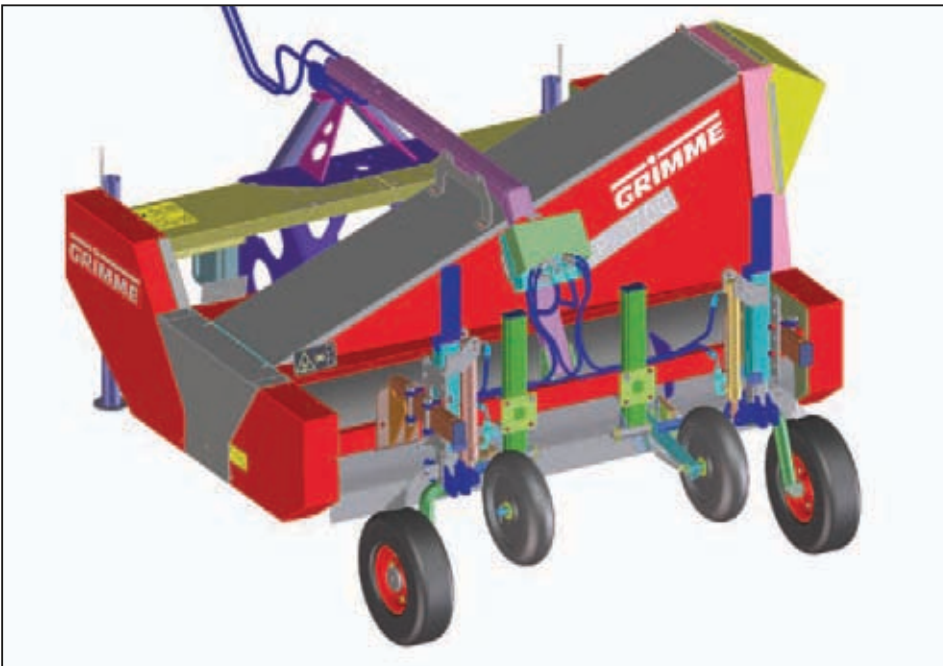
... then change the flails ...



... and tighten the screw again.
Ready!



Depth control as required.
Two running wheels at the front with spindle adjustment.
As option two additional rear wheels with spindle adjustment or for more comfort with hydraulic adjustment is available.



NEW

Automatic hydraulic depth control with leveling adjustment via two centre feeler wheels.
To cut off exactly as much haulm as wanted. Even in uneven fields.
Also to ensure that in stronger conditions that as much haulm as necessary is left on the crop for storing or direct market.

	KP 1700
Working width	1,700 mm
2 shafts with rubber flails	1,000 r.p.m.
Tractor mounting	Front or rear mounting possible
Running wheels Ø 460 mm	2 pcs. standard / 2 as option
Discharge	Right or left-hand side (possible to change)
Required power p.t.o.-shaft	Approx. 20 kW
P.t.o.-shaft speed	1,000 r.p.m.
Length	2,400 mm
Width	2,060 mm
Height	1,500 mm
Weight	900 kg

Technical data
Vegetable Topper KP 1700

START TO HARVEST

Grimme Vegetable Crowner: row independent and powerful

*Either for front mounting to
a self-propelled harvester...*



*... or rear mounting to the
tractor – the Vegetable
Crownner cuts off the haulm
with side discharge.*



*Depth control: the rotor is
fitted to a compact frame
and guided with 4 running
wheels with spindle
adjustment exactly
over the bed.*





Active pulled cut. The rotor with manual driven discs for excellent clean heads. If necessary it is possible to change the turning direction.

(The safety cover was removed for the picture.)



Roller drive: use the optional roller chassis for an even depth control in fields with uneven tracks.

	BK 1700
Working width	1,700 mm
Rotating, concave discs	6 pieces, Ø 300 mm
Disc speed	Approx. 225 r.p.m.
Tractor mounting	Front or rear mounting possible
Required power p.t.o.-shaft	Approx. 30 HP
P.t.o.-shaft speed	800–1,000 r.p.m.
Running wheels	4 pieces, 500 x 8"
Length	2,600 mm
Width	2,550 mm foldable to 1,800 mm
Weight	750 kg

Technical data
Vegetable Crowner BK 1700

The Ridge Crowner: for flexible use and precise work

As a single unit or in combination with the Vegetable Topper or Haulm Topper, the Ridge Crowner delivers the perfect solution. The individual depth control in the parallelogram adjusts always to the ridge shape without putting pressure on the ridge crown.

(The safety cover was removed for the picture.)



Perfectly scalped carrots.



The large discs of the Grimme Ridge Crowner are specially insensitive to stones. The single hydraulic drive ensures flexible use with Vegetable Topper, Haulm Topper or other existing machines.



Technical data
Ridge Crowner

	DK
Hydraulic motor oil supply	10 litres per minute
Necessary hydraulic motor pressure	150 bar
Serrated discs	Ø 480 mm
Disc speed	Approx. 200 r.p.m.
Disc depth control	Each with 1 air wheel; Ø 270 mm, 185 mm wide
Simple attachment to	Tube 80 x 50 mm

Haulm Topper of the KS- and HT-series: achieving more quality

Grimme has built for many years 2- and 4-row Haulm Toppers for the vegetable farmer. The water loss after the harvest decreases immensely if the haulm is removed. You achieve a lasting fresh crop

and also enabling the harvest without haulm and trash to give a faster harvesting operation and reduced rotting whilst in store.



NEW

The HT 200 a very compact haulm topper was especially developed for the front attachment to the VARITRON.

11



The simple change from front to rear attachment by changing the position of the p.t.o.-shaft. As option is the cross conveyor with discharge to the r/h-side available.

Big advantage for the harvest: Haulm Topper for front or rear attachment

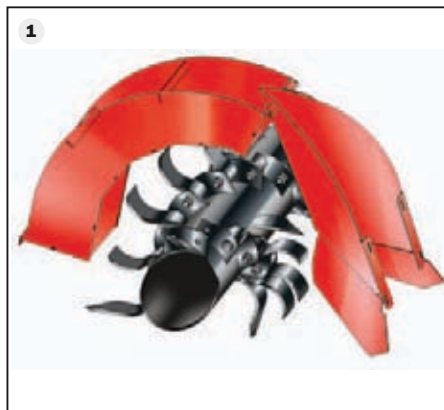
KS 75-2 attached to the front: successful haulm chopping but gentle to the plant (here shown on a carrot harvest).



Big dimensioned flail shaft (1) for smooth running and stability.

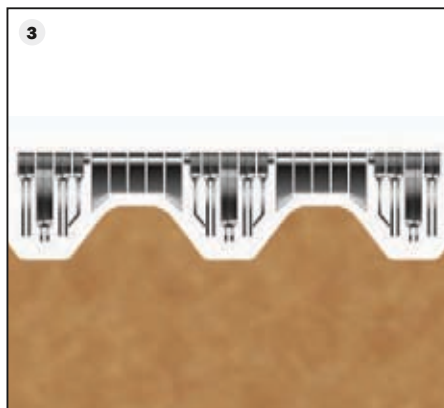
Maintenance is low with the automatic V-belt tensioning at the drive unit (2).

(The safety cover was removed for the picture.)



For each ridge and bed system the matching alignment of the flails (3). This system also sucks the haulm from the ground and chops it off.

KS 75-4: power of four – with the traditional working width of 3 m (4).





And if the view to the front is blocked as this picture shows in red beet it is also possible to attach the machine to the rear. In either way it is a possible combination with e.g. a Vegetable Topper ...



... or Ridge Crowner.
(The safety cover was lifted up for the picture.)



Interested? Please do not hesitate to ask for our specialized catalogues with more technical details!

The whole harvest range for your vegetables

An old saying says "As you plant it so you harvest". Therefore we focus at Grimme that the intake and separators are adapted to the various planting system on the ground, in the ridge or bed. No

matter if you harvest with a bunker or elevator harvester we customized many components in the last decades especially to suit your need. Trust on these experiences.



Carrots



Onions



Red beet



Parsnips



Chicory



Flower bulbs



Turnips



Silver onions



Celery



Garlic



Various systems for the vegetable harvest

1- and 2-row bunker harvester



Page 16–17

Multi-row elevator harvester



Page 18–21



Page 18–21

4-row bunker or elevator harvester



Page 22



Page 23

The SE-family cares also for your vegetables

1- or 2-row harvesters from Grimme are well known for their reliability in the potato harvest. But you can achieve even much more with our options for the vegetable

harvest. Use these options to harvest carrots, onions, red beet or other root crops. For more successful harvesting in a longer season.

Cultural diversity: that does not only apply for your vegetables but also for the various use of our 1- or 2-row bunker harvester with off-set intake. For example to harvest red beet (1), onions (2) or carrots (3).



Powerful, agile, specialized and self-propelled: the 2-row vegetable harvester SF 150/170-60 (3).



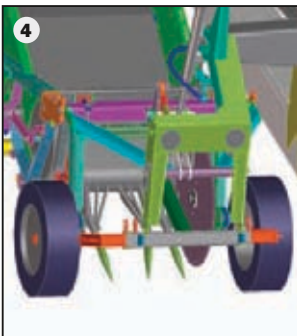
Various Grimme vegetable intake units



Windrow intake with share and brush web (1)

Windrow intake with rotor shaft and brush web (2)

Windrow intake with PU-covered soft intake roller (3)



1- or 2-row carrot share for ridge intake (4)

Through typed share blade (5)

Windrow intake for sticky and stony conditions (6)



Two-piece diablo roller (7): for pressure-free harvest out of the ridge (see page 16 bottom)



Vegetable specialist are everywhere around the world. Onion harvesting in Australia.

The culture-innovation on all grounds: the GT 170

The combination of specialised intake units and powerful separator makes the GT 170 to an awarded multi-talent on all grounds. For the powerful harvest off up to 170 cm intake width.

That is not enough? Than have a look at our MAXI-Bed system on page 24 and 25.



The variety of a GT 170 and the advantages of a self-propelled harvester: the VARITRON

Agile, comfortable and powerful on all soils. Those are the main arguments for our VARITRON. No matter if you are looking for a 2-row elevator harvester (VARITRON 200), a harvester with a 7 ton bunker (VARITRON 270) or a "non-stop" variant with a 2 ton buffer bunker (VARITRON 220), you have the choice.

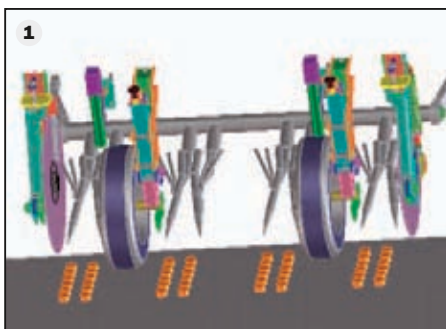


Top until the top: the vegetable intake unit of the GT 170 and VARITRON

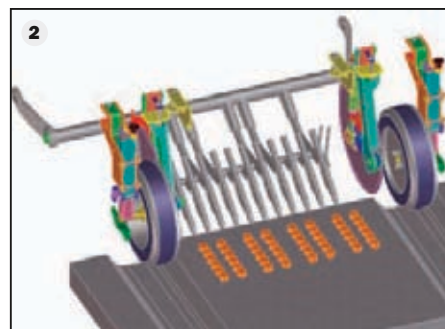


Our vegetable intake units ensure an even crop flow and gentle handling up to the top.

19



1

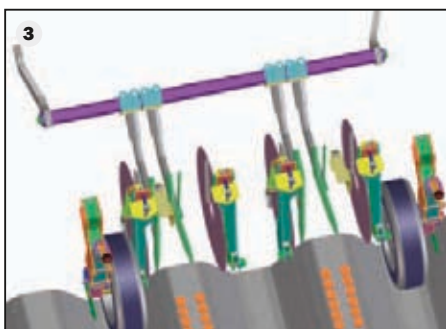


2

A "cornucopia" of various special share types for carrots, parsnips, red beet, garlic and others are available:

Carrot share for the double row intake from the ground (1)

Carrot share to lift out of a flat bed (2)



3



4

Carrot share for ridge intake (3)

Share blade for ridge intake (4)



5



6

PU-coated soft roller for gentle windrow intake of onions and other vegetables (5).

Better without pressure: Ultra-sonic depth control (6) for pressure-free depth control and maximum gentle crop handling

Keeps delicates fine: the separators of the GT 170 and VARITRON

Discs cut cleanly at the right and left-hand side of the ridge and reduce the soil content.



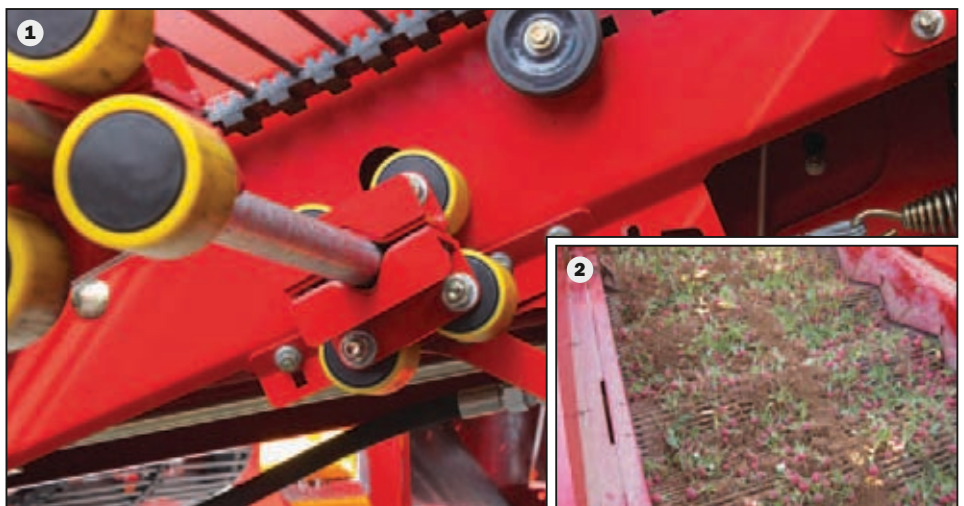
Clod breaker over the main web gives effective and gentle sieving of soil and trash. This picture showing the harvest of red beet.



Rotor agitator (1) to increase the sieving if necessary. The intensity is either manual or comfortably hydraulically adjustable.

Patent

Our CASCADESYSTEM (2) achieves an excellent sieving without agitator and oscillating unit for round vegetables. Showing the radish harvest.





NEW

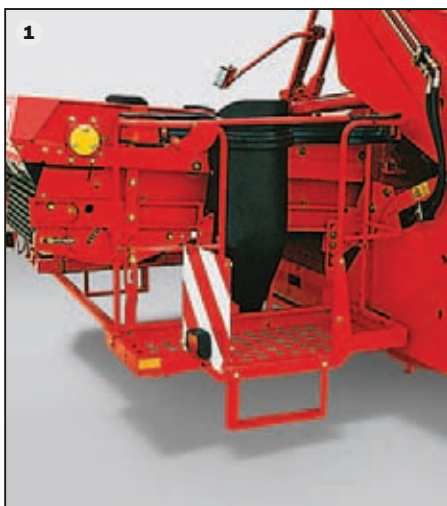
Our MULTISEP – now available as Double MULTISEP. The all rounder for cloddy, sticky soil or soil with small stones. Comfortable adjustable from the terminal:

- The levelling
- Distance and height of the clod rollers
- Speed and drive direction of the roller-pairs

To ensure a fine adjustment to your conditions.



A fine option: the fine haulm elevator for the GT 170 (only available without picking table) and the VARITRON. A good solution with fine haulm to ensure a careful haulm separation.



1



2

You want freshly picked vegetable directly from the field? No problem! We offer comfortable picking tables for 2 to 6 pickers for the GT 170 (1) and VARITRON (2) (depending on the type).

Harvest with self-propelled harvester: self-propelled with and without bunker

Big machines meet small vegetables. The TECTRON with 4 x 75 cm (3 m) digging width and voluminous 15 ton bunker harvesting silver onions



... or carrots ...



... or red beet.



Don't miss the onion harvest on page 14.

The self-propelled 4-row elevator harvester SF 3000



The SF 3000 is a powerful elevator harvester which is often in use for the onion harvest...



... or to harvest flower bulbs or chicory.

The new MAXI-Bed system

To achieve more output, quality and go easy on resources: bed cultivation with separation to grow high-quality vegetable crops in soils that are rich in stones or clods. This system was restricted to the

track width of the tractor to 1.8 meter. In coordination with the tractor manufacturer Grimme has developed a comprehensive machine program with a new working width. This reduces

the tracks in the field, improves the water balance and increases uniformity of the crop – for more power in a class of its own.

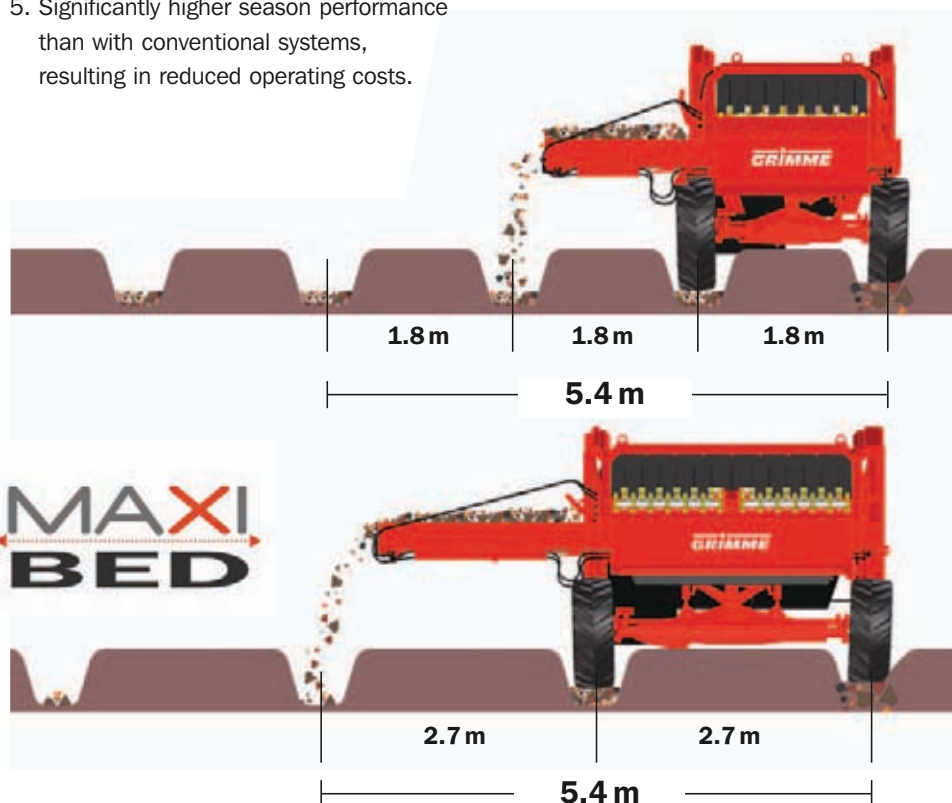
MAXI-BED SYSTEM

The benefits of the MAXI-Bed system

1. The MAXI-Bed system is suitable for potato and vegetable farming.
2. 10% more net acreage in vegetable farming with correspondingly increased harvests. Row spacing optimized in terms of crop farming can be expected to yield additional increases.
3. 50% more acreage output per hectare thanks to the 1.5 times wider bed.
4. Improved water balance thanks to wider beds and less space taken up by compressed tracks.
5. Significantly higher season performance than with conventional systems, resulting in reduced operating costs.
6. Quicker loading of transport vehicles during the harvest, resulting in a more efficient use in road traffic – additional power for your logistics operation.
7. Less bed crossing means less turning procedures. This reduces unproductive idle times during the harvest.
8. Increased uniformity of the crop thanks to less edge row effects at the track sides. These effects may appear particularly in vegetables and are caused by more light in the edge rows.



Interested?
Ask for the leaflet!





Comparison between conventional systems and the MAXI-Bed system: as example in a red beet field the advantages of a MAXI-Bed are clearly visible. Instead of 5 rows in a 1.8 meter wide bed, 8 to 9 rows are cultivated in a 2.7 meter wide bed. The number of plants which grow under different light conditions at the edge of the bed is reduced considerably. Therefore, the MAXI-Bed ensures more homogenous goods – and more success on the whole field.



Halm topping and harvesting in one pass. Very gentle and powerful with the GT300 with 3 m working width. Not only for red beet (1) and carrots (2) also for numerous other vegetables.



Compact on the road – in spite of its impressive dimensions, the machine can be driven on any road that is 3.3 m wide without any problems. Only fold in the elevator and start the journey to the next field.

Special for specialist

The customized development of new cultivating systems, machines and options is a daily business for the Grimme team. With our own production, the various available modular construction systems and the know-how of our engineers we

have short distances to build new developments. What is especially important for the various special sections in the vegetable cultivation!



Silver onion

Turnip

The size comparison between a silver onion and turnip shows clearly what challenge we meet for the separation of haulm and trash.



Discs at the left and right-hand side of the ridge (1) cut off the ridge and reduce the soil content. KARO-webs in lieu of traditional main webs support the sieving on heavy soils (2).





From small to big, from sandy to sticky soils – we have the matching web for your conditions (1). No matter if you need traditional webs or KARO-webs for the sieving of sticky soil.

NEW

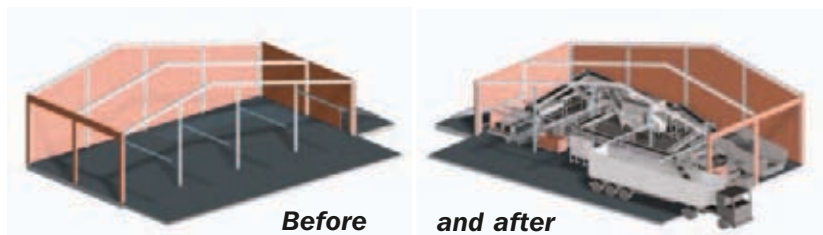
The web manufacturing department of the Grimme group delivers the matching web for your conditions. New in our product line are the special double-bar webs (2) for small crop. The advantages are not far to seek: narrow deflection and small drops for gentle handling.

GRIMME SOLUTIONS



The system to success

Optimizing your production line or planning a green field project – in both cases Grimme Solutions is your partner for a professional approach. We support with the implementation of high complex processes from the storing to the processing of your vegetables.



Project consulting (1)

Your project purpose as our focus

Project planning (2)

Project bench mark with world wide standard



Project implementation (3)

One contact person from the beginning to the end

Project support (4)

Long-term project support with reliable after-sales service around the world





SPECIALS

Grimme self-propelled harvester for various use



MAXTRON special solution for spinach harvest



MAXTRON special solution for carrot harvest



MAXTRON special solution for green cabbage harvest



Special solution to harvest young Christmas trees

Your Grimme Partner for advice and service:

Grimme Landmaschinenfabrik GmbH & Co. KG
Hunteburger Straße 32 · 49401 Damme · Germany · Phone +49 5491 666-0
Fax +49 5491 666-2298 · grimme@grimme.de · www.grimme.com

GRIMME
HARVESTING SUCCESS!