Folding tine harrow technology
TINECARE V

PÖTTINGER

Every pass a success

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Every pass a success

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The new TINECARE V MASTER precision tine harrow combines the best working results with the highest productivity. In addition to its intuitive design of a compression spring tine system and large jockey wheels, the machine has a high-strength frame with optimum weight distribution. This combination ensures consistently high quality working results right up to the outermost tine. A working width of 12 m enables maximum output for the highest operating efficiency.

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The best soil

Successful crop care

The objective of crop care is to promote the growth of the crop. This is influenced by various factors, including crop-specific characteristics such as sensitivity at different stages of plant growth, the composition of neighbouring weeds, and the potential harm that the weeds can inflict on the crop.

On top of that soil conditions in the field, weather conditions during the planting season and precise seed placement during drilling are essential for a successful crop.

Weeding strategy

The composition of the different weeds growing next to the crop is crucial for choosing the right crop care strategy.

Seed weeds reproduce generatively by scattering their seeds. In order to minimise competition with the crop, seed weeds are best controlled when the cotyledons emerge by covering them with soil or uprooting them.

Root weeds, on the other hand, primarily reproduce vegetatively by resprouting. Reliable control can only be achieved by slicing through the newly sprouted plants.

Hoeing and tine harrow technology

Tine harrows make an important contribution to row-independent weed control, primarily against seed weeds.

Thanks to their versatility, they have become key machines in organic farming.

New agronomic challenges are strengthening the role they play in integrated crop production. For example, tine harrows achieve good results when soil herbicides are less effective due to long-term dry conditions plants developing a resistance to them or the loss of active ingredients.

Modern tine harrow technology reaches its limits with long-established weeds and perennial root weeds. These need to be suppressed by soil cultivation, using implements such as a shallow cultivator or a row crop cultivator.

How the tine harrow works

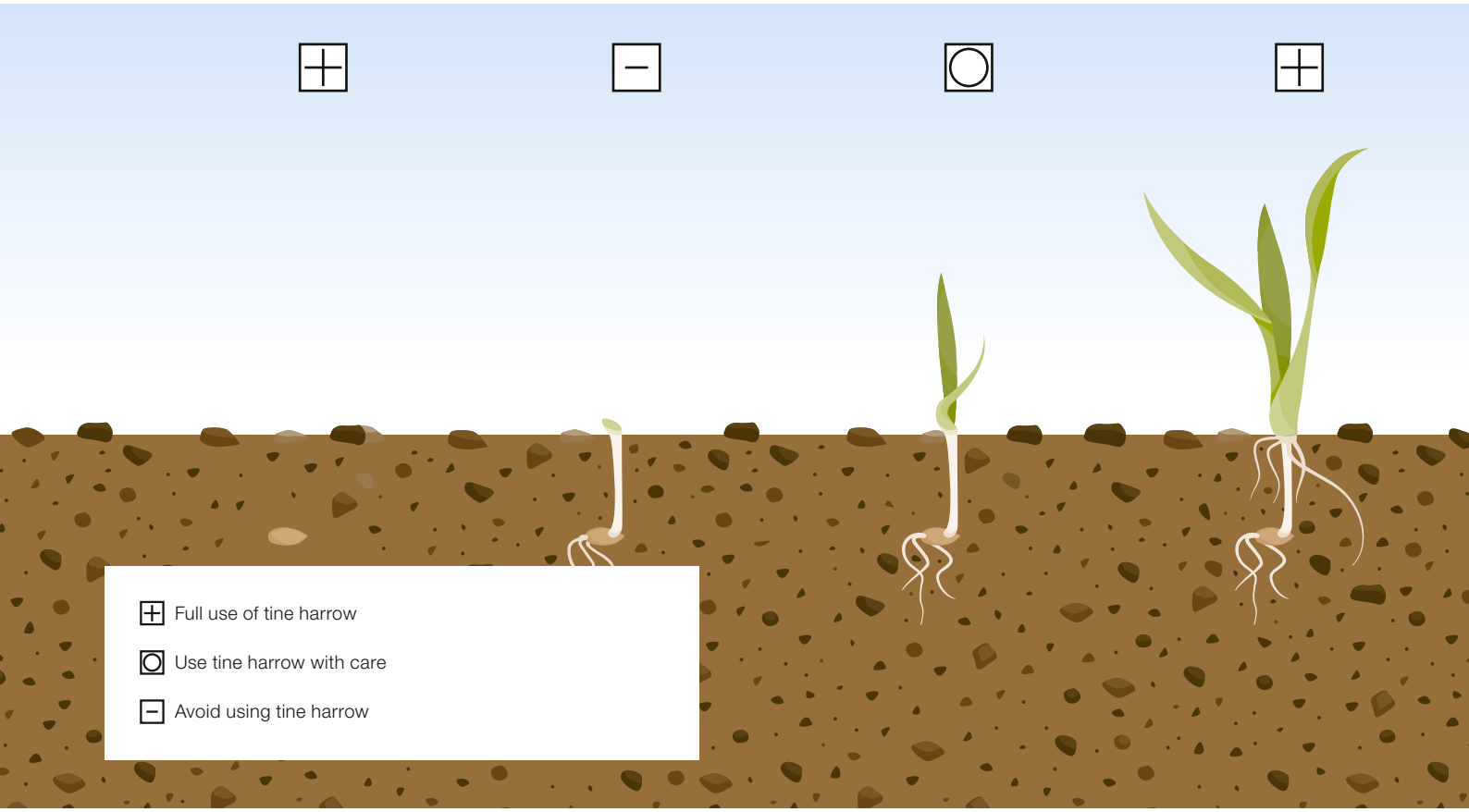
The objective is to use the tine harrow to control the weeds at the early filament to cotyledon stage. That is why the first deployment of the tine harrow should be as early as possible. If harrowing is carried out later, the success of mechanical weed control diminishes.

The the way the tine harrow works essentially consists of two factors:

- Covering with soil: the top layer of soil is moved by the tines so that the weeds are buried. This stops photosynthesis so that the weeds wilt away.
- Uproot and expose: some of the weeds are pulled out of the soil by the tines and are deposited on the surface to dry out.

In addition, soil incrustations can also be broken up to a certain extent to restore the essential exchange of water and gases.

The best soil



Selectivity

Selectivity refers to the protection of the plant against damage during the tine harrow process. 100 % selectivity means no damage to the crop.

Crops need a growth advantage over the weeds, which is further extended each time crop care processes are carried out. That is why PÖTTINGER recommends deploying the tine harrow as early as possible.

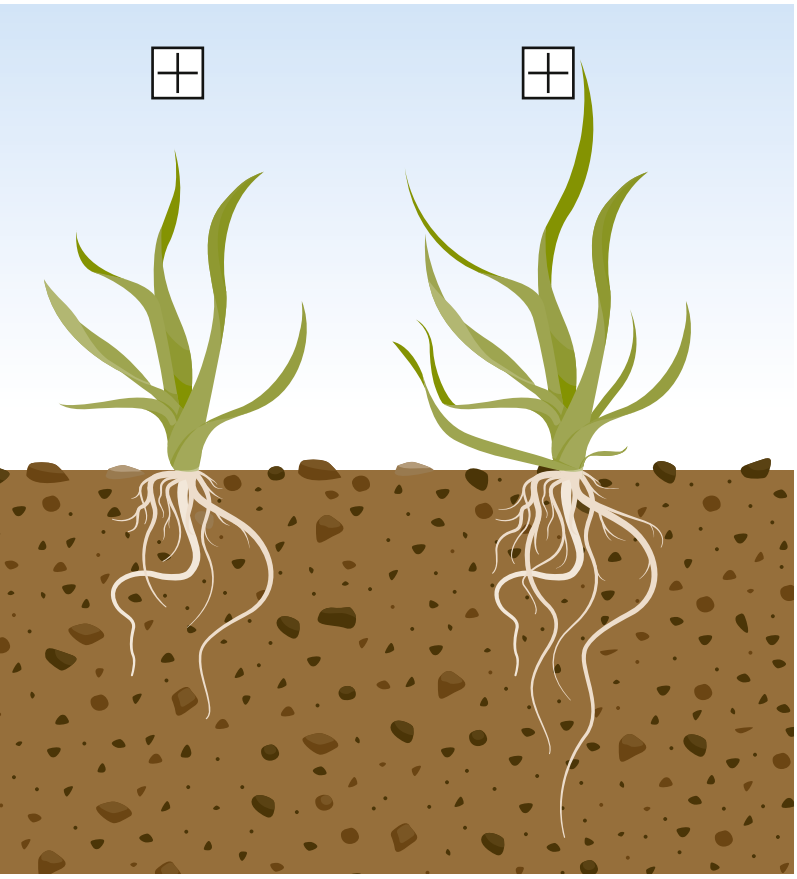
Stale seedbed

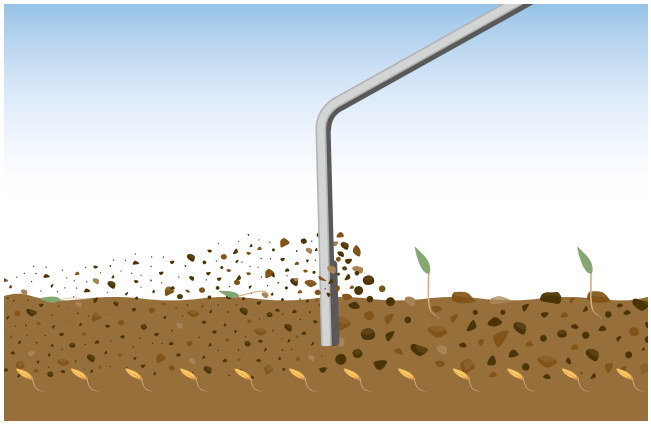
Using a stale seedbed (false seedbed) means preparing the seedbed around ten days before drilling. Immediately before drilling, the tine harrow is deployed with a shallow and aggressive setting.

This eliminates the first wave of weeds before drilling so that there is no risk of damage to the crop.

Using the tine harrow before drilling reduces the potential weed threat and gives the crop the advantage of smoother and more consistent seed emergence.

The selectivity for harrowing the stale seedbed is 100 % because the crop has not yet been drilled at the time the tine harrow is deployed.





Blind harrowing

Blind harrowing is the term used to describe a pass with a tine harrow after drilling the seed, but before the crop has emerged.

The selectivity of blind harrowing depends on the distance between the seedling and the harrow tines. A safe distance between the tines and the seedlings ensures high selectivity and very low risk of crop damage.

As a rule, blind harrowing is a very effective measure and, in good conditions, has a comparable effect to a soil herbicide.

If blind harrowing is included in the weeding strategy, the seeds should be drilled a little deeper to extend the period during which blind harrowing can be carried out.

Harrowing in the crop

The tine harrow should not be used on a crop that has just emerged. Only once the crop is sufficiently rooted can the next harrowing pass take place.

From this point onwards, selectivity is influenced greatly by the growth advantage of the crop compared to the weeds. Ideally, the resilience of the established crop is higher than that of recently germinated weeds.

Initially, harrowing should be carried out at lower pressure and a lower speed. The more robust and firmly rooted the crop is, the more aggressively it can be harrowed. This boosts the effectiveness of weed control.

The highest working quality

Precision tine harrow

The TINECARE V 12050 MASTER is a universal precision tine harrow with an optimised tine configuration and constant tine pressure of up to 6 kg irrespective of the ground contours.

This makes it versatile for use in all arable crops, regardless of the sowing method, or previous conventional or soil-conserving tillage.

Thanks to their special configuration, the springs act on the tines indirectly to apply a consistent pressure to the soil surface, regardless of the tine pressure setting. This means that the full arc of movement is available to each tine so that it can independently track uneven ground and maintain consistent working results.

Every pass a success.

Straight line tracking

Another advantage of the TINECARE V 12050 MASTER tine harrow is that it maintains a consistent tine spacing.

On the TINECARE V 12050 MASTER, the pressure spring acts indirectly on the tine via a wide, maintenance-free tine pivot point. Because the tines are bent on two planes, the tips of the tines track in a straight line.

In agronomic terms, the advantage is uniform inter-row and intra-row working results.

Nevertheless, the tine tips still oscillate to the side and in the direction of travel thanks to the spring steel material of the tines. This contributes to crumbling the soil to bury the weeds and helps to break up incrustations.

Optimum ground tracking

The TINECARE V 12050 MASTER precision tine harrow adapts perfectly to the ground contours. The machine is equipped with various features for this purpose:

- Large jockey wheels increase running smoothness on rough surfaces.
- Wide vertical arc of the tines, on the basic version, achieves ground tracking.
- Large top link slot and the rear jockey wheels available as an option for optimum ground tracking.

The HYDROLIFT option enables the movement of the frame sections to provide optimum ground tracking even on hilly terrain.

Variable level of aggressiveness

The frame height, which can be adjusted using the jockey wheels, influences the angle of aggressiveness of the tine tips.

The higher the tine pressure and the faster the driving speed, the more intensive the effect of the tine harrow.

The higher the frame is set, the steeper the angle of the tines. This is the more aggressive setting.

In contrast, if the frame is set lower, the angle of the tines is flatter, and they have a more sweeping action. As a result, the tine harrow covers weeds with soil more effectively, and the aggressiveness of the tines is reduced.

The highest working quality

Robust frame construction

The frame of the TINECARE V is designed to be robust and torsion-free. With box section dimensions of 120 mm x 180 mm, the frame is balanced across the full working width. This provides the basis for maximum work quality and smooth running, even at higher driving speeds and maximum tine pressure.

Maintaining consistent tine pressure is supported by the strong frame, because it acts as a counterweight to the tine pressure equally, right across the whole width of the machine.

The maximum ground clearance of 500 mm ensures trouble-free operation in well-developed crops.

Ultimately, this achieves unique working results paired with high output, despite challenging soil conditions and moderate volumes of surface mulch.

HYDROLIFT

The HYDROLIFT hydraulic headland position increases the clearance height of the frame sections for safe manoeuvring, even on hilly terrain and when crossing deep wheel marks.

This has an advantage when using crop care tractors with narrow wheels and a narrow track width, for example, or smaller tractors with a lower lifting height.

What's more, this system improves ground tracking during operation by offering a freedom of movement of 7° upwards and 5° downwards. In hilly terrain, this further increases the quality of work despite the large working width.

Additionally, the optional hydraulic cylinder is preloaded by a diaphragm accumulator, and dynamically redistributes the heavier weight of the centre of the machine to the lighter sections on the outside.

The highest working quality

Reliable tine section

The tine sections on the TINECARE V feature a simple, light and crop-friendly design. The indirect pressure application system on the precision tine harrow is equipped with a spiral compression spring. Because the spring is located above the tine, it prevents even taller crop plants from being damaged by moving parts.

The ingenious linkage on the simple tine elements combines contour-independent tine pressure with maximum reliability.

Configuration and function

The tine section on the TINECARE V is installed on 6 beams.

The inter-gang spacing within each tine section is particularly large at 360 mm, so that perfect working results can also be achieved in fields with mulch on the surface.

In addition to the wide mounting and straight line tracking of the tine, the optimum tine diameter contributes significantly to maintaining the tine spacing of 30 mm.

Tine pressure adjustment

The tine pressure is infinitely variable and easily synchronised from the driver's cab using the tractor hydraulics. It can be set in the range of 500 to 6000 g across the full working width.

Where conditions in the field are consistent, the working results can be adjusted quickly and easily.

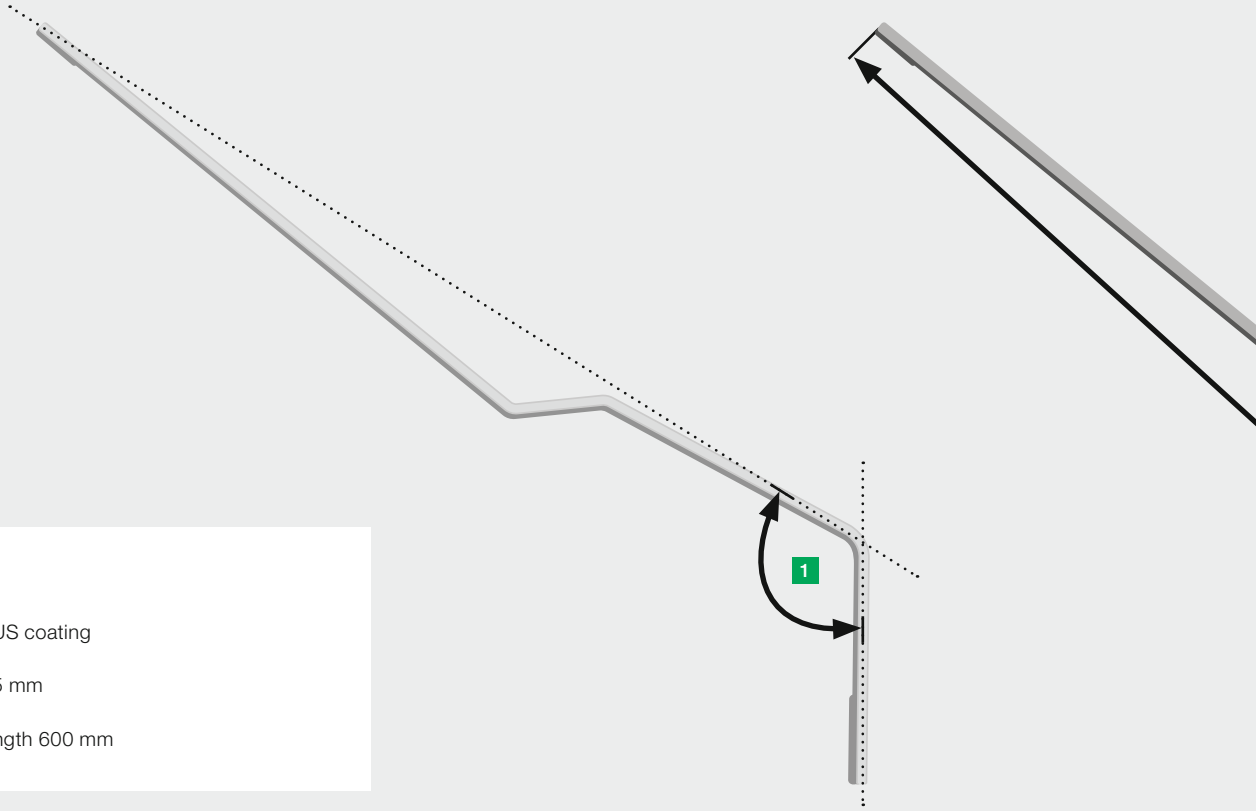
This ensures that gentle to aggressive weeding can be carried out depending on the development stage of the plants and the site-specific soil conditions.

Tine settings

In order to achieve an optimum match to the conditions in the field, the tine harrow can be adapted in several different ways:

- Tine angle: the angle of the tine is simply adjusted to fine-tune the aggressiveness of the tine harrow by changing the height of the frame.
- Working depth: the working depth of the tines is a combination of the tine angle, tine pressure, and driving speed.

Maximum efficiency



1 Tine angle 120°

2 DURASTAR PLUS coating

3 Wear length 125 mm

4 Effective tine length 600 mm

Optimised tines

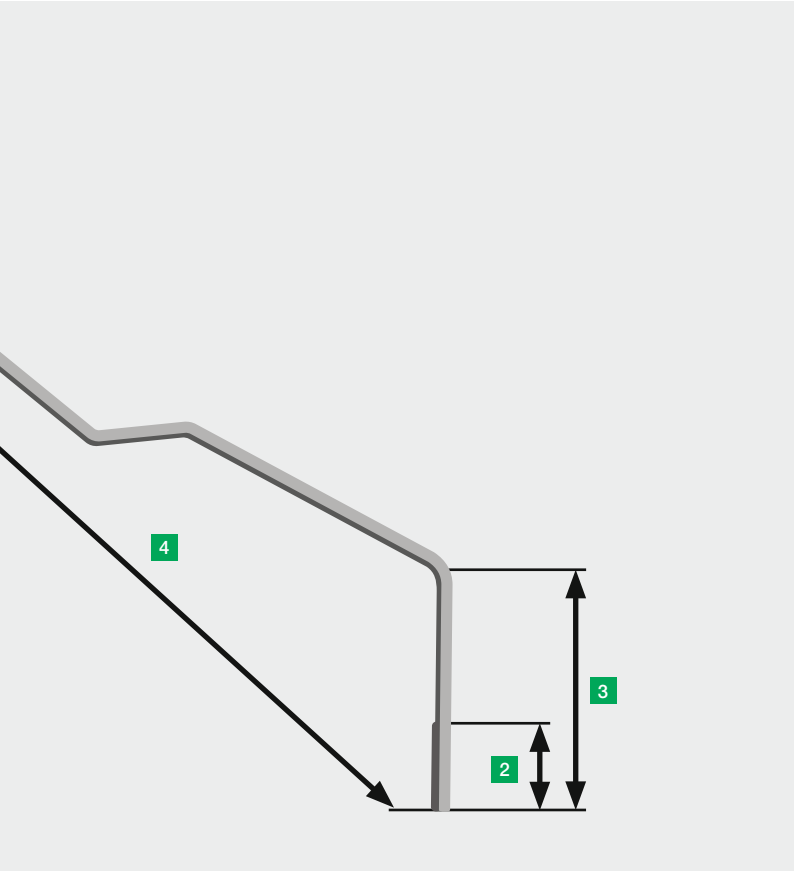
The TINECARE V tine harrow is equipped with durable spring steel tines with a diameter of 8 mm as standard. They offer impressive wear resistance, excellent straight line tracking, and a long wear length of 125 mm. Each tine can be replaced individually if required.

The tips of the tines have an effective angle of 120° for optimum plant compatibility and suitability for processing mulch-drilled crops. Thanks to the diagonal tine length of 600 mm, it is possible to harrow right along the plants without damaging them.

DURASTAR PLUS

For the TINECARE V there is a choice of CLASSIC tines or DURASTAR PLUS tines.

DURASTAR PLUS tines are equipped with a 50 mm long carbide coating on the tine tip. This extends the durability of the tine many times over.



Space saving storage

The TINECARE V 12050 MASTER folds up its five sections to provide a compact storage position. With a height of 3.6 m and a width of 2.95 m when folded, the tine harrow saves space when it is stowed.

Road Transport

When changing from working in the field to road transport, all tine sections fold hydraulically into a defined transport position. The frame sections are tilted slightly inwards to provide a better view in the cab mirrors.

Easy servicing

- Maintenance-free tine sections
- Individually replaceable tines
- Greasing points at the frame folding points
- Protected spring units
- Easy to clean

Full flexibility

Suitable for all crops

The tine harrow can be used for full-cover cultivation in cereals, row crops, and ridge crops. The basic configuration of six beams spaced at 360 mm with a tine spacing of 30 mm and high tine stability is fundamental to the success of the process.

The maximum tine pressure of 6 kg and the wide angle at the end of the tines also make the TINECARE V ideal for caring for crops drilled directly into mulch with higher soil consolidation as well as organic matter on the surface.

Line stability is defined as the minimised deflection of the tines to the right and left. The geometry of the tines is designed to stabilise the movement of the tines and keep them in a straight line.

Thanks to a number of unique features, such as the strong frame, the unique spring system and the high tine pressure, the TINECARE V is equally reliable on organic farms, and for weed control in conventional, integrated farming.

Suitable for no-till applications

The combination of a wide beam spacing of 360 mm and the tine tips angled at 120° makes the TINECARE V MASTER precision tine harrow perfect for weeding mulch-sown crops with a moderate volume of organic matter.

In these conditions, the frame is lowered so that the harrow tines have a sweeping action, making it easier for straw to pass through the machine.

The more compact soil structure, due to a reduction in tillage, requires a high maximum tine pressure. The 6 kg per tine on the TINECARE V MASTER is sufficient for these tougher operating conditions.

Adaptable working width

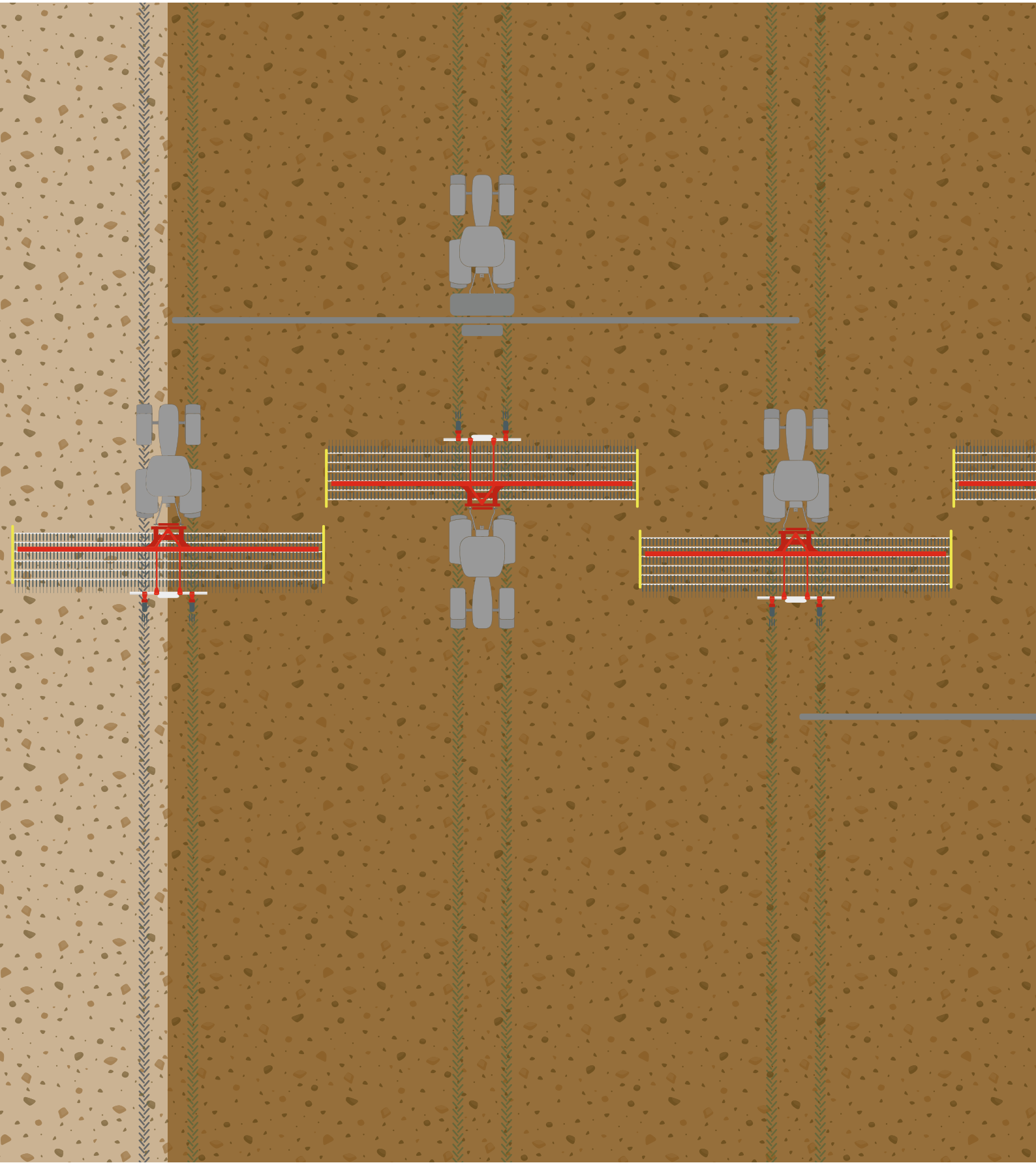
The working width of the TINECARE V 12050 MASTER can be reduced from 12 m to 8.28 m thanks to the multi-section folding frame. Working with one frame section adds flexibility and avoids double passes at the headland and on wedge-shaped fields.

Adding extra tines to the outside sections increases the effective working width of the tine harrow by 18 cm.

This safety margin reduces the number of gaps if no tramlines have been drilled for guidance, or when using tractors without a GNSS guidance system.

Full flexibility

Half width switching



Adapting the working width to the tramlines

To save soil compaction and additional passes when working in fields with tramlines, tine sections on the left-hand side of the machine can be deactivated manually.

This capability allows the working width of the TINECARE V 12050 MASTER to be adapted to fit in with the tramline scheme of the sprayer or fertiliser spreader, for example, covering application widths of 18, 24, 36 or 48 m.

Deactivating one side is also useful for working at the headland or on wedge-shaped corners, for example.

The result is that tramlines can be shared by several crop care machines. This conserves the soil and the crop, because excessive damage to the crops caused by double passes with the tine harrow is avoided.

Easy handling

To make optimum use of the available tramlines and avoid excessive overlaps, it is possible to lock each of the tine sections on the left-hand side of the machine in the raised position.

To activate half width switching, there are easily accessible switchover valves mounted on the frame of the machine.

Because half width switching is so easy to use, it can be activated quickly when needed at the headland or field boundary.

Full flexibility

Fully-adaptable jockey wheels

The height and lateral position of the four front jockey wheels can be adjusted as standard. As a result they can make a significant contribution to ground tracking. When used in row crops, they are always positioned between the rows of plants.

The double-sided wheel mounting offers the highest strength and an impressively narrow design for working in ridge crops and between narrow rows of plants. In combination with the optional steerable rear wheels, they ensure the best ground tracking even in hilly terrain.

Ingenious wheel mounting

The double-sided wheel mounting offers an impressively narrow yet strong structure for working in closely spaced row crops and in ridges.

The frame height can be adjusted quickly and precisely using the pin-in-hole matrix.

Self steering rear jockey wheels

The option of steered rear jockey wheels further improves the ground tracking capability of the tine harrow.

They can be easily shifted to either side along the lighting bar to match tractor track widths between 150 cm and 225 cm.

Track harrow

An additional track harrow is available as an option to be mounted behind the rear jockey wheels. This lifts up weeds again that have been pressed into the soil to prevent them from growing back.

Choice of wheel options

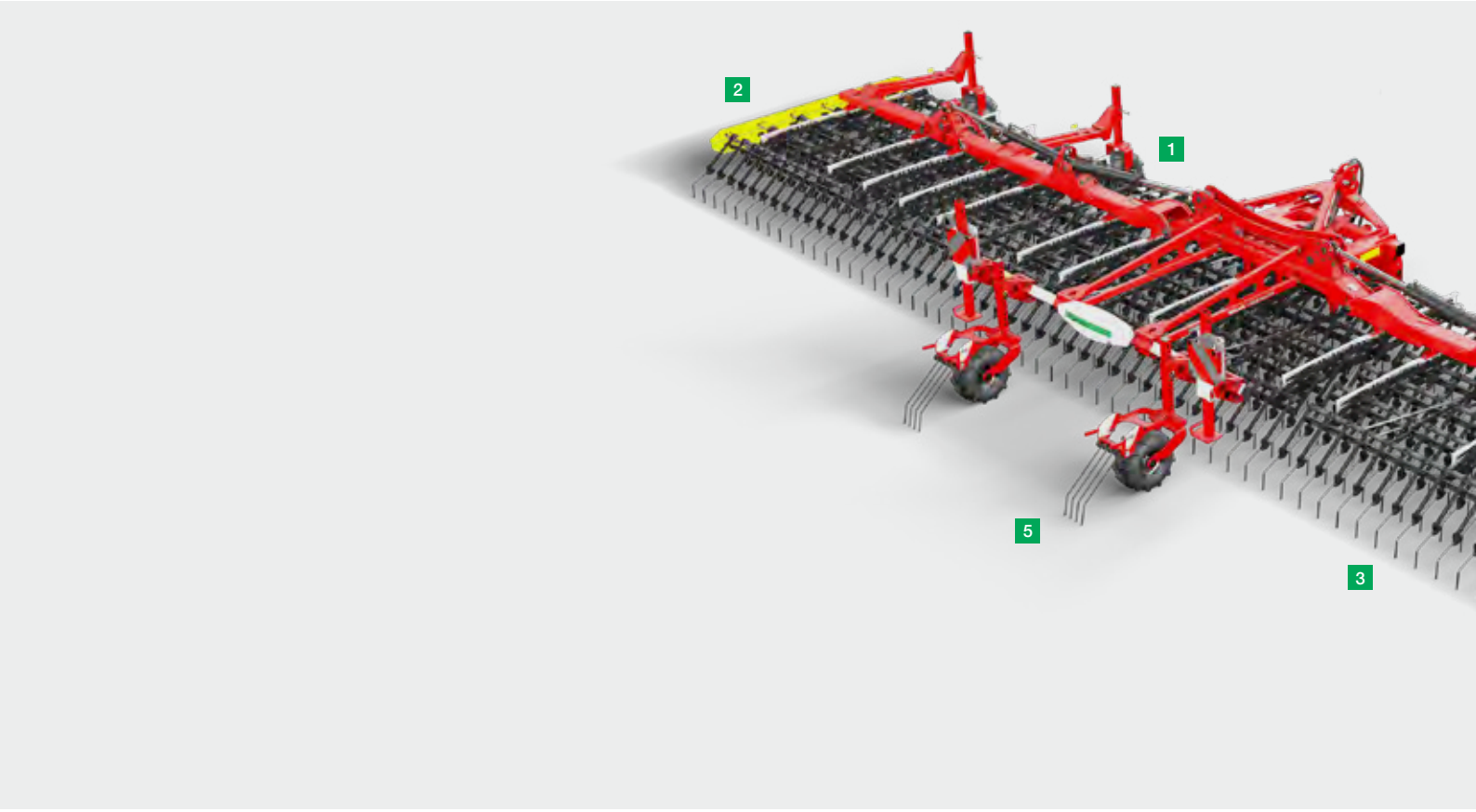
The large 18.5x8.5-8 tyres on the jockey wheels are available with grooved or lug tread pattern. They run smoothly and reduce the pressure applied to the soil. The standard version includes air-filled grooved tyres.

Tyres with a lug tread pattern are particularly recommended if the track harrow is installed. Another advantage is their improved self-cleaning function.

Precision tine harrow

Precision tine harrow

TINECARE V 12050 MASTER



1 Frame

A large dimensioned frame ensures maximum service life. The central arrangement ensures optimum weight distribution.

- Frame dimensions 120 mm x 180 mm
- Folds in 5 sections

2 Tine section

The large inter gang spacing ensures a high clearance. The tine section of the TINECARE V is installed on 6 beams. The tine pressure is adjusted hydraulically.

- Tine spacing: 30 mm
- Inter row spacing: 360 mm
- Maximum underframe clearance: 500 mm

3 Tine tools

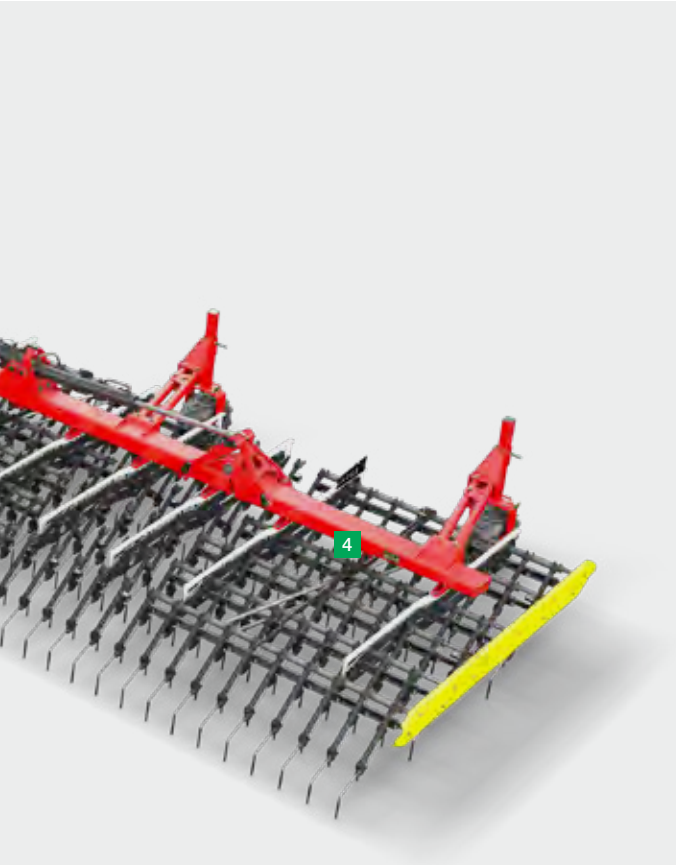
Guided tines guarantee a perfect working result. The ingenious tine mounting ensures excellent straight line tracking.

- 8 mm thick harrow tines
- Tine wear length: 125 mm
- DURASTAR PLUS hardened tines available as an option

4 Compression spring system

Each tine is preloaded by a pressure spring. Pressure fluctuations are avoided and a constant tine pressure is maintained in every working position.

- Neat compression spring system
- No snagging of plants
- Consistent tine pressure in every working position

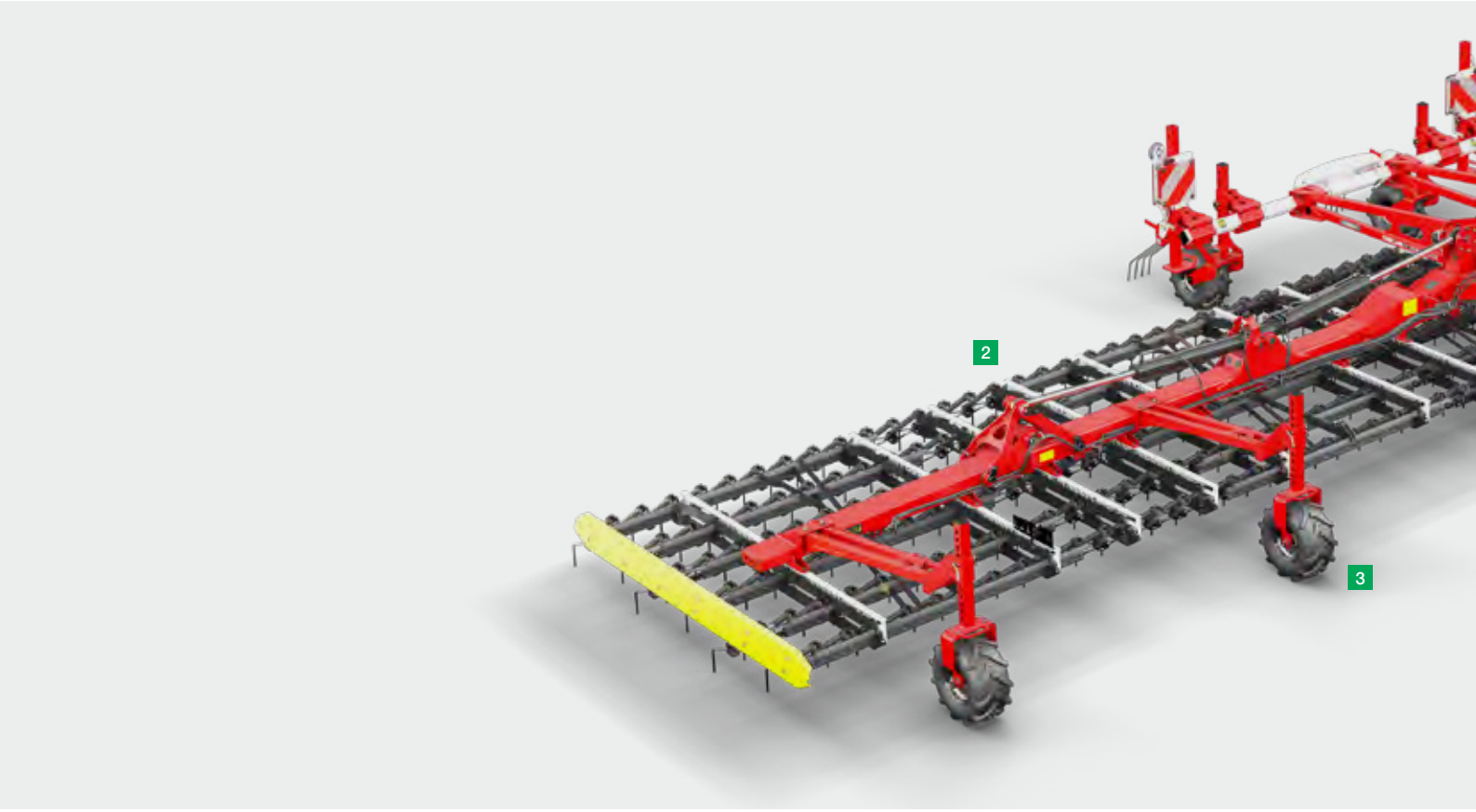


5 Track harrow

Track harrows are available as an option on the rear jockey wheels to loosen any weeds that have been pressed into the soil.

Precision tine harrow

TINECARE V 12050 MASTER



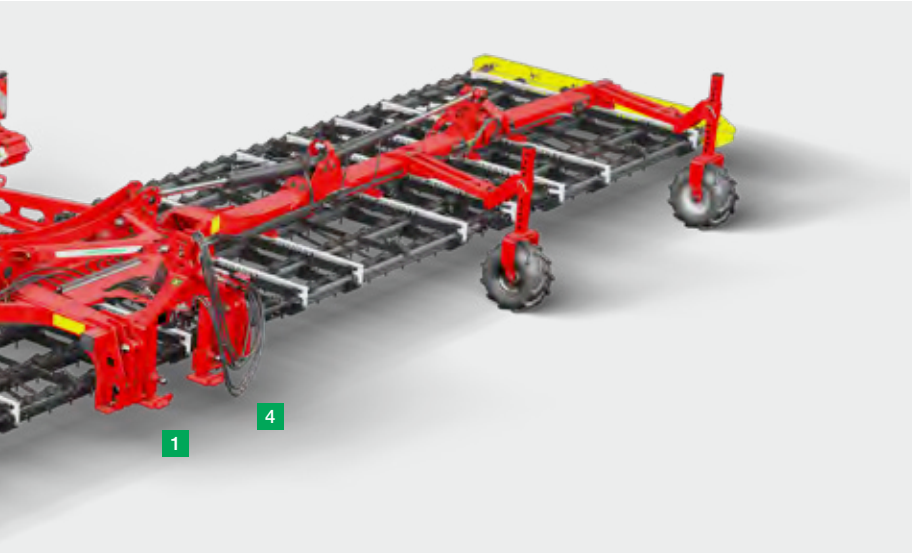
1 Mounting

Mounting the machine further forward provides a favourable centre of gravity and means less stress on the tractor. Thanks to a choice of different lower linkage and top link positions, the TINECARE V matches a wide range of tractor geometries.

- Cat. 2
- Cat. 3N
- Cat. 3
- 3 lower linkage and 3 top link positions
- 115 mm top link slot with safety flap

2 Half width switching

Switchover valves are available as an option to manually lock individual tine sections in the transport position. This is particularly relevant for controlled traffic farms where the working width of the tine harrow needs to match an existing tramline scheme.



3 Jockey wheels

The large-volume jockey wheels provide better soil conservation and optimum smooth running, even at higher driving speeds.

- Self-steering rear jockey wheels are available as an option
- With grooved or optional lug profile
- Can be positioned ergonomically to match row widths

4 Hydraulics

The hydraulic systems provided as standard for folding and tine pressure adjustment place low demands on the tractor.

- 1 double-acting spool valve for folding outer sections
- 1 double-acting spool valve for main vertical folding
- 1 double-acting spool valve for infinitely variable tine pressure adjustment

No additional spool valve is needed on the tractor if the HYDROLIFT hydraulic headland system is fitted.

Equipment options

				
	Hydraulic, infinitely variable tine pressure adjustment	**Front jockey wheels**	**Rear jockey wheels**	**DURASTAR PLUS harrow tines**
TINECARE V 12050 MASTER	■	■	□	□

				
	Depth control wheels with a lug profile	**Track harrow for jockey wheels at the rear**	**Parking stands**	**Extension with additional tines**
TINECARE V 12050 MASTER	□	□	■	□

■ = standard, □ = optional, – = not available

Technical data

	TINECARE V 12050 MASTER
Working width	12 m
Transport width	2.95 m
Transport height[1]	4 m
Transport length[2]	3.05 m
Number of tines	400 pcs
Tine pressure adjustment range	500 g – 6000 g
Tine spacing	30 mm
Number of rows	6 pcs
Inter row spacing	360 mm
Max. frame height tine section	500 mm
Number of jockey wheels	6 pcs
Frame dimensions	120 mm x 180 mm
Jockey wheel dimensions	18.5x8.5-8
Power requirement	120 hp
Basic weight[1]	2450 kg

[1] with 40 cm clearance height
[2] basic machine

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PÖTTINGER
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Regardless of whether you've got a new machine or a classic, our spare parts logistics centre stocks over 55,000 parts to give our machines an extended service life. Thanks to the many local warehouses in 13 countries and a large network of dealerships, original parts are available in over 60 countries.

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PÖTTINGER

More success with PÖTTINGER

- Your reliable partner, as a family-owned company since 1871
- Specialist for arable and grassland
- Future-safe innovation for outstanding working results
- Roots in Austria – at home throughout the world

Rely on TINECARE

- Pressure spring system for consistent tine pressure in every position
- Tine pressure adjusted hydraulically between 500 g and 6000 g from a central point
- High strength frame and optimum weight distribution with a working width of 12 m

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