



CTC

CULTIVATOR FOR ALL CONDITIONS

YOUR KVERNELAND

INTELLIGENT FARMING SOLUTIONS



Choose the best farming solution for you and your land. Combine the highest possible yields with sustainability. This will start with the correct tillage. The choices you make depend on various factors and should match your specific circumstances, like soil structure, crop rotation, residue management, economic and ecological viabilities.

The choice is yours!

You must consider environmental and legal issues. From conventional methods to conservation tillage: the balance of operations at the right time has to be found to achieve high yields with the best soil condition (air, moisture, biological activity, etc.) with a minimum amount of energy, time and investment. For this, Kverneland offers a full range of intelligent farming solutions.



Kverneland Group is a leading international company developing, producing and distributing agricultural machinery and services.

Strong focus on innovation allows us to provide a unique and broad product range with high quality. Kverneland Group offers an extensive package aimed at the professional farming community, covering the areas of soil preparation, seeding, forage and bale equipment, spreading, spraying and electronic solutions for agricultural tractors and machinery.

SMART FARMING

CONVENTIONAL AND CONSERVATION TILLAGE

CONVENTIONAL TILLAGE

Conventional Tillage

- **Intensive** method of cultivation.
- Complete soil inversion e.g. by a plough.
- Less than 15-30% crop residues left on soil surface.
- Seedbed preparation done by an active tool or special seedbed harrow.
- High phytosanitary effect by reduced pressure of weed and fungi diseases - fewer herbicides and fungicides needed.
- Better dry-off and faster increase of soil temperature for better nutrients absorption.

CONSERVATION TILLAGE

Mulch Tillage

























- **Reduced** intensively in terms of depth and frequency.
- More than 30% of residues are left on soil surface
- Extended repose period of the soil.
- Cultivator and/or discs incorporate the crop residues within the top 10cm of soil for stable bearing soil.
- Full-width tillage - seedbed preparation and seeding in one pass.
- Protection against soil erosion; reduce soil loss by run-off and improve water storage capacity.
- Improvement of soil moisture retention

Strip Tillage

- **Zonal strip loosening** before or during seeding of up to 1/3 of the row width (Loibl, 2006). Up to 70% of the soil surface remains untouched.
- Strip-till combines the soil drying and warming benefits of conventional tillage with the soil-protecting advantages of no-till by disturbing only the area of the soil where the seeds are placed.
- Exact fertilising deposit.
- Soil protection against erosion and drought.

Vertical Tillage / No-Till

- **Extensive** method.
- Working soil vertically avoids additional horizontal layers or density changes.
- Increasing water infiltration, root development and nutrient take-up.
- Plants' roots dictate the overall health of the plant, as they deliver nutrients and water throughout, contributing to a higher yield.
- A strong set of roots make plants more resistant to wind and drought
- Lower energy input required

KVERNELAND'S INTELLIGENT FARMING SOLUTION			Method	Deep Tillage (not a must)	Basic Tillage	Seedbed Preparation	Seeding	Spreading	Spraying
CROP ESTABLISHMENT SYSTEMS	CONSERVATION	extensive	Vertical Tillage shallow tillage						
		> 30% Soil coverage after Seeding	Strip Tillage stripwise loosening						
	CONVENTIONAL	intensive	up to 15% Conventional with soil inversion						
	15 - 30% Reduced Till without soil inversion								
		Mulch Seeding without soil inversion							

CLASSIFICATION OF TILLAGE METHODS KVERNELAND (Source: adapted from KTBL)

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.





TILLAGE

Preparing and cultivating your soil in order to achieve the highest possible yield is about choosing the correct tillage system.



VERSATILITY

STRENGTH

SIMPLICITY

EFFICIENCY



HIGH PERFORMANCE

SPEED UP WHEN THE TIME IS RIGHT

Versatility

Weather conditions vary from year to year and also crop rotations make it difficult to have just one cultivator to meet all requirements. Depending on the season and conditions, you want to manage high amounts of residues, leave a rough surface or fine seedbed, cultivate shallow or deep. For this you need a high capacity cultivator that is versatile.

Strength

You want a machine that lasts, that copes with the stress on the material over a long time. Still you don't want extra weight. That's why Kverneland uses tubes which are heat-treated to optimise the ratio between reliability and weight.

Simplicity

You want a multi-functional cultivator and to be able to adjust items on the go, like the disc section, to the very specific conditions, but not waste hours by changing the tines. Kverneland cultivators offer the Knock-on® system – to change the points on your cultivator within seconds. Benefit from the full range of shares for the best cracking and crumbling effect.

Efficiency

Soil structure is not the same on every field. You want the best equipment for your specific conditions. Kverneland offers a large range of accessories to meet your requirements.

Perfect soil preparation at lower costs.

STUBBLE CULTIVATION INCORPORATION, LEVELLING AND CONSOLIDATION

Powerful and efficient performance - that is what the CTC offers. The machine can operate at high forward speeds whilst maintaining a consistent working depth.

With the CTC, Kverneland provides a cultivator which is the right choice for all of conditions and for a wide field of applications. The stubble cultivation, especially within a no-tillage or minimum tillage cultivation program, conserves soil structure and moisture and limits erosions. It is an operation which requires great consideration. Stubble cultivation will be the basis of success or failure of the following crops.

Stubble cultivation is the basis of success or failure of the next crops.

Interruption of the "green bridge"

The closer the cropping sequence is repeated the interruption of the "green bridge" will be necessary to ensure soil hygiene. The transmission of root diseases or weed problems from one crop to the next needs to be prevented. A frequent problem is the slug attack. Therefore volunteer plants like rape and places to hide should be destroyed by cultivation or herbicide.

Volunteers germination and straw decomposition

A shallow cultivation ensures a quick and even emergence of volunteers. A deeper second pass cleans the seedbed. Therefore a complete cut on the entire working width is needed. Straw decomposition should also be accelerated as any diseases are transferred by straw. Effective residue management is important.

Supporting the soil structure

A quick cultivation after harvest benefits from the stable soil structure. Cut stubble continues to draw the moisture from the soil so it is important to fully expose the root to the air and improve moisture retention.



HIGH PERFORMANCE CULTIVATOR



CULTIVATION FROM DEEP TO SHALLOW FULL RANGE AVAILABLE

For today's modern farms the demands for cultivation have changed. Tight time slots have to be balanced with higher machine performance. Restricted crop rotations call for an adaptation in techniques that accomplish all requirements of modern crop cultivation. Kverneland proposes different configurations depending on the conditions of use, but also the power ability:

The CTC has a well organised tine arrangement over 3 or 4 tine rows. The capacity with long residues has really been a focus during the design process ensuring optimum mixing and intensive cultivation. The row distance varies between 270mm and 200mm; the tine position has been optimised to ensure a smooth soil flow across the entire working width but also around the transport wheels.

- CTC with 3 tine rows and 270mm tine spacing
- CTC with 4 tine rows and 200mm tine spacing

A maximum working depth of 30cm is possible. The Quantum share (345mm) ensures a complete cutting over the entire working width even when the machine is adjusted for shallow work. The high inter-row clearance up to a maximum of 150cm and the underbeam clearance of 870mm ensure blockage-free operation under any conditions (maize, sunflower, wheat, oil seed rape stubbles). The outer wing frame segments are pre-loaded by hydraulic accumulators and can be adjusted to suit the various field conditions.

High performance at high speeds.

- Complete cutting
- Perfect mixing & levelling
- Low pulling force needed
- Wide range of rollers
- Reduced maintenance
- Versatile from shallow to medium
- Large performance by high speed
- Stone protection

THE ONE PASS SYSTEM

REDUCED COSTS AND LOSS OF MOISTURE

On farms the CTC becomes a reliable implement essential for all operations without making pans! The range of operations is versatile (5-30cm) from shallow to deep stubble cultivation due to the strong tine capacity and high underbeam clearance of 870mm.

High quality soil cultivation.

1

Tillage the soil

The Kverneland CTC offers a 3 or 4 row configuration on a semi-mounted version. In combination with the 200 or 270mm tine distance, this leads to a nice mixing and finishing without the risk of blockages. Optional front depth wheels support optimal depth control. The CTC is equipped with Triflex tines with a release point of 700kg. These are either equipped with leaf spring or share bold protection. A wide choice of shares to adjust the machine to different conditions and tasks is available.

2

Cut residues

Kverneland developed a front disc system to cut or incorporate crop residues in front of the Triflex tines. This optional discs avoid any boiling effect in front of the tines especially when it comes to short wheat straw or high amounts of maize residues.

3

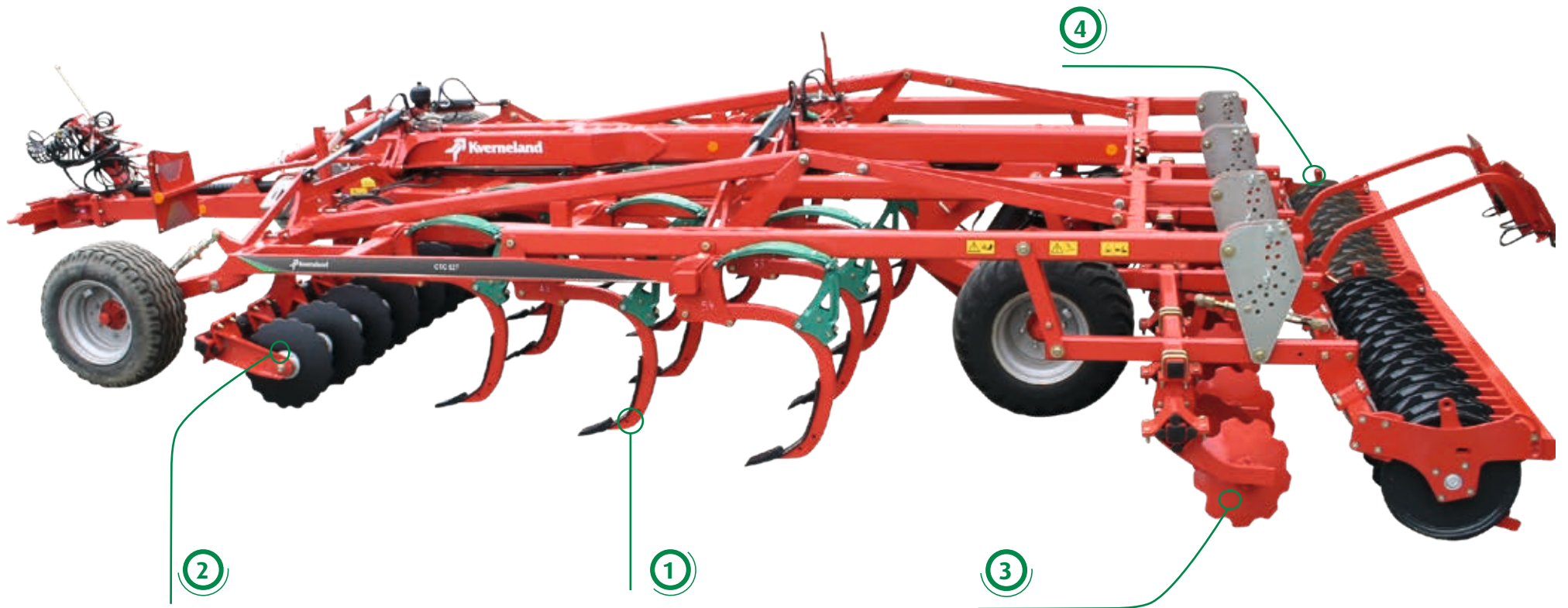
Levelling the soil

The Kverneland CTC offers the choice between a levelling tine, levelling disc and a combi disc harrow system. All units are spring-loaded and can be adjusted in their aggressiveness. Also the angle to the ground can be adjusted. In combination with special border equipment, a perfect levelling is achieved.

4

Consolidating the soil

The last step of perfect stubble cultivation is soil consolidation. A fine level seed bed improves soil closure and a weatherproof finish, reducing slug damage and preserving moisture. Straw decomposition is also accelerated since a larger quantity of straw gets in contact with the soil bacteria through effective mixing. Therefore, a wide range of rollers are available to meet the various conditions and requirements.



200 OR 270MM

for perfect mixture result even with high quantities of residue.

< 6CM

Reconsolidation every 6cm with the Actipack roller for fine crumbling and moisture retaining.

FMD OR FCD

Pre-cutting or mixing of residues to improve the working quality of the cultivation tines.

870MM

High underbeam clearance for high capacity blockage free operation

STRENGTH AND DURABILITY ADVANCED TESTING PROGRAM


Before the CTC was launched into the market, it had passed a whole series of tests to ensure the impeccable quality of the product.

- Sophisticated technologies are used for each development such as static load test, finite elements method (FEM) and shake-lifetime tests.
- Finally the machines are tested in the field under different conditions to reconfirm that the requirements to all functions and strength are met. A strict LOR is defined to meet all kind of soil conditions.

Proven Reliability.

The frame is a result of a long study made by **FEM (Finite Element Method)** calculation to optimise the steel over the working width and proposing a strong structure able to resist to tractors up to 400hp.

The complete CTC range has been designed to be combined with the Actipack roller, which is the heaviest roller in the range. All the most aggressive scenarios (deep working when turning, headland turns, transport tests, ...) have been considered to make the different frames as strong as possible and thus guaranteeing the proven Kverneland quality.

- 
- **Strength**
 - **Long lifetime**
 - **Reliable design**
 - **Proven performance**

USER COMFORT IS KEY EASY ADJUSTMENT

Kverneland always focuses on safe operation and user comfort. With all the adjustments being done without the need for tools, a lot of precious time is saved!

Adjusting the CTC for each soil condition is easily done. If the working depth is changed, there is almost no need to change the position of the levelling equipment thanks to the parallelogram.

In addition, there is hardly any maintenance to be done on the CTC apart from changing wearing parts.

The combi-disc system is adjusted hydraulically. Also the FCD/FMD system is adjusted hydraulically and can be adapted depending on trash conditions during work.

Depth adjustment

The depth adjustment is really simple and adjusted on the rear roller and front wheels level. The front wheels are adjusted by turnbuckle and the rear rollers are mounted on a parallelogram adjusted by pin system.

*Simple adjustment
from the beginning to the end.*

The wheel wagon is placed inside the machine and enables very short headland turns of less than 10m. This supports the weight transfer on the drawbar even when reversing with the heaviest rollers.







- Pre-cutting
- Mixing and crumbling
- Constant cutting depth
- Low pulling force
- Rubber protection

CUTTING AND MIXING IN FRONT

VERSATILE FOR ALL CONDITIONS

Kverneland has developed a front disc system to cut or incorporate crop residues in front of the cultivator tines with the 3 rows configuration. The disc system has a centralised hydraulic depth adjustment, and individual rubber disc protection. This overload system allows the disc to follow the ground contour very well.

The pre-cut for a good flow.

The system of the **Front Mixing Disc (FMD)** with notched hollow discs is the ideal equipment for high amounts of crop residues and ensures pre-mixing of straw standing on the top of the stubble. The system avoids any boiling effect in front of the tine especially with short wheat straw.

The system of the **Front Cutting Disc (FCD)** with notched straight discs is ideal when working in maize straw. The cutting supports the flow of earth and residues and prevents any machine blockage.

As the working depth of the discs section is limited to 5cm, the required pulling force is always insignificant. The adjustment of the pressure can be done on the move from cab hydraulically.





700KG
Penetration force

- 700kg release force and 27cm release height with Kverneland Triflex tine
- Proven overload-protection
- Intensive mixing and crumbling
- Constant cutting depth
- Deep and shallow - full share range
- Knock-on® system for fast share exchange

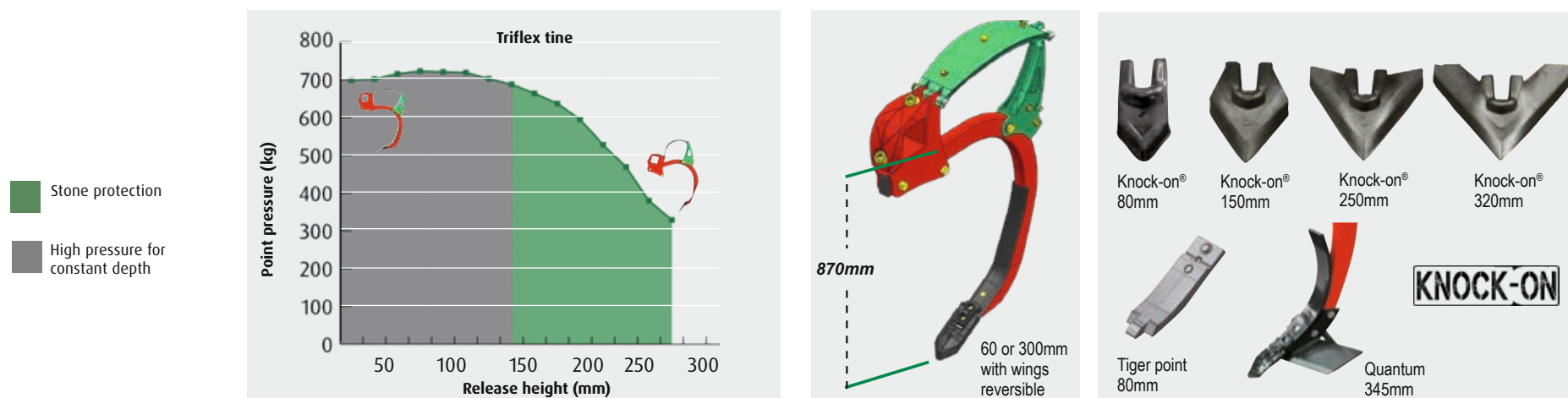
FOR STONY CONDITIONS AND HIGH PENETRATION

TRIFLEX 700: HIGH STABILITY AT DEEP OPERATIONS

The auto-reset Triflex tine uses the well known **Kverneland leaf spring system** to ensure a high point pressure of 700kg in work and a smooth release curve when the tine hits an obstacle. The Triflex tine with narrow design and special shape reduces the pulling forces while ensuring a perfect penetration in most compacted soil. It is the perfect choice for deep loosening and working on heavier soil types strewn with stones.

Proven leaf spring and Knock-on® system.

The Triflex 700 tine can be equipped with different shares to adapt to different working depths and tasks. 7 types of share equipments are available with the patented Knock-on® system. It is the easiest way of changing parts on a cultivator, either to adapt the machine to the job to be done or to change wearing parts.



PERFECT LEVELLING

LEAVING AN EVEN SURFACE

In order to create an even surface for a fine seedbed, Kverneland offers two options of levelling tools for the CTC. The levelling equipment is directly linked to the roller. If the working depth changed via the roller, the levelling equipment will stay at the same optimal levelling position.

Levelling tines are a very easy and economic way of levelling and to handle normal straw conditions on light to medium soil types. When it comes to heavy amounts of residues and also more clay or loamy soils the **levelling discs** are more suitable.

Both versions are overload protected by a spring and mounted via a parallelogram to avoid damages in stony or other difficult conditions. Individual springs ensure individual release of tines or discs and keep levelling quality even in stony conditions. The pressure on this spring and also the angle of the levelling discs/tines can be adjusted for a perfect result.

The **combi discs harrow** is a single disc gang which can be combined with all types of roller and can be well adapted to high amounts of residues due to the very good levelling capacity. The setting is hydraulically and border discs ensure that residues stay as long as possible in the working area.









CONSOLIDATION

FIRM SEEDBED

The roller on a cultivator is an elementary tool with different tasks:

1. Consolidation of the soil structure
2. Breaking of clods
3. Finalising the levelling
4. Supporting the working depth

Cracking performance.

The choice of the right roller depends on the soil type, soil condition and crop rotation. Also the lifting capacity of the tractor needs to be considered when looking for the right combination.

Depth control

The rear depth control of the Kverneland CTC is adjusted via the roller equipment. The roller attachment concept enables the working depth to be easily adjusted by pin. The levelling tine sections are simultaneously adjusted with the roller but can, if necessary, be fine-tuned.

CONSOLIDATION

ROLLERS FOR ALL TYPES OF SOIL



Actipack Ø 560mm - 220 kg/m

- The Actipack roller displays its superb working qualities especially on medium to heavy soils and also in wet, stony and sticky conditions thanks to the independent skids and knives.
- The cutting discs break the larger clods whilst the adjustable knives cut the remaining clods resulting in optimal clod breakdown and fine seedbed preparation.



Actiring ø 540mm - 160 kg/m

- The Actiring roller is a lighter variant of the Actipack, using the same frame structure and knife system.
- The discs have been replaced by a "V" profile ring, this is saving 60kg/m, which is of critical importance for reducing lifting requirements for mounted equipment.
- Actiring is not recommended in stony conditions.



Actiflex ø 580mm - 160 kg/m

- The Actiflex roller has been made to create an intensive mixing with all types of conditions, even stony ones.
- The rings are made with spring steel to have a high resistance against stress at high speed.
- Actiflex rings are separated by skids to prevent any accumulation inside the roller.
- This roller is the ideal tool to create a nice seedbed and enhance the weeds regrowth after harvesting.



Work done with an Actipack/
Actiring roller: left side skids
lifted up (not active), right side
skids down in action.



Actipress Twin ø560mm - 250kg/m

- U-profile for high carrying /rolling capacity in light soils
- Clod breaking also in heavy conditions
- Possibility to make different soil profiles by locking the rocking (even or corrugated)
- Self-cleaning effect thanks to the twin u-ring concept
- High stability thanks to the oscillating frame
- High and homogenous consolidation
- Can also work in stony conditions



Cage roller ø 550mm - 90 kg/m

- 10 bars for a good loading capacity and operation in wet conditions
- Effective crumbling action



Double cage roller ø 400mm (tube/flat) - 160 kg/m

- Good crumbling and levelling effect
- Precise depth control
- High carrying capacity

- **Operator-friendly due to maintenance-free bearings**
- **Protection against dust and water with 5 sealing lips**
- **Extended lifetime: Protection of bearings with an additional steel cover in heavier conditions like stones, twine, mud etc.**

SAFE ON THE ROAD EASY TO CONVERT

Easy conversion from working to transport position. The two-part hydraulic folding gives a transport width of 3.00m and ensures smooth running and safe road transport.

The CTC models are homologated* at 25km/h in Europe. The CTC also has the option of hydraulic or pneumatic braking systems which allow the machine to meet road transport regulations, especially when travelling at high road speeds.

The hydraulic transport locking device unlocks automatically when unfolding.



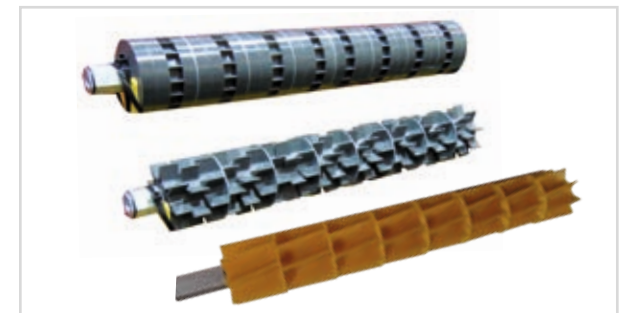
STUBBLING AND SEEDING IN ONE PASS

INTEGRATED SEEDER FOR COVER CROPS

The EU nitrate directive aims to protect water resources classed as vulnerable with 50mg nitrate/l. One of the measures considered to avoid nitrate leaching in the water source is the systematic coverage of soils by a vegetal cover in autumn. This cover will absorb nitrogen from the soil and air, and converts it into organic nitrogen compounds. The cover will then release nitrogen to the next crop (1/3), hereby improving soil structure and protecting it from erosion.

a-drill 200 (200l) used for rather small seed rate and a-drill 500 (500l) preferred with higher seed rate (25 to 50kg/ha - mix of seeds, grass, etc.) have been designed to meet a rapid implementation of cover crop during stubble operations while minimising costs. In addition, the a-drill can also be used for establishing rape seed or mixtures of different diameters seeds (leguminous plant, cruciferous, etc.).

The a-drill 200 & 500l can be equipped with two types of fan: electric recommended for small seeds and allowing seed rates of 4 kg/min or hydraulic for rates up to 14 kg/min.



ORIGINAL PARTS & SERVICE

ONLY ORIGINAL PARTS WILL KEEP YOUR MACHINE A KVERNELAND



Did you know that Kverneland parts are manufactured to the same high standards and strict specifications as Kverneland machines? Original Parts will always work and fit as intended, and are guaranteed to keep your machine running at maximum performance.

Kverneland has been a symbol of quality since 1879; the experience we have, combined with a constant strive to improve our products, ensures that the best parts are available for your Kverneland machine. Parts and service surround your machine with a safety-net. The quality of the machine ensures optimal usage and the quality of the parts provide a low life-cycle cost and longer wearing time.

Our long term relationship starts at the purchase of your Kverneland machine, and we will continuously stay by your side for support and assistance. We will guide you on the way to make sure you achieve maximum performance, productivity and profit.

Do not compromise quality with cheap solutions, remember that only Original Kverneland parts are the guaranteed solution to achieve what is expected by a Kverneland machine.



YOUR PARTS SPECIALIST

Through our worldwide dealer network you will find your local dealer, whom is always prepared to assist you. Your Kverneland dealer knows every inch of your machine and will gladly provide the expertise needed to ensure that you are operating at maximum potential.

Your parts specialist has got all the parts that you need and will also have the facilities to service your machine. Make sure to visit your Kverneland dealer on a regular basis to be updated on promotions and product news that you will not find elsewhere.



ALWAYS AVAILABLE

Time is money, and we know the importance of receiving the right parts at the right time! Your Kverneland dealer is supported by a massive distribution network to supply you with exactly what you need, when you need it.

Our main distribution centre is located in Metz, France. A strategic location for distributing parts to all corners of the world. With over 70.000 parts in stock and 24/7 service, we are ready to supply you with parts – at any time!



EASY ACCESS TO INFORMATION

Are you looking for a complete overview of parts for your machine? Maybe you are searching for more technical information? Our Online Search Database, *Quest*, provides all information available for your machine.

Various documentation like Parts Manuals, Operation Manuals, Software updates and FAQ's are all there. *Quest* is available in several different languages and can be accessed wherever and whenever. All answers are easy to find – just a few clicks away !

TECHNICAL DATA

Model	CTC 400	CTC 500	CTC 600
Frame	semi-mounted fold	semi-mounted fold	semi-mounted fold
Working width (m)	4.00	5.00	6.00
Transport width (m)	3.00	3.00	3.00
Type of tine	Triflex 700 tine with leaf spring or shearbolt protection		
No. of tine rows / row spacing (mm)	3 rows with 270mm or 4 rows with 200mm		
No. of tines / working width	15 (spacing 270 mm with 3 rows) / 4.00 m 19 (spacing 200 mm with 4 rows) / 3.80 m	17 (spacing 270 mm with 3 rows) / 4.60 m 23 (spacing 200 mm with 4 rows) / 4.60 m	21 (spacing 270 mm with 3 rows) / 5.70 m 29 (spacing 200 mm with 4 rows) / 5.80 m
Mainframe (mm)	Square frame 200 × 200mm / Wing sections 100 × 100 mm		
Linkage	Cat. III or Cat. IV cross shaft or pulling eyes		
Underbeam clearance (mm)	870		
Regular tine spacing (mm)	270 mm with 3 rows or 200mm with 4 rows		
Front equipment	FMD or FCD front disc section (only with 3 row version)		
Levelling device	Levelling tines, levellings discs or combi disc harrow		
Roller offering	Cage roller (ø 550mm), Double Cage roller (ø 400mm), Actiring (ø 540mm), Actiflex (ø 580mm), Actipack (ø 560mm), Actipress Twin (ø 560mm)		
a-drill	200 or 500 l		
Transport wheels	400/60 x 15.5 or 480/45 x 17		
Gauge wheels	340/55×16		
Brake	Hydraulic or pneumatic		
Min/Max HP	145/300	175/350	205/400
Total weight without accessories (kg)*	3800	4200	5000

* Weights are given as an indication.

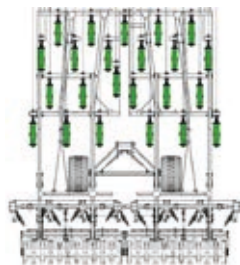
semi-mounted fold

200mm row spacing

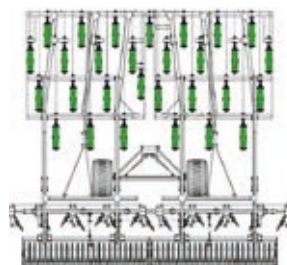
CTC 420 - 19 Triflex tines



CTC 520 - 23 Triflex tines



CTC 620 - 29 Triflex tines

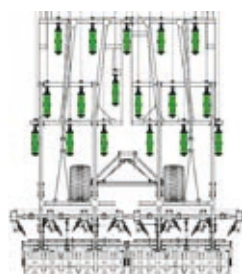


270mm row spacing

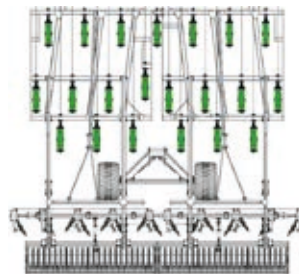
CTC 427 - 15 Triflex tines



CTC 527 - 17 Triflex tines



CTC 627 - 21 Triflex tines



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WHEN FARMING MEANS BUSINESS

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