

**Trailed Cultivator  
CTC**



# **Multi Purpose for more Flexibility**





# Kverneland CTC

## Soil Preparation with Modern Flexibility



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 adaption in techniques that accomplish all requirements of modern crop cultivation.

As one of the largest suppliers of plough and cultivator based soil preparation systems Kverneland uses its knowledge on the diverse requirements in cultivation and integrates this into all machine development steps.

One of today's most important perceptions is that only with a wide range of implements can you fulfil all the requirements in soil preparation.

The Kverneland CTC cultivator is the machine that can meet all these needs.

### Targets of soil preparation

After harvest shallow stubble cultivation is the most important step in the reduction of weeds. A uniform mixture of crop residues and firm recompaction increase the volunteer germination rate in dry weather conditions. The following working steps aim for several goals of crop cultivation. Crop residues need to be uniformly mixed throughout the full working depth. Additionally any compaction of the soil needs to be removed. If the main focus of the cultivation operation is especially to reduce weeds, the timing of cultivation is most important. This is also the case when combating slugs and mice. If for example the soil is only shallow cultivated in dry conditions, the cultivation will only have minor effects on the slug population.



### **Kverneland CTC, flexibility to meet all demands**

The tasks of modern soil preparation are multifunctional.

Additionally farmers have to meet their specific needs which are predetermined by location and farming practises.

The equipment possibilities of the Kverneland CTC are as versatile as your demands, with a choice of different implement combinations and variants. Kverneland offer the possibility to equip the CTC to meet your individual needs.

The Kverneland CTC offers total flexibility with:

- ✓ 2 tine variants
- ✓ 2 tine spacings
- ✓ 9 types of shares
- ✓ Front Cutting or Mixing discs
- ✓ 3 types of levelling devices
- ✓ 6 types of rear roller



# Kverneland CTC

## 3 or 4 Rows of Tines



The CTC equipped with 3 rows of tines positioned at 270mm spacing. When fitted with 4 rows of tines the tine distance is 200mm, ensuring optimum mixing and intensive cultivation.

A maximum working depth of 30cm is possible. The Quantum share (345mm), ensure that the entire working width of the machine is cultivated 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 87cm 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.

A maximum working depth of 30cm is possible.





### Front Depth Adjustment

The front working depth is adjusted by the depth control wheels. The 340/55×16 tyres ensure excellent support in light conditions.

A floating drawbar ensures full ground contour following and can be equipped with a ram for lifting the machine parallel.



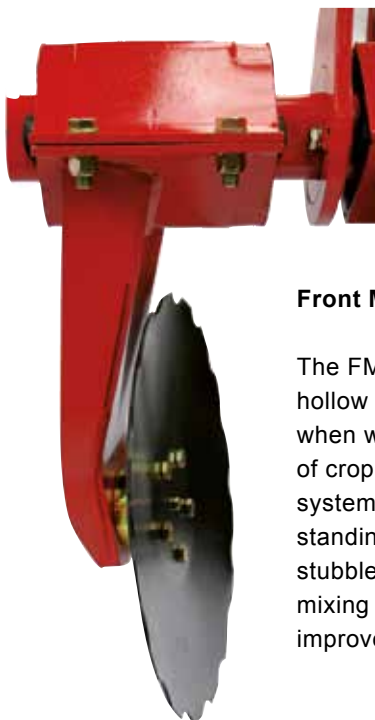
### Rear Depth Control

The rear depth control of the Kverneland CTC is adjusted via the roller equipment. The parallelogram frame concept enables the working depth to be easily adjusted. The hollow discs or harrow sections are simultaneously adjusted with the roller, if necessary fine tuning of the levelling tools can also be achieved. Therefore the adjustment of the working depth is simple and user-friendly.



# Kverneland CTC

## Front Mixing and Cutting Disc



### Front Mixing Disc (FMD)

The FMD system has notched hollow discs which are ideal when working in high amounts of crop residues. The FMD system pre mixes any straw standing on the top of the stubble to ensure thorough mixing by the stubbling tines for improved incorporation.



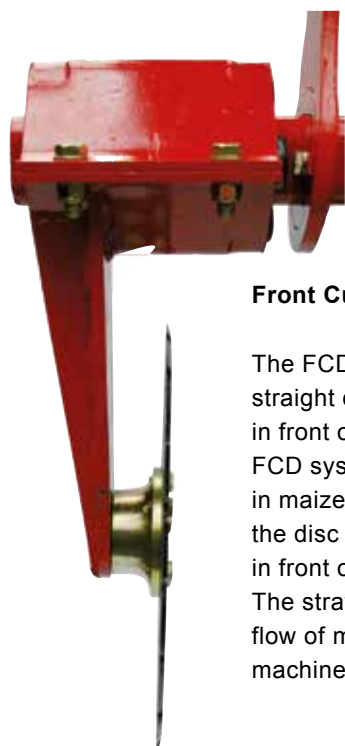




Kverneland has developed a front disc system to cut or incorporate crop residues in front of the cultivator tines with the 3 rows configuration.

The disc system has a centralized hydraulic depth adjustment, and individual rubber disc protection. This overload system allows the disc to follow the ground contour very well.

The Front Mixing Disc (FMD) option is the ideal equipment that avoid any boiling effect in front of the tine especially with short wheat straw. 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.



#### **Front Cutting Disc (FCD)**

The FCD system has notched straight discs which are mounted in front of the first row of tines. The FCD system is ideal when working in maize straw for example, where the disc is cutting the straw directly in front of the tines.

The straw is cut to improve the flow of material and prevent the machine from blocking.



# High Tech Hollow Tine Technology

## High Flexibility

One of the main advantages of the hollow tine technology is the ability to flex sideways by up to 20cm helping to bypass obstacles below the field surface. Fields are rarely 100% square and the sideways forces for standard forged and full material tines produce a lot of stress to the tine holder system and consequently to the frame structure. To avoid this stress on all components Kverneland think strong rather than big: The natural quality of fine grain steel and the use of our proven heat treatment process can provide immense strength to a simple piece of tube. Being flexible this tube can then „flex around“ obstacles and erase stress peaks by dispersing it throughout the implement.

## Maintenance-free Zone

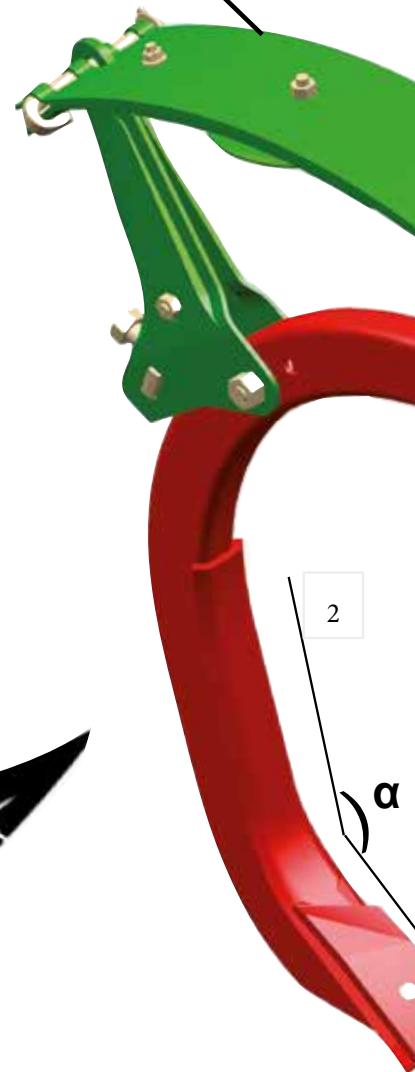
The CLC tine is a maintenance-free zone. All components are heat treated and produced from a very high quality hardened steel. These parts are then able to sustain high pressure and friction without the need for any greasing. Greasing is both costly and time consuming and in some cases greasing parts can cause even more damage (at its worst grease attracts fine dust and encourages wear) than providing protection. Therefore Kverneland always minimises the need for greasing points when designing their machines.

## A Special Angle

The tine shape with two working angles guarantees an efficient penetration. The first zone lifts the soil for a good loosening. The second zone with little power requirement ensures an efficient and homogeneous mixing.



F = 640 kg



**Kverneland offer a wide selection of shares including the Knock-on patented system. The CTC now uses a unique "C" tine design and can be equipped to suit all needs in all crops every season, every year!**



"C" Tine with standard reversible plough point.



Standard reversible point in combination with 30cm wing share for shallow working.

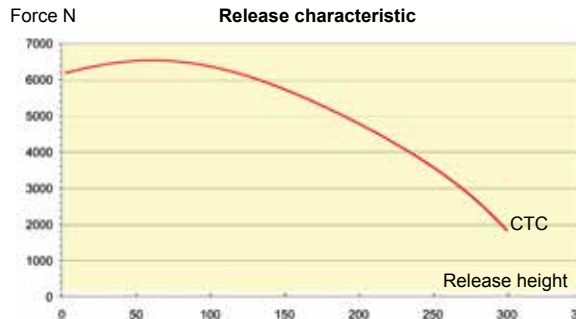
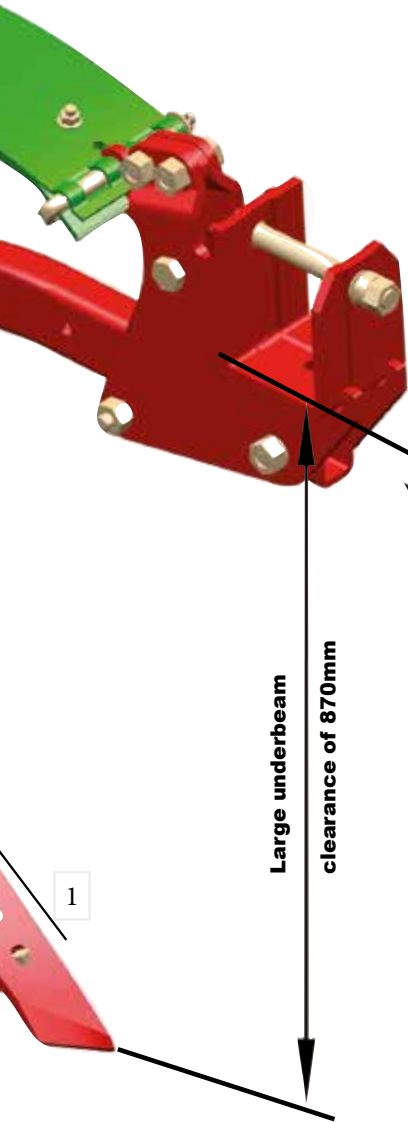


**Quantum share 345mm** - always in combination with Knock-on or Tiger carbide point 80mm. It has been designed for use especially against hard soil. The action of the 80mm point combined with the 345mm wing share ensures perfect penetration, and complete flat cutting for a homogeneous weed regrowth.





## A Jack Hammer



The release curve of the tine describes a descent of force beyond a release height of 10cm to avoid a transmission of stress onto the frame structure.



Hollow tine 70x40mm



### Leaf spring

The renowned Kverneland Auto-reset leaf spring system (same as on the ploughs) guarantees high reliability as well as low maintenance costs. Being a real 3D safety system, the Kverneland leaf spring system allows movements up to 35cm and thus supports perfect cultivation results even at a deep working depth.

With a 640kg weight, the tines are kept at a stable position under all soil conditions, which ensures constant depth control. The piano effect, where the tines move back and forth, is minimised and fuel consumption is reduced to a minimum.

### Vibromat shear bolt system

As an alternative to the auto-reset leaf spring, a unique shear-bolt system is also available. The leaf spring is replaced by a plate holding a standard 12mm shear bolt through the leg. With the tine being so flexible the leg can bend backwards 10cm and reach up to 2 tons pressure at the point before the bolt shears. This effect is named Vibromat®, and anticipates untimely breaking of bolts and therefore helps to reduce down time.

### Patented Tine Holder

This tine holder system consists of squeezing a U-shaped plate onto the frame beam by means of a single bolt. This U-plate is 100mm wide and enables the tine to be located deep onto the main frame. One of the many advantages of bolted tine carriers is the reduction in the volume frame weakening welding required. With the tines being light (35kg) and fitted with a single bolt, it is very easy to take them off to adapt the cultivator to the working conditions and the tractor available.



**2 types of carbide points** - 80mm and 150mm Tiger point. The special design ensures progressive and high penetration and requires low pulling force. The special shape of the carbide plate resist against aggressive stony conditions. All points available with Knock-On deflectors too.

**KNOCK-ON**



Coulter width (mm)

320

345

250

150

80

Working depth (cm)

3-10

3-15

3-15

8-25

10-35



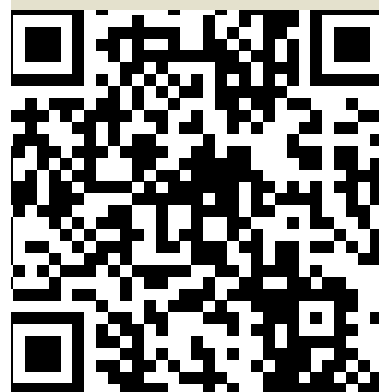
# Fast and Easy Metal Change with



**With Knock-on minutes become seconds!**

To change the points on a 3.00m unit with 10 tines it takes 1 minute and 30 seconds - whilst only 20 minutes are needed with bolted reversible shares.

QR-Code: Video Knock-on



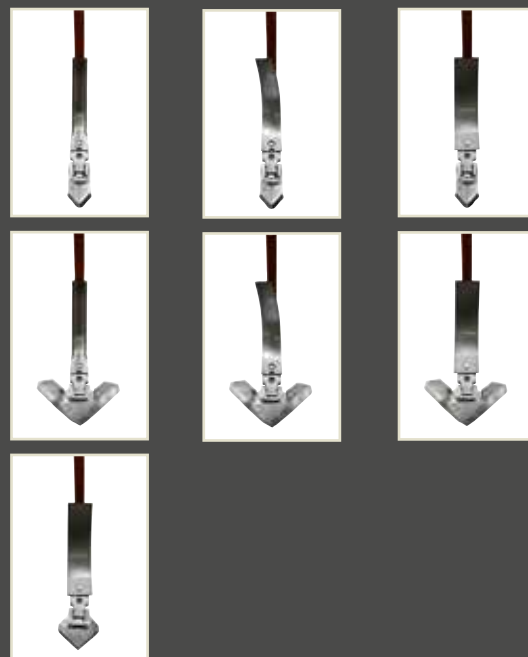
## Soil friendly

When work has to be done the machine should provide the best possible effect and cause the least damage to soil structure. Therefore, the Knock-on system offers a wide range of deflectors and tine protections which can be more or less active in boiling and breaking down aggregates.

The Knock-on range is full of possibilities offering 6 cutting widths with 80, 150, 250, 320mm shares and 345mm Quantum share to match with various tine spacing and depth requested.

In wet soil a wide deflector should not be used. A narrow protection plate will produce smaller aggregate maintaining soil structure. This in addition will save fuel. However in optimum conditions a good boiling effect will be possible with the wide deflector.

In order to make it easy and fast, the deflectors are locked by a single bolt.





# 90% Down Time Saving!

## Cost Effective and Eco-Friendly

Knock-on is a patented system and 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. This user friendly system is able to work from 3 down to 30cm in a very economic way in regards to the low pulling requirement and the cost of the parts which is the same level as the standard points.

Kverneland always uses the highest quality steels. This enables the Knock-on to use a simple locking system. The Knock-on system fits easily to the tine, requiring only a hammer to knock the parts in and out in seconds.



## Economic...

The bulb shape on the shares protects the holder system by decreasing the soil pressure on it. The holder can take several shares before it has to be changed, reducing the downtime dramatically.

If the soil is wet or dry the shares will not behave the same way:

1. In dry soil, the point wears down to the end, the bulb continues to protect the holder.
2. In humid soil, the point wears thin but will not lose its shape. When a hole appears its time to consider changing the point.

## ...and Ecological

As a comparison, a standard reversible point (1300.g) worn out after having done the same number of hectares (been reversed half way) as the Knock-on parts above. With the Knock-on system, up to 75% of the original part can be used, in comparison to standard points where only 60% can be used. This saves more than 200g of steel each time a point is changed. Thousands of Kverneland tines will contribute to savings a lot of steel and energy!



1000g



250g



280g



500g



James Nott is farming a 900 ha farm near Sudbury in the UK and has been using the Knock-on system on his Kverneland CTC for 2 years. „The Knock-on system is simple, quick and easy, we like the extra depth the point and holder gives the CTC. As the metal wears it does not lose its shape. In all soil types and conditions penetration is excellent.“



# Perfection until the End



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

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



**Cage roller Ø 550mm** **90kg/m**

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



**160kg/m**

## **Actiflex Ø 580mm**

The Actiflex specially designed to match with all types of conditions. Its intensive mixing effect combined with a good recompaction makes this roller the ideal tool for the best volunteer's regrowth. Its large diameter of 580mm ensures a good driving effect even in light soils. This roller is definitely a good compromise between the weight (160 kg/m) and mixing performances.



## **Levelling discs:**

- Rubber spring loaded, to follow the ground and protect
- Border discs as standard
- Disc linked to the roller via a parallelogram. The disc will stay at same position for levelling when changing working depth
- Easy adjustment via turnbuckle to set up disc position



## **Levelling tines:**

- Good levelling capacity
- Good following of the ground contour
- No risk of soil blockage
- Easy to adjust
- Very low loading capacity



## **Combi disc harrow:**

- Combination of a single disc gang with all roller types
- Intensive mixing and incorporation, well adapted to high amount of residues
- Very good levelling capacity



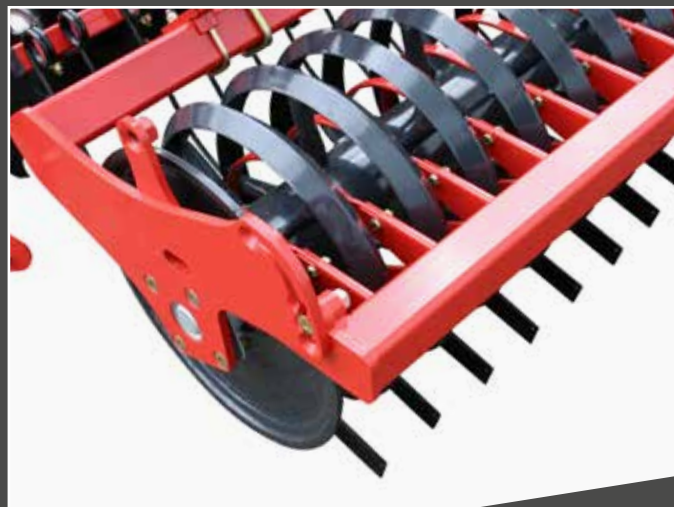
## Active Rollers - a Second Soil Preparation Tool



220kg/m

### Actipack: A second preparation tool!

The Kverneland Actipack roller displays its superb working qualities especially on medium to heavy soils. The integrated cutting discs break the larger clods whilst the adjustable knives cut the remaining clods resulting in optimal clod breakdown. The pressure on knives can be set as high as that of the disc to provide equal firming on the entire working width. An "Off" position allows the knives to be lifted completely to leave a rougher surface and help protect the top layer of soil from capping and erosion.



160kg/m

### Actiring: Strong and light!

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 saves 60kg/m, which is of critical importance for reducing lifting requirements for mounted equipment. This design will also provide a lower cost alternative to the Actipack especially in lighter soil conditions where the additional features of the Actipack are not required. The wider shallow angle of the V profile is less aggressive than that of the Actipack disc design resulting in a better load carrying in medium to light soil conditions. The springs and knives have been especially designed to prevent stones getting into the rotor and causing blockages.



Actipack and Actiring: 4 different pressures can be applied on the skids depending of the soil nature and the required finish.

**Skids up  
(not active)**

**Skids down  
(active)**



## Transport: Fast - Simple - Safe







With today's large scale farms spread over wide distances it is often necessary to drive long distances between fields.

Therefore the Kverneland CTC can be lowered for transport for improved handling. The CTC frame incorporates an hydraulic chassis suspension system as standard. 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 that are achievable with today's modern tractors.

Quick on the road and quick in the field. The CTC can easily be converted from transport to work position. The hydraulic transport locking device unlocks automatically when unfolding.

#### **Always the safety first!**

Depending on the country, Kverneland proposes 3 different wheel axles: without brake, hydraulic or pneumatic brake.

2 types of wheels are available according to the soil conditions and season of use: 400/60 x 15.5 or 480/45 x 17 for better carriage capacity and then reducing the soil compaction.



## a-drill (200 & 500 Liter)

### Stubbling and Seeding in one Pass



The position of the Distribution outlet is before the roller. Position and angle are adjustable.



#### Fans adapted to Seeds, Working Speed and Width

- The SH series can be equipped with two types of fan:
- An electric fan recommended for small seeds and allowing seed rates of 4 kg/min (for a machine 50kg/ha - 4m working width at 12km/h)
- A hydraulic fan for flow rates up to 14 kg/min





## Seeders for Cover Crops: One Response to the Nitrate Directive

The EU nitrate directive aims to protect water resources so-called vulnerable with a rate higher than 50 mg nitrate/l. One of the measures taken into account to avoid leaching, resulting in the generalization of the soil cover in the fall by vegetation cover, which will absorb nitrogen from the soil and air, to convert it into organic nitrogen. The cover crops will then release nitrogen to the next crop (1/3), protect soil against erosion and improve its structure.

a-drill 200 and 500 with 200l resp. 500l hopper capacity have been designed to meet a rapid implementation of cover crop during stubble operations while minimizing their costs. In addition, they can also be used for establishing rape or mix of different diameters seeds (leguminous plant, crucifers, ...).

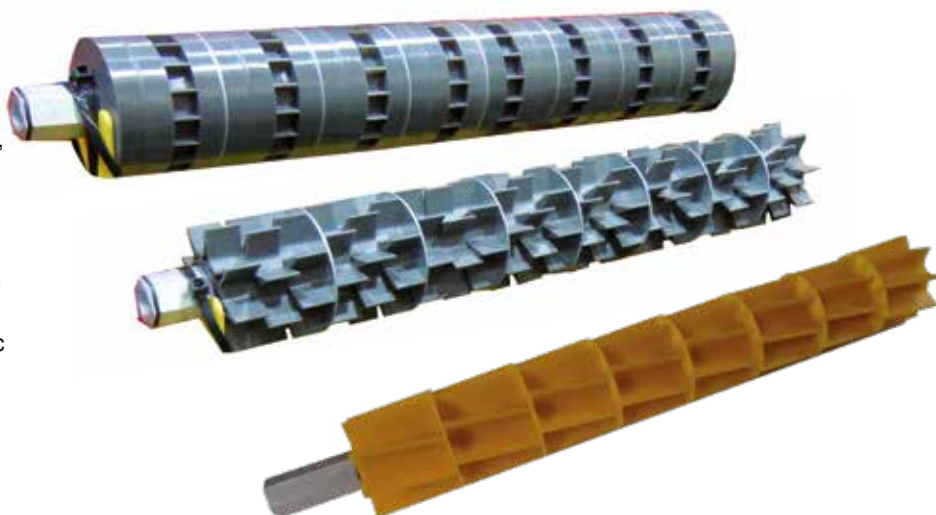
## Precision and High Work Output

Two models are available depending of the seed rate/ha and the output of the machine: The a-drill 200 will be used for rather small seed sizes with a low seed rate/ha, whereas the adrill 500 would be preferred with higher seed rate (25 to 50 kg/ha - mix of seeds, grass, etc ...) in order to maintain a significant autonomy even with wide machines. Both models have 8 outputs which will spread the flow of seeds uniformly over the working width.



## Seed Metering Rotors for all Conditions

The a-drill 200 and 500 are delivered with two types of rotor: one for small seeds (rape, mustard, cabbage, clover, etc ...), and a medium rotor for seeds (vetch, grass, sunflower, ...). The agitator placed above the rotor ensures a steady stream of seeds. A brush, located at the base of the rotor, will regulate the flow and improve the setting accuracy. For large seeds (peas, horse beans, etc ...), it is strongly advised to choose the Flex rotor option, which is able of deforming with large seed diameter.





# Always the Correct Linkage!



**Cross shaft**  
**Cat. III or Cat. IV**

The crossshaft allows an angle of steering lock of up to 180° for an excellent manoeuvrability.



**Pivoting pulling eye ø50mm**

It is used on fixed hitch and allow to work in hilly conditions.



**Fix pulling eye ø 50mm**

It is used to link the CTC to a fixed hitch.

## **Please note:**

- ▶ For tractors equipped with twin wheels or wide wheels, the machine can get a drawbar extension of 85 cm to ensure short turns in headlands
- ▶ The machine equipped with a fix eye must get the parallel lifting



# Technical Data

Type	CTC 400	CTC 500	CTC 600
Working width (m)	4.00	5.00	6.00
Transport width (m)	3.00		
No. of rows	3 (spacing 270mm) or 4 (spacing 200mm)		
Type of tine	CLC tine with leaf spring or shearbolt protection		
No. of tines/working width	15 (spacing 270 mm) / 4.00 m 19 (spacing 200 mm) / 3.80 m	17 (spacing 270 mm) / 4.60 m 23 (spacing 200 mm) / 4.60 m	21 (spacing 270 mm) / 5.70 m 29 (spacing 200 mm) / 5.80 m
Levelling	Notched hollow discs (rubber mounted), Combi disc or levelling tines		
Rear roller	Cage roller (Ø 550 mm), Double cage roller (ø 400mm), Actiring (ø540mm), Actiflex (ø580mm), Actipack (Ø 560mm),		
Mainframe	Square frame 200 × 200mm / Wing Extensions 100 × 10 mm		
Underbeam clearance (mm)	870		
Linkage	Cat. III or Cat. IV cross shaft or pulling eyes		
Transport wheels	400/60 × 15.5 or 480/45 × 17		
Weight (without accessories) (kg)	3800	4200	5000
<b>Other equipment</b>			
Front implements	FMD or FCD front disc section		
Brake	Hydraulic or pneumatic		
Min. power requirement (HP)	145	175	205
Max. power requirement (HP)	300	350	400



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## Kverneland Group

**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.



## Original Spare Parts


**Kverneland Group spare parts are designed to give reliable, safe and optimal machinery performance - whilst ensuring a low cost life-cycle. High quality standards are achieved by using innovative production methods and patented processes in all our production sites.**

Kverneland Group has a very professional network of partners to support you with service, technical knowledge and genuine parts. To assist our partners, we provide high quality spare parts and an efficient spare parts distribution worldwide.



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