



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.

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 legislation issues. From conventional methods to conservation tillage: the balance of operations at the right time has to be found to achieve high yields within the ideal 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

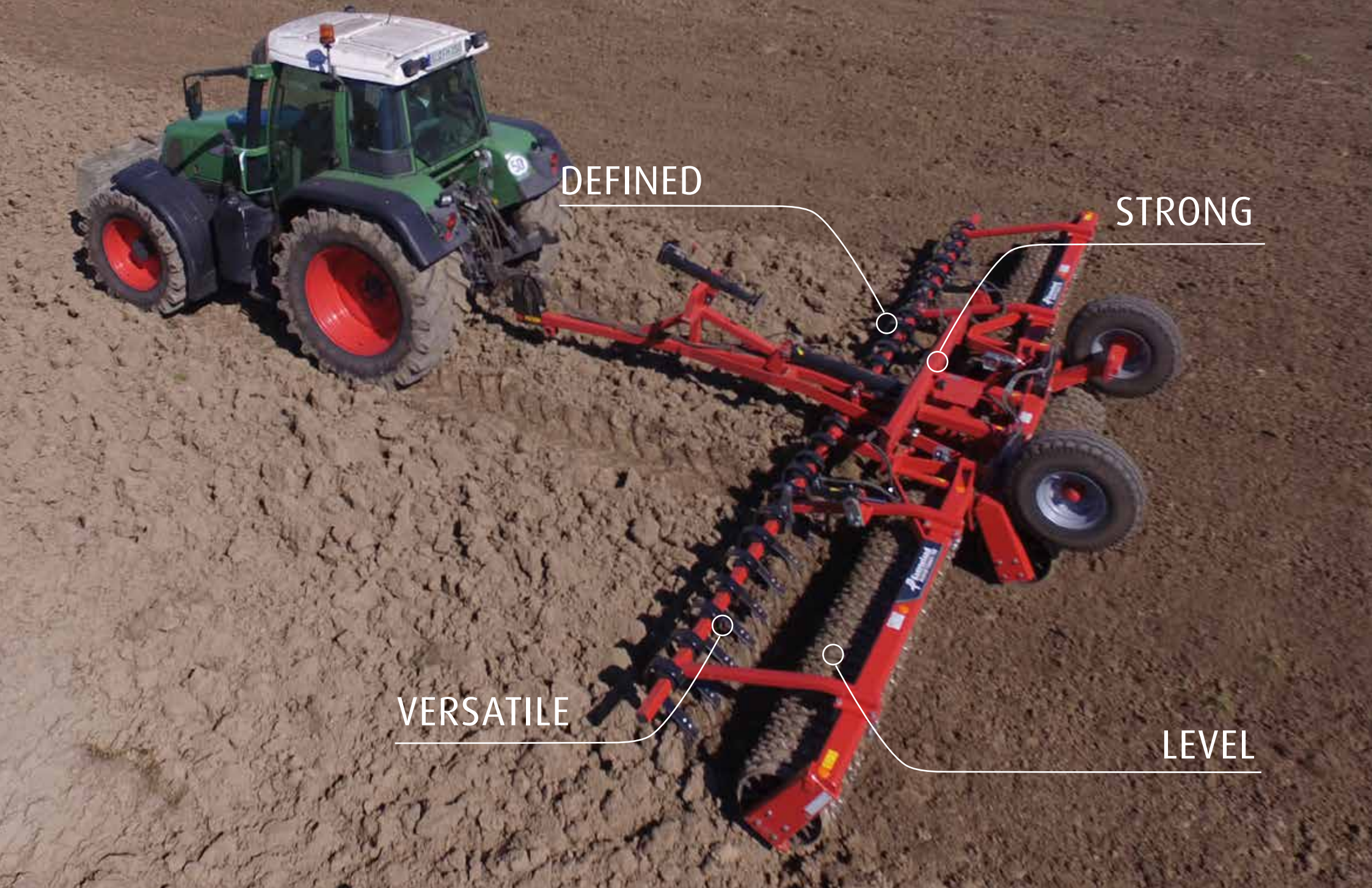
- **Zonal strip loosening** before or during seeding of up to 1/3 of the row width (Loibl, 2006). Up to 70% of the soil surface remains untouched.
- Strip-till combines the soil drying and warming benefits of conventional tillage with the soil-protecting advantages of no-till by disturbing only the area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



DEFINED

STRONG

VERSATILE

LEVEL



PERFECT RECONSOLIDATION A SOUND FOUNDATION

Versatile

Soil structure and working conditions are different in every field. After frost period consolidation ensures that roots retain soil contact or in spring after seeding it reduces loss of moisture. You want to adjust your roller to suit your local requirements. Be demanding – be specific and versatile!

Defined

A weatherproof and even seedbed is the basis. Defined consolidation is important to avoid evaporation especially in dry conditions. This is the basis for your yields. Offering all plants the same access to nutrients, moisture and light. Prevention of erosions in top soil layer.

Strong

You want a machine that lasts, that copes with the stress on the material over long time. Still, you don't want extra weight. That's why Kverneland has optimised the ratio between machine weight and consolidation, ability to follow the ground contour and weight distribution.

Level

The smaller aggregates are deposited in the lower level of the tilth to promote rapid and uniform germination and also to prevent loss of moisture whilst the coarser clods are kept on the surface to reduce the risk of surface capping.

*Constant consolidation to get
perfect access to nutrients and moisture.*



LEVELLING AND CONSOLIDATION THE ROLLERS FOR MORE

Consolidation is often considered the most important part of the cultivation system. The cultivated mixed and restructured profile if not consolidated can be too loose losing valuable moisture or becoming soft and unworkable when wet. Weathering effect shows how pressing action cuts and opens the clods allowing the fissures to spread and break down during wetting and drying process. Consolidation benefits the environment by reducing erosion and CO₂ emissions.

With the Actiroll, Kverneland provides a range of rollers which is the right choice for both before and after seeding and opens a wide field of applications. In fact, the Actiroll range is dedicated to the following jobs:

On ploughed land

Versatility is key.

- Reduced wind and water erosion
- Levelling and consolidation. A weatherproof finish allows moisture retention when dry and transition (water infiltration) through the profile in wet conditions.

On land with intermediate crops

- Destroying residues especially during frost period and promoting plant decomposition

On grassland

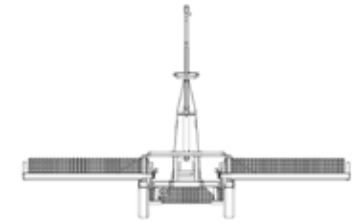
- Destroy molehill and promoting of plant stocking
- Promotes plant development and removes rodent activity

Before or after seeding

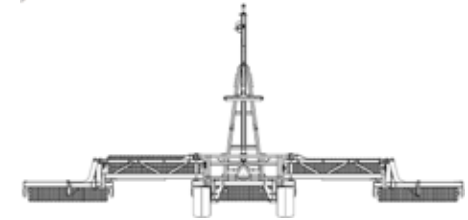
- Preparing the soil for the ideal seedbed to enhance even germination for small seeds such as oil seed rape, grass, cover crop etc
- Seedbed preparation in front of spring seeding, for example maize crops or sugar beet. An even seedbed with a consolidated top soil layer is required for good access to moisture, nutrients and light especially in the first germination period.
- After frost period to ensure that roots still have contact with the soil to have access to nutrients and water.



ROLLER RANGE



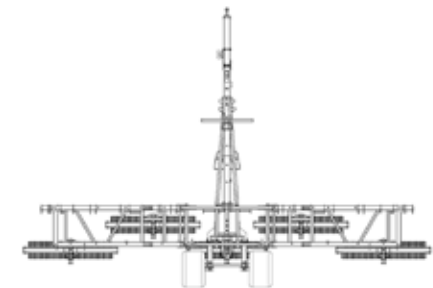
Actiroll 830



Actiroll HD 1230



Actiroll HD 2430



Actiroll HDC 1230

CONSOLIDATION IS ELEMENTARY

FULL RANGE AVAILABLE

- **Effective seed/root to soil contact to enable efficient nutrient transfer.**
- **Minimal moisture loss, especially important in dry years when crop development can suffer.**
- **Improved drainage and water infiltration, especially important in wet years when a good, consolidated soil structure ensures access to plant root systems for water, air and nutrients.**
- **Reduced soil erosion, as the soil is both structured and stable - an essential consideration for farmers.**

The Kverneland Actiroll trailed rollers have been designed to ensure efficient soil compaction and levelling, either after seeding for an optimum germination or after winter frosts. Furthermore, they reduce the soil porosity and limit evaporation in dry conditions. The Cambridge rings "Stone Rings" convince with a special design that allows Kverneland to give a 3 or 6 years guarantee on these.

- Actiroll: 6 trailed models; 4.50 to 9.50m - up to 200hp
- Actiroll Classic: 1 trailed model; 6.30m - up to 150hp (without Clod Board)
- Actiroll HDC: 2 trailed models; 10.30 and 12.30m - up to 375hp
- Actiroll HD: 8 trailed models; 10.30 to 24.30m - up to 550hp (without Clod Board)

Perfect arrangement

The individual sections are completely independent of each other. Each roller gang, including the centre one is individually hinged in the centre to ensure both optimum adaptation to the varying soil levels and weight distribution. The individual elements are positioned optimally in relation to each other. The offset symmetric arrangement prevents overlapping and formation of banks. Depending on working width the roller segments are divided in 3 to 9 roller gangs.

High performance at high speeds.

Compact and easy handling

Fitted with all elements requested the Actiroll offers all details for safe road transport. In folded position the lateral sections are mechanically locked to the main frame. Therefore, the rings will not hit the frame during transport. The parking leg is placed on top of the main frame.

CONSOLIDATION OF THE WORKED PROFILE

ROLLING EFFECTS

Effective consolidation plays a crucial, but often under-appreciated part in modern arable farming. As part of a reduced tillage regime, it can save valuable time, reduce costs and increase yields. Fundamentally, it plays a key role in combating the problem of compaction, which is a barrier to root growth and water infiltration and a major factor in poor soil structure leading to run-off and erosion.

High quality consolidation.

PRESSING THE SOIL PROFILE

Following cultivation, consolidation of the surface through to depth is required. If performed in this sequence, it is most efficient and least damaging to structure. Surface rolling cannot consolidate efficiently to depth, as the weight of a surface acting roller required to consolidate loose soil at depth would usually destroy, or in most cases, damage the surface layers. Pressing first, ahead of rolling the surface, therefore provides the best method.

WEATHERING SURFACE

The resulting soil surface, corrugated and firm, can take wet or dry weather, and is suitable for seeding immediately or leaving for later drilling as required due to the weatherproof finish. The added benefit of a press surface rolling effect is seen in the stale seedbed ahead of drilling (picture, right). This assists by increasing the emergence of weeds and volunteers which can be sprayed out before drilling the next crop. Pressing also reduces short term CO₂ emissions, giving an added environmental benefit. A corrugated surface has more area to absorb heat and warm up faster in early spring, which can assist soil temperatures and seed germination.

REDUCING LARGE PORES

Ploughed land is especially assisted by pressing to reduce large open pores to a manageable size, increase bulk strength to allow effective seedbed cultivations, reduce significantly short term CO₂ emissions, conserve moisture, and leave the soil in a weatherproof state. By combining pressing and levelling with pre-cultivation, it is possible to reduce the costs of making seedbeds following the plough.



STRENGTH



- Strength
- Long lifetime
- Reliable design
- Proven performance

STRENGTH AND DURABILITY

3 OR 6 YEARS WARRANTY

Soil structure is not the same on every field, as are working conditions. So you want to adjust your roller by the right choice of rings or even a clod board to suit your local requirements. You want a machine that lasts, that copes with the stress on the material over long time. The Actiroll models have an optimum ratio between reliability and weight.

Proven Reliability with special warranty on rings

The frame design is a result of a long study and experience to optimise the steel over the working width and provides the necessary strength within the structure.

All the most aggressive scenarios (stony conditions, vibrations, headland turns, transport tests, ...) have been considered to make the different frames as strong as possible and thus guaranteeing the proven Kverneland quality.

The exceptional steel quality used for the rings allows us to extend the warranty time to three years and on stone rings to six years.



CONTOURA

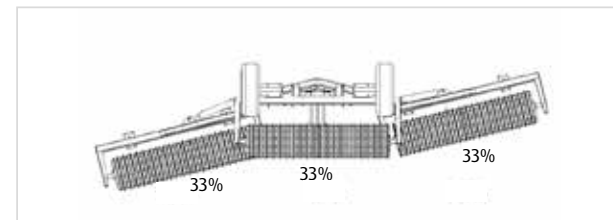
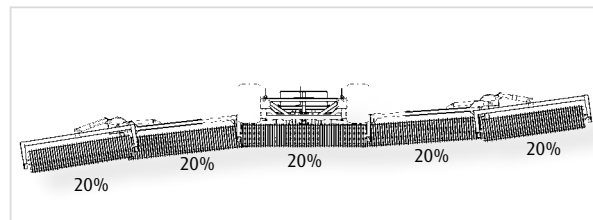
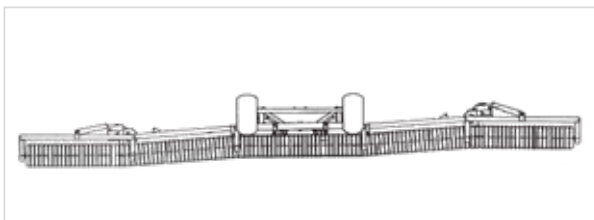
ALWAYS THE SAME WEIGHT OVER THE ENTIRE WORKING WIDTH

Kverneland Actiroll soil consolidation and positive ground following features with the 'Contoura' System thanks to the unique 3D pendulum suspension.

The Contoura system ensures that the Actiroll segment wings always follow the ground contours: the slotted holes at the ends of the hydraulic cylinders secure a constant contact of the wings with the soil. Moreover, the weight of the central frame is transferred to the wings by two strong springs (on Actiroll and Actiroll Classic up to 8.3m) and hydraulic cylinders on other models. Therefore, the load of the complete roller is equally applied over the whole working width, whatever the working width. Each ring gang is able to release if there are obstacles.

Homogeneous weight transfer

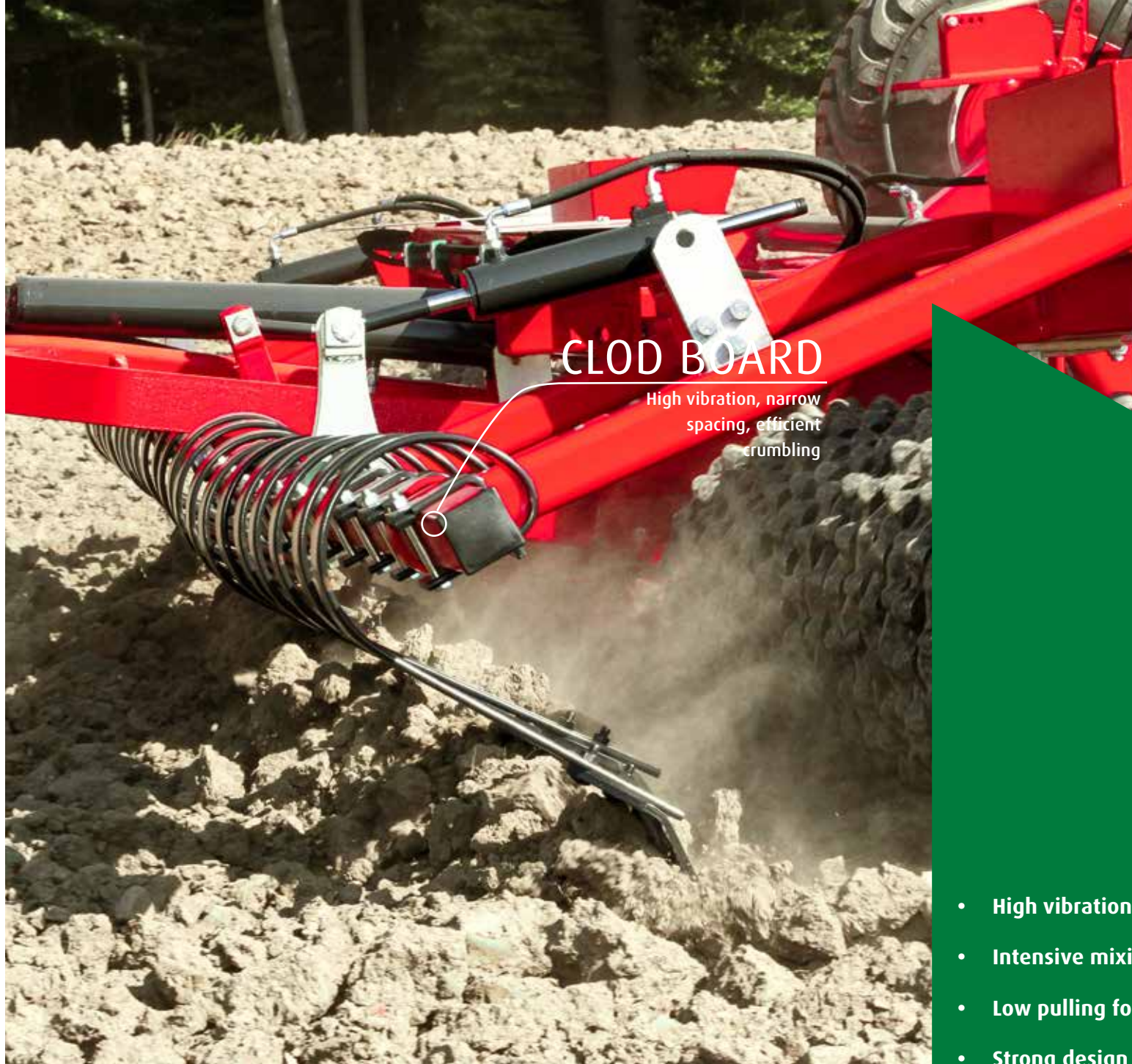
Two springs located on each extension equally transfer the load from the middle to the side wing segments (for Actiroll/Actiroll Classic from 4.50m to 8.30m). From the Actiroll 9.50m, the load is transferred by two hydraulic cylinders and accumulator.



CONTOURA

Load transfer over the entire working width via springs or hydraulic cylinder depending on the working width.





CLOD BOARD

High vibration, narrow spacing, efficient crumbling

- High vibration
- Intensive mixing and crumbling
- Low pulling force
- Strong design

HIGH VIBRATION FOR PERFECT LEVELLING

CLOD BOARD: VERSATILE FOR ALL CONDITIONS

High vibration, narrow spacing, efficient crumbling

The optional Clod Board in front of trailed machines increases the crumbling effect on ploughed land and ensures active levelling due to the high vibration of the cracker tines. The aggressiveness of the Clod Board can be adjusted hydraulically from the cab on the move or by a spindle. For first stubble cultivation or on grassland the Clod Board bar can be easily set in the off position (not available on Actiroll HD and Actiroll Classic).

Perfect levelling and regulation of the soil flow

The Clod Board is equipped with extra strong 80x100mm tines, parallelogram guide and infinitely variable working angle adjustment via spindles. Equipped as standard with three synchronised cylinders for exact depth control and angled wear plates 100x12mm.

The depth of the Clod Board can be infinitely adjusted hydraulically in the field. Therefore, even under the most difficult or strongly changing soil conditions, an optimal working result is achieved. The working angle of the tines is manually preselected via spindles. Due to the parallelogram suspension, the pre-selected angle is always maintained when the working depth is adjusted.





RING OPTIONS FOR LONG LIFETIME

Different ring diameters have different rotation speeds which impact on the soil profile finish. The profile of the rings ensure free soil passage and a perfect surface finish. Result is a weatherproof surface due to even pressure across the entire working width.

Cracking performance.

Unique in the market: Stone rings are reinforced making them ideal for high stone content conditions. When compared to a standard ring the lifetime can be up to six times longer. The stone rings are assembled onto a heat treated shaft (\varnothing 60mm), maintained on each side by strong bearings.

All bearings are maintenance free. **Rubber suspended bearings** are available as an option for all Actiroll models and recommended for stony conditions. The bearing rubber suspension absorbs vibrations and shocks, ensuring a longer life to the rings and the roller unit itself.



CRACKING, FISSURING, LEVELLING, CONSOLIDATING RING TYPES FOR ALL CONDITIONS



500mm

530mm

Cambridge ø500mm

- (Whole range) with stone ring as standard with 12 spokes.

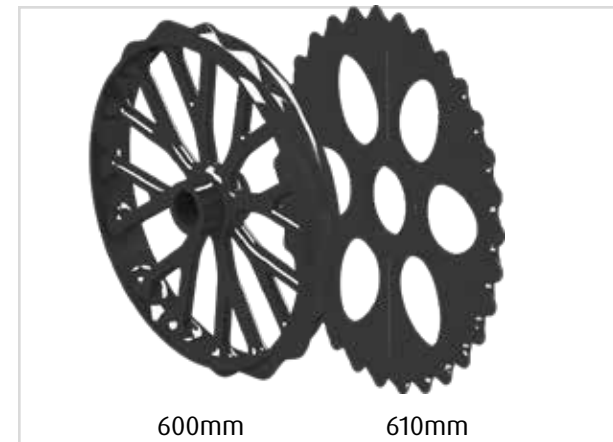


550mm

570mm

Stone Ring Cambridge ø 550mm

- Ideal to increase the weight of the machine.
- The rings have 14 spokes.



600mm

610mm

Stone Ring Cambridge ø 600mm

- The heaviest stone ring available on 630 and 830 Actiroll.
- The rings have 16 spokes.

Cambridge roller rings are suitable for all conditions both before and after seeding. The wide rings support the weight better especially when rolling crops. The outer area of the rings leave small indents in the pre-seeded fields which make it more weatherproof. In combination, it ensures better traction and drive on light sandy soils. Cambridge rings alternating with break rings produce good results especially in dry and cloddy conditions. In combination with the Clod Board the surface aggregates will be fractured and levelled to provide the ideal seedbed environment. Cambridge rings are also suitable for rolling established grassland and following seeding of grass for improved seed to soil contact.



Cracker ø500mm / 550mm

- Smooth clean run due to the movement of each ring.
- Better seed to soil contact due to upward action.
- Disturbs surface layer which prevents capping and consolidates underneath layers for good root development.
- In combination with a Clod Board ideal for seedbed preparation.
- Destroying of weevil on maize stalks as its habitat for hibernation.

Supporting the rolling of grassland, weevil control and seedbed preparation especially the seed germination.



Crosskill ø530mm (whole range) and heavy Crosskill ø600mm (Actiroll HD/HDC)

- The smaller rings are in fixed position. The large rings move up to 5 cm upwards and rotate which ensure a perfect self-cleaning effect.

Excellent seedbed preparation especially on ploughed land which will be prepared for seeding. Clods are crushed. Leaves a loose and crusted weatherproof top soil layer and a firmer just below the surface to avoid nutrients erosion already in the surface.

SAFE ON THE ROAD EASY TO CONVERT

Easy conversion from working to transport width. The Actiroll models retain a transport width of 3.00m whatever the diameter of the rings. The wing sections are mechanically locked and also lock the cylinder of the transport carriage for utmost security. Moreover, the Actiroll models run very smoothly due to their low centre of gravity.

The folding/unfolding sequences are done by single (carriage) and double-acting cylinders (sections).

Brake kits (hand, hydraulic or air) are available for selected models on request. LED Lighting equipment is standard.





 **Kverneland**
Actiroll 2430

ORIGINAL PARTS & SERVICE

LET'S FOCUS ON YOUR BUSINESS

ORIGINAL
PARTS

- 
- ① LONG LASTING, HIGH QUALITY SPARE PARTS
 - ② OVER 100 YEARS OF PARTS KNOWLEDGE
 - ③ SUPPORT FROM A WIDE NETWORK OF DEALERS
 - ④ 24/7 SPARE PARTS SERVICE
 - ⑤ HIGHLY SKILLED DEALER TECHNICIANS

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TECHNICAL DATA

Model	Actiroll						Actiroll Classic	Actiroll HDC	
Type	450	530	630	760	830	950	Classic 630	HDC 1030	HDC 1230
Working width (m)	4.50	5.30	6.30	6.30	8.30	9.50	6.30	10.30	12.30
Transport width (m)	2.50	2.50	2.50	2.50	2.50	3.00	2.50	3.00	3.00
50cm Cambridge weight (kg)	2190	2800	3200	4070	4200	5215	2995	7285	10920
55cm Cambridge weight (kg)	-	3290	3820	4760	4930	6090	3720	8260	11730
60cm Cambridge weight (kg)	-	-	-	-	-	-	-	9275	12750
53cm Crosskill weight (kg)	-	-	4515	3545	3650	4580	2660	-	-
60cm Crosskill weight (kg)	-	-	2685	-	-	-	-	7900	11300
50cm Cracker (kg)	-	-	3215	4160	4310	5340	3215	7550	11070
55cm Cracker (kg)	-	-	3840	4940	5095	6410	-	8480	12000
Folding sections	3	3	3	3	3	3	3	5	5
Shaft section	3						3	5	
Clod board	○	○	○	○	○	○	-	○	○
Weight distribution system "Contoura"	Mechanically by spring					Hydraulic	Mechanically by spring	Hydraulic cylinder and accumulators	
Hydraulic services requested	1 DA + 1 SA					2 DA	1 DA + 1 SA	3 DA	3 DA
Wheels	10.0/75 x 15.3			11.5/80 x 15.5	11.5/80 x 15.5 or 400/ 60x15.5 with 60cm Cambridge	400/60 x 15.5	10.0/75 x 15.3	520/50 x 17	710/40 x 22.5
Linkage*	● Pulling eye ∅ 30mm ○ Pulling eye ∅ 40mm	● Pulling eye ∅ 30mm ○ Pulling eye ∅ 40mm ○ Crossshaft Cat. 3-N				● Pulling eye ∅40mm ○ Crossshaft Cat. 3	● Pulling eye ∅ 30mm ○ Pulling eye ∅ 40mm	● Pulling eye ∅ 50mm ○ Crossshaft Cat. 3	
Min HP	60	65	70	90	110	130	70	160	190
Max HP	120	130	150	180	200	200	150	300	375

* Linkages, please see local regulations. Pulling eye ∅ 40mm extends the drawbar by 160mm.

● Standard equipment ○ Option - Not available

Model	Actiroll HD							
Type	HD 1030	HD 1230	HD 1430	HD 1530	HD 1630	HD 1830	HD 2130	HD 2430
Working width (m)	10.3	12.3	14.3	15.3	16.3	18.3	21.3	24.3
Transport width (m)	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
50cm Cambridge weight (kg)	6280	6955	8950	9505	9980	11170	21090	22440
55cm Cambridge weight (kg)	7270	8120	10250	10790	11380	12745	23340	24690
60cm Cambridge weight (kg)	8250	9300	11240	11850	12975	-	-	-
53cm Crosskill weight (kg)	5810	6165	8900	8980	9430	10550	19275	20625
60cm Crosskill weight (kg)	6900	7840	9410	10010	10580	12080	22700	23970
50cm Cracker (kg)	6790	6855	9080	9720	10130	11350	22465	23735
55cm Cracker (kg)	7180	7780	10230	10750	11310	12650	-	-
Folding sections	5	5	5	5	5	5	5	9
Shaft section	5							
Clod board (option)	-	-	-	-	-	-	-	-
Weight distribution system "Contoura"	Hydraulic cylinder and accumulators							
Hydraulic services requested	1 DA + 1 SA	2 DA	3 DA	3 DA	3 DA	3 DA	3 DA	3 DA
Wheels	400/60 x 15.5	480/45 - 17 or 520/50 x17 with 60 cm Cambridge	600/50 x 22.5	600/50 x 22.5	600/50 x 22.5	600/50 x 22.5	600/50 x 22.5	600/50 x 22.5
Linkage	<ul style="list-style-type: none"> ● Pulling eye Ø50 mm ○ Crossshaft Cat. 3 		<ul style="list-style-type: none"> ● Pulling eye Ø50 mm ○ Ball coupling K80 ○ Crossshaft Cat. 3 					
Min HP	160	190	200	210	230	270	300	300
Max HP	270	300	330	350	375	400	500	550

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