LELY HIBISCUS

Cam rakes

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innovators in agriculture

Cattle demand clean forage

Easy crop intake thanks to evenly shaped swaths
Uneven or irregular swaths often cause blockages or loss of capacity when forage harvesting. The airy and regular swaths that are made by Hibiscus rakes ensure a gain in output in the harvesting process.

Ro-tines for an excellent raking operation
Rake tines should be flexible to ensure good ground contour following, rigid enough to ensure an exact working height, while also providing the capability of transporting large volumes of grass. The Hibiscus Ro-tines meet these requirements.

Good ground contour following prevents contamination
The carriages of the rotors have been designed to ensure that the wheels are as close as possible to the tines and that they 'gauge' the ground with maximum efficiency. In combination with the long and flexible tines, crop contamination is thus avoided.

Rotor stability is most decisive for output
An unstable rotor, irrespective of the number of tine arms, always reduces a machine's output. Therefore, Hibiscus rakes always feature tandem axles or pendular axles so that unevenness does not reduce the driving speed.

Perfect swaths in all kinds of crops
Thanks to the adjustable cam track, it is possible to pinpoint the moment when the tine arms release the crop. This makes it possible to achieve clean raking plus the ideal swath form both in hay and wet silage.

Proper raking shows in your wallet immediately

There is more to raking than making properly shaped swaths in a very short space of time; it is all about gathering the precious material lying in your fields. You have made a substantial investment, so each and every little blade of the crop counts. In addition, your animals require clean forage; it shows in their fodder intake, milk production and health.

The Ro-tines of the Hibiscus rake perfectly meet all of the requirements that apply to efficient raking. The tine position and large coils ensure optimum flexibility and eliminate contamination, while the unique tine shape plus the choice of material contribute to a consistent working height. Fine-tuning between forward speed, cam track and rotor speed ensures airy and perfectly shaped swaths.

The positive effect of clean forage has been highlighted with the success of the milking robot. This, combined with a fresh approach to raking, has led to the development of the Ro-tine. After all, the swath is only part of the eventual harvesting result.

What you feed is what you get!

Harvest results

A million cows are milked daily by Lely robotic milking systems but it's not only the Astronaut that makes robotic milking such a success. It's the knowledge and experience of our employees that help farmers to achieve the best results with their cows.

That's why we know – more than anybody else – that good quality roughage is the basis of your success. It ensures good animal health, maximum fodder intake and avoids additional cost for concentrates and additives…

Your forage harvesting is the start for good and efficient milk and meat production.

Efficient raking has an effect on your wallet

Proper and efficient raking not only means that the mown crop ends up in the swath clean and tidy – it is also a preparation for the next harvesting process. So, raking has a great effect on the speed at which the harvesting machines can pick up the swath, and that is something you notice in your wallet at the end of the day! All in all – a double effect!

Flexible tines – low soil contents

Adjustment of the working height will often depend on the soil and how even the field surface is. In practice, work should be higher on undulating fields with a loose surface than on level fields with firmer conditions.

Lely Ro-tines for clean forage

Short and rigid tines that are positioned almost directly underneath the tine arm do a good job on level fields, but have trouble adjusting to rough terrain. Result: damage to the ground and soil in the pit. The Ro-tines of Hibiscus rakes, on the other hand, are long, very flexible and positioned behind the tine arm, allowing the tines maximum flexibility. These tine properties always guarantee optimum results without contamination of the forage, even in difficult conditions.

Good forage in the swath, good silage

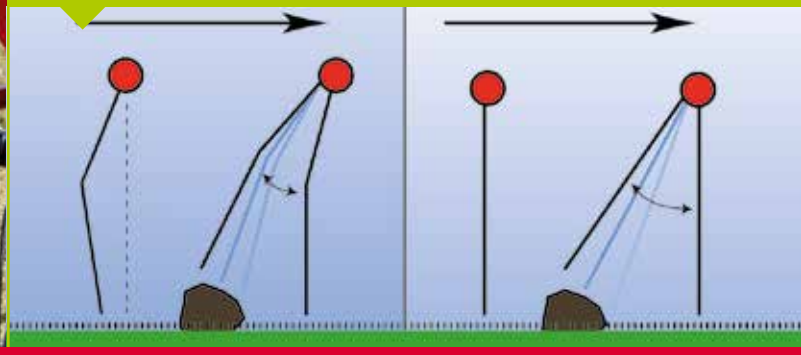
Raking – the last operation before baling, picking up or harvesting – is crucial to the results of the baler, pick-up loader wagon or harvester. To make sure that the machine can pick up the crop precisely (i.e. without loss), the swath width should correspond to the pick-up width of the baler, pick-up loader wagon or harvester. In case of a baler or loader wagon, the space between the tractor wheels also plays a part.

Easy inflow due to regular swaths

A regular and airy swath ensures proper filling of the cutting rotor or cutting chamber, and hence a good cutting action or forage quality. Badly shaped swaths or irregularities in the swath often cause blockages or loss of output. If the tractor driver cannot rely on the swath, he will never achieve the optimum output of his machine.

The working height is adjusted by means of a wind handle. Essential for clean raking operations and clean fodder.

Straight tines ‘drag’ the crop over the ground. Result: contamination and lower output.



The Ro-tine harvests results, not dirt!

Dirt is the greatest taste spoiler

Contamination of forage is one of the major spoilers and inhibitors of taste when it comes to forage intake by cows. This aspect requires particular care and attention throughout the raking process and therefore the trailing tine position is a very deliberate choice. Flexing is much easier for the machine when the tine tip is positioned slightly behind the tine arm.

Properly distributed for clean raking

Even before the rake enters the field a great deal of energy, time and money has already been invested. So why compromise that investment with a poor raking operation? It is paramount that all of the grass ends up in the swath with minimal contamination. A proper distribution of the rake tines contributes greatly to a clean pick-up of the crop. The tines of the Hibiscus rakes are evenly spaced with a distance of 70 mm between the tines. With the tines having an offset position this allows space for a greater number of coils on the tine arm. The special tine fixation ensures a precise tine angle as well as tension-free mounting, which enhances overall durability.

Clean forage is of paramount importance for healthy and productive cattle. Depositing clean swaths comes first and foremost during the design stage of each Hibiscus rake. Lely's engineers are always focused on optimising crop movement, i.e. constructing the rake in such a way that there is less contact between the grass and ground to reduce any contamination of the crop to the absolute minimum.

Clean forage thanks to a consistent working height

The Ro-tine picks up the grass easily due to its curved shape, thereby reducing the force required resulting in less tine flex. Reduced tine flex always gives a more consistent working height, thereby reducing contamination of the forage. The combination of the material used to manufacture the tine and the number of coils utilised in this construction ensures sufficient rigidity for maintaining a consistent working height while retaining the gentleness required to achieve optimum forage quality.

Minimising contamination

The Ro-tine is able to operate in a trailing position due to its unique 90° angled tip. This means that the tine is able to flex with 50% less force than that required by a straight tine mounted directly under the rotor arm. The chance of soil or stones being picked up is virtually nil. Contamination is further mitigated by the fact that due to the angle of the tine the crop is lifted from the ground rather than dragged across it, as is the case with a traditional straight tine.

It is all about the rotor

Obviously, the heart of any rake is the rotor, and the rotors are therefore decisive in terms of performance and machine life. Lely has merged the main functions of the rake's rotor – turning, steering and supporting – into three types of rotor, each with its own specific benefits.

Modular build Master rotor

Except for the Hibiscus 1015 CD Profi all Hibiscus rakes are equipped with the modular build Master rotor. This rotor is a proven concept with an adjustable and closed cam track, which is greased for life with a special lubricant that sticks to the cam track and its rollers.

Fixed tine arms from one piece

For certain models where the tine arms can stay on for transport, the rotors will be equipped with tine arms made of one piece of thick-walled steel tube which is directly welded onto the support of the steering roller. This solid construction eliminates connections and any play in the tine arm. The complete tine arm, including the housing and bearings, is easily placed by means of three bolts in the housing of the rotor.

Rigid connection for long lifespan

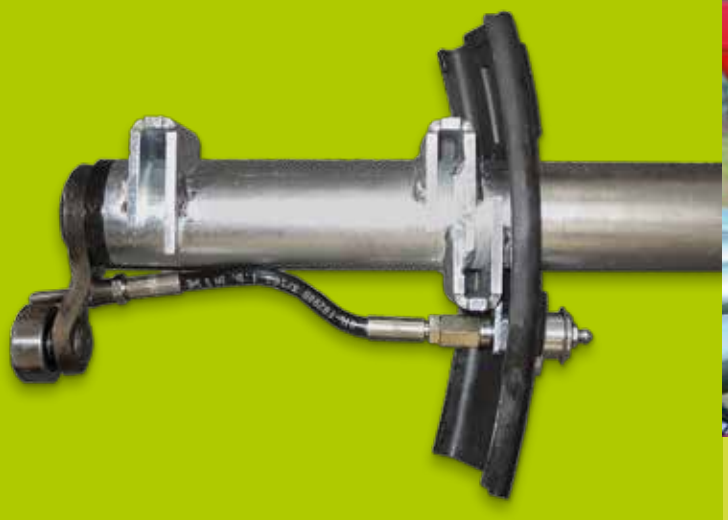
In case the tine arms need to be removed for transport, the rotors are equipped with robust and very long tine-arm shafts made of chromium steel. The thick-walled tube of the tine arm slides easily over the shaft, while two indentions fit into the machined grooves of the shaft ensuring a rigid connection between both parts. The perfect grip and the long support of the tine arm by the housing and the shaft ensure exact raking and a long lifespan.

Adjustable cam track

Due to the adjustable cam track, the position when the rake tines let go of the crop can be adjusted. This makes it possible to achieve clean raking plus the ideal swath shape both in hay and moist silage. Simple working height adjustment is by means of a chromium steel main shaft with a coarse support thread, which can still be adjusted after many years of operation.

Profi – our largest rotor

With its 4.70 m diameter, the fifteen-arm Profi is the largest rake rotor we build. The Hibiscus 1015 CD Profi model is fitted with two of these rotors. Please refer to page 35 for more information.



Greasing point for cam track.

Even though they have long-life greasing, certain rotors feature a greasing point for extra maintenance because of heavy conditions. A tube brings the lubricant directly to the cam track. Only special grease can be used for this purpose.

Output due to good ground contour following

The increasing diameters of rake rotors impose ever greater demands upon ground contour following. The tines need to be guided across a large surface, while in addition a larger rotor has to be able to adjust itself more effectively. After all, there may be substantial differences in the surface of the field. Two crucial factors are decisive for a good result: correct working height and the stability of the rotor.

Only stable rotors can ensure high output

The carriages under the rotors are designed so that that the wheels are as near as possible to the tines and follow the ground contours as closely as possible. The stability of the rotor is the most important factor for the machine's output. No matter how many tine arms a rotor may have, an unstable rotor will never achieve the required output. For that reason, most Hibiscus rakes are fitted with tandem or pendulum-type axles.

Castor wheels avoid damage to the ground

Many support wheels under the rotor do not align with the centre of the rake. All of these wheels have a swivel point to ensure that the ground is treated gently when making a sharp turn. The bigger the difference is with the centre line, the more castor action is needed, which you can see in the different designs of rotor carriages.

Excellent ground contour following for clean raking

Allowing the rotor to move in all directions ensures that the tines have more than enough reach for proper raking on the most uneven ground. The cross-shaped pivot point positioned on top of each rotor allows 3D movement of the rotor, while the forward placing of the pivot point ensures stability by making it a trailed suspension.

Stability ensures output

Tandem and swivel action between the support wheels is very important for ensuring a stable drive of the larger rotors. The levelling effect of the extra pivot points reduces the impact of uneven ground and prevents any unnecessary movement of the rotor, which could reduce output or lead to ground damage and soil contamination of the crop.

The carriages under the rotors are designed so that the wheels are as near as possible to the tines and follow the ground contours as closely as possible. In combination with the long, flexible tines, this prevents contamination of the crop.

Castor-type land wheels underneath the rotors of SD rakes.

The cross-shaped pivot point above the rotor provides 3D movement.

Lely Hibiscus – built to last

Hibiscus central delivery rakes are by far the strongest and heaviest machines in today's market place. Through these outstanding machines, Lely has set a new standard for rakes that combine an excellent operation with unrivalled durability. This solid construction not only assures you of a high trade-in value, it also provides confidence during the most critical stage of harvesting, with adverse weather conditions and the contractor 'hot on your trail'…

Solid fixation of double tines
The slightly curved tines of Hibiscus rakes are outstandingly strong as well as flexible. Due to the unique design and the special material the risk of breakage is minimal. Because of the special construction, the Hibiscus tine is not affected by obstacles as much as the straight tines of other makes. The special fixation keeps the double tines in place, 'solid as a rock'. This new fixation eliminates the problem of tines being clamped so tightly that any strain will cause fatigue and hence reduced tine operation. For all Hibiscus models an extra safety facility is available to avoid damage to a following harvesting machine.

Very robust pivot points and frame construction
A construction in the shape of a triangle connects the rotor to the frame, ensuring an outstandingly stable construction. In addition to enhanced lifespan, the major benefit is a much more stable rotor throughout raking operations. A steady rotor in turn means that the forward speed – and hence output – can be substantially increased.

Our experience can’t be bought – that’s why you get it for free!

You work with our machines in the great outdoors, an environment that is greatly influenced by the soil, weather and other external factors. New challenges are presented to machines every day. If you run into a problem it is essential that any breakdowns resulting from damaged parts are limited to an absolute minimum. It is for this reason that our dealers are geared up to respond rapidly, so that your activities can be resumed as soon as possible. They hold stocks of the most essential parts and have the expertise needed to get the machine in question performing optimally again. Furthermore, they can rely on the back-up of the Lely organisation seven days a week. So opting for Lely entails more than just choosing a machine. We ensure that your forage harvesting goes smoothly.

Lely Hibiscus

S/P

CD

SD

CD Profi

Lely Hibiscus S/P

The new series of single rakes consists of three mounted models and a large trailed model. The Hibiscus 485 – with a rotor diameter of 3.80 m – is the largest single-rotor rake on the market! The rakes are of a very rugged construction, with the Head-Lock system as an example of innovative thinking.

TECHNICAL SPECIFICATIONS

HIBISCUS	425 S	455 S	485 S	485 P
Working width (m)	3.20 – 4.25	3.50 – 4.55	3.80 – 4.75	3.80 – 4.75
Number of arms	11	11	13	13
Swath width (m)	1.10 – 1.40	1.10 – 1.40	1.10 – 1.40	1.10 – 1.40
Weight (kg)	705	765	850	875
Power required (kW/Hp)	48/65	51/70	59/80	37/50

Lely Hibiscus CD

Farmers and contractors can now opt for high-grade and reliable machines, ensuring highly effective raking as well as perfect swaths. The extensive range of central delivery rakes covers working widths ranging from 6.85 m to 9.00 m. These rakes have a comprehensive specification and stand out due to their compact and rugged construction.

TECHNICAL SPECIFICATIONS

HIBISCUS	715 CD	745 CD Vario	815 CD Vario	915 CD Vario
Working width (m)	6.75 – 6.90 – 7.05	6.85 – 7.35	7.45 – 7.95	8.00 – 9.00
Number of arms/rotors	10	11	11	13
Swath width (m)	1.20 – 1.50	1.25 – 1.75	1.25 – 1.80	1.25 – 2.25
Weight (kg)	1,760	1,800	2,080	2,505
Power required (kW/Hp)	44/60	44/60	48/65	51/70

Lely Hibiscus SD

Two models with double rotors and side delivery with the same working width. The 765 SD Vario model, however, has the possibility of varying the working width and producing two swaths in one pass.

TECHNICAL SPECIFICATIONS

HIBISCUS	655 SD Classic	765 SD	765 SD Vario
Working width 1 sw (m)	5.80 – 6.50	6.70 – 7.60	5.00 – 7.60
Swath width 1 sw (m)	1.20 – 1.50	1.20 – 1.80	1.20 – 1.80
Working width 2 sw (m)	–	–	8.30
Swath width 2 sw (m)	–	–	1.20 – 1.80
Number of arms/rotors	11/2	13/2	13/2
Weight (kg)	2,225	2,855	3,005
Power required (kW/Hp)	48/65	55/75	55/75

Lely Hibiscus CD Profi

The two highest specified and widest rakes with central delivery have different set-ups. The 1015 CD Profi has extremely large rotors, while the 1515 CD Profi model has four rotors. These rakes are ideally suited for contractors and large farms where large swaths are required.

TECHNICAL SPECIFICATIONS

HIBISCUS	1015 CD Profi (+)	1515 CD Profi
Working width (m)	9.20 – 10.20	11.00 – 14.80
Number of arms/rotors	15/2	11/2 + 13/2
Swath width (m)	1.50 – 2.50	1.20 – 4.00
Weight (kg)	4,755	5,820
Power required (kW/Hp)	74/100	90/120

Lely Hibiscus S

In spite of the ever-growing availability of twin-rotor rakes, single-rotor cam rakes still occupy a prominent place within the range of Hibiscus rakes. Therefore, two new models have now been added to Lely's range of single-rotor cam rakes: Hibiscus 425 S and Hibiscus 455 S. For smaller and medium-sized dairy farms, the single-rotor rake is an efficient as well as affordable investment for achieving ideal swaths. Due to the unrivalled ease of operation and flexibility of operation – not confined by a fixed swath width – single-rotor rakes are the ideal choice for many dairy farmers.

A suitable rake for every farmer

The four models of Hibiscus single-rotor rakes are available in three different working widths. The Hibiscus 425 S and 455 S models are fitted with eleven tine arms and their respective working widths are 4.25 m and 4.55 m. The Hibiscus 485 model has a working width of 4.85 m and comes in two versions. As standard this Hibiscus model is supplied as a machine for three-point linkage. The Hibiscus model 485 P, however, comes as a trailed rake and features its own hydraulic lift system. All of these single-rotor Hibiscus rakes are fitted with the modular Master rotor including a low-maintenance cam track.

Reliable and simple

Hibiscus single-rotor rakes have an outstandingly rugged construction. The simplicity of construction is reflected in an attractive purchase price as well as a long machine life. To be able to lift the large rotors, the main frame is made out of one piece, ensuring its enormous strength.

Into the transport position – a quick job

The protection guards can be folded out very easily, and they are unlocked in less than no time. The bracket onto which the heavy swath curtain is fitted has an assist spring to eliminate back-breaking lifting when folding up the guards. For transport the tine arms can be easily removed and stored alongside the frame.

Abundant clearance in the headland position

The simple construction of the Hibiscus single-rotor rakes conceals their clever engineering. Integrated into the newly developed headstock is the Head-Lock locking system. This system has been designed specifically for Hibiscus single-rotor rakes and it ensures trouble-free horizontal lifting of the rake. The top link is connected to the pivoting arm that locks the machine before lifting. Due to the Head-Lock system the rake does not hang down backwards and the rake is immediately fixed in the central position. The freedom that the rake has during its operation can be used to the maximum for making sharp turns. Due to the maximum angle of 25° of the headstock and frame, the machine has a particularly short turning circle.

Rugged Master rotors

The heart of all of these machines is the Master rotor. The 480 mm wide, chrome steel tine-arm shafts with bearings are – just like those of all other Hibiscus rakes – manufactured from one piece. The absence of unnecessary welding or components increases the strength of the arm and thus contributes to the durability of the rake. The tine-arm shafts have an internal profile, to which the profile of the tine arms – with the four double Ro-tines – connects perfectly.

The clever Head-Lock system fixes the rake so that sufficient ground clearance is immediately created.

For uneven fields, all mounted rakes can be fitted with an extra sensor wheel for the rotor. A double sensor wheel is available as an option for the 485 P model.

Quiet machine running due to tandem axles

In order to support these robust rotors adequately, the single rakes are fitted as standard with tandem shafts. An important benefit of the tandem shaft is the quiet running of the machine, due to which the output of the rotor can be fully utilised.

Many possibilities for working height adjustment

The working height can be infinitely adjusted with the aid of an easily accessible wind handle. Furthermore, there is also the option of an extra height adjustment system by means of the bolt/hole adjustment on the undercarriage.

The world champion

Due to its wide rotor diameter of 3.80 m, the Hibiscus 485 S can rightly be called the biggest single rake in the world. For effective support of the large Master rotor, with thirteen tine arms, the model 485 S is fitted with extra-large 18.5” wheels.

Lely Hibiscus 485 P – the convenience of a trailed machine

The mounted version of the Hibiscus model 485 requires considerable lifting power and a relatively large tractor. Because this does not correspond to the power needed by the rake, a trailed version of the largest single rake has been developed. This rake is fitted with a special six-wheel undercarriage that is partly raised during transport. A short shaft connects the rake to the tractor, while a wide-angle PTO is used for the drive.

Quickly into the headland position

The machine is lifted horizontally with the aid of two connected rams on the carriage and one ram on the shaft. The order has been selected so that the front part of the rake is released from the ground first, followed by the rear part. Obviously, when lowering the machine, this order is reversed.

Working height

The machine offers ample facilities for precise adjustment. The ram on the shaft also includes an adjustable stop to make sure that the rake is adjusted exactly level, or perhaps slightly tilted to the front.

Technical specifications

HIBISCUS	425 S	455 S	485 S	485 P
Working width (m)	3.20 – 4.25	3.50 – 4.55	3.80 – 4.75	
Number of arms/rotor	11		13	
Swath width* (m)	1.10 – 1.40			
Weight (kg)	705	765	850	875
Power required (kW/Hp)	48/65	51/70	59/80	37/50
Transport width (m)	1.95 – 3.55	2.20 – 3.90	2.45 – 4.10	2.35 – 4.10
Transport length (m)	3.20 – 3.95	3.35 – 4.25	3.60 – 4.55	4.60 – 5.55
Transport height (m)	2.00	2.30	2.10	2.65
Number of rotors	1			
Number of tines/tine arm	four double tines			
Rotor diameter (m)	3.20	3.50	3.80	
Cam track	Adjustable			
Axle under rotor	Tandem			
Working height adjustment	Tandem position			
Working height adjustment	Infinitely adjustable wind handle			11 positions
Wheels under rotor	4 x 16/6.90-8 (6 ply)		4 x 18.50/8.50-8 (6 ply)	6 x 16/6.90-8 (6 ply)
Linkage category	II			Drawbar
Hydraulic connections				1 x DA
PTO speed (rpm)	540			
Forward speed (km/h)	max. 12.50			
Transport speed (km/h)	max. 30			
Overload protection	S	S	S	S
Tine retainers	O	O	O	O
Lighting	X	O	O	S
Front gauge wheel(s)	O	O	O	O
Wide-angle PTO shaft	X	X	X	S

S = Standard / O = Optional / X = Not available on this machine / * Depending on crop conditions

Hibiscus 485 P in transport
Once the guards have been folded up and the tine arms removed, the machine is exceptionally compact and can therefore be easily transported. The special torsion shaft, integrated into the carriage, absorbs shocks to ensure steady road performance as well as long machine life. A lighting kit is supplied with the Hibiscus 485 P model as standard (optional for the 455 S and 485 S models).

Lely Hibiscus CD

After a decade of developing cam rakes, Lely presents a fine example of Lely innovation by launching a complete new range of Hibiscus central delivery double-rotor rakes. Maintaining reliability and enhancing functionality and ease of control was the major engineering goal for the development. The result: three compact and rugged rakes that have everything it takes to ensure the cleanest possible delivery of optimal swaths in all circumstances.

Four models, many working widths

The range of Hibiscus double-rotor central delivery rakes consists of four models and many working widths. The Hibiscus 715 CD has three working widths: 6.75 m, 6.90 m and 7.05 m. The swath width varies between 1.20 m and 1.50 m. The maximum working width of the Hibiscus 745 model is 7.35 m with a swath width that varies from 1.25 m to 1.75 m. The 815 model has a working width of 7.45 m and 7.95 m and a swath width of 1.25 m and 1.80 m. The 915 model has a maximum working width of 9.00 m and can form swaths of from 1.25 m to 2.25 m.

Vario offers many possibilities

As standard, all Vario rakes feature a hydraulic working-width adjustment. During the raking operation, the tractor driver has the possibility of adjusting the working width, and hence the swath width, by means of a double-acting spool valve. The spool valve for pushing the arms in and out is also used to lower them for transport and secure them at the same time.

Stable driving – maximum capacity

A unique feature of all CD models is the cardanic suspension with the pivot points located slightly in front of the centre of the rotor, which ensures stability. The smart front wheel assembly – close to the tines – ensures clean raking while the wheel at the back of the carriage carries the weight of the rotor. The 815 and 915 models feature extra tandem wheels at the back for increased stability as well as the quiet running of the bigger rotors.

Perfect ground contour following

The suspension of the rotors is universally jointed to the chassis whereby the cross-shaped pivot point is configured in front of the rotors. Consequently, the pivot point can be positioned as low as possible so that the rotors have a smoother action as well as following ground contours more effectively.

Easy variability
The driver can vary the working width during driving from the tractor seat.

Cardanic suspension with a cross-shaped pivot point.

Stability means capacity
The smart front wheels are close to the tines for clean raking while the wheels at the back carry the load. The tandem wheel assembly is standard on the 815 and 915 CD Vario.

The rear wheels will touch the ground first to make sure that the tines will not damage the turf.

Plenty of clearance under the rotors in the headland position.

Easy height facility allows good depth adjustment.

The rotors lock themselves for safe transport.

Headland position – as it should be

During lifting on headlands, the rotors move quickly into a position that is high enough to clear previously made swaths. The sward remains intact; since the suspension point of the rotors is moved further forward, the front of the rotor is lifted first, and upon lowering, the rear wheels touch the ground first.

Vario models also offer an optimum ease of control

Several operations – folding the machine, adjusting the working width and the exceptionally ample and fast headland manoeuvres – are set up in such a way that they can all be controlled through one double-acting spool valve. There are no more ropes for folding out the rake as the machine locks and unlocks itself.

Convenient adjustments for proper raking

Alongside the variable working width, these rakes also feature adjustments for the working depth and the cam track timing. The height adjustment can be reached from the side and has a stable and precise spindle. A height indicator on the rotor is helpful for setting up an even height for both rotors. The rotor timing can be changed to optimise swath shape due to big changes in crop circumstances.

Exact steering in the field and on the road

The robust steering system connects the headstock to the rear wheels and is designed to have the centre of the turning circle in the middle of the rotors. This offers the best possibilities for clean raking in corners and leaving nice curved swaths for the balers, loader wagons or harvesters without any damage to the sward because of minimum friction with the rotor wheels. The same system ensures convenient road transport.

Lely Hibiscus 715 CD

- Working widths of 6.75 m, 6.90 m and 7.05 m.
- Swath widths of 1.20 m to 1.50 m.
- Rotor diameter of 3.20 m.
- Ten tine arms with four double Ro-tines each.
- Transport width of only 2.50 m.
- Extremely compact on the road.

Lely Hibiscus 745 CD Vario

- Working width of between 6.85 m and 7.35 m.
- Swath width of 1.25 m to 1.75 m.
- Rotor diameter of 3.20 m.
- Eleven tine arms with four double Ro-tines each.
- Transport width of only 2.50 m.
- Extremely compact on the road.

Lely Hibiscus 815 CD Vario

- Working width of between 7.45 m and 7.95 m.
- Swath width of 1.25 m to 1.80 m.
- Rotor diameter of 3.50 m.
- Eleven tine arms with four double Ro-tines each.
- Wider frame and a six-wheel carriage under each rotor.
- Huge capacity due to maximum stability.
- Transport height of 3.90 m.

Lely Hibiscus 915 CD Vario

- Working width of 8.00 m and 9.00 m.
- Swath width of between 1.20 m to 2.20 m.
- Rotor diameter of 3.80 m.
- Thirteen tine arms with four double Ro-tines per arm.
- Six-wheel rotor carriage with large 18.5/8.5-8 wheels.
- Transport height of 3.65 m with the tine arms taken off.
- Time-saving tine arm storage above the rotor.
- Easily foldable side guards.
- No headland damage due to large 15.0/55-17 wheels.

1. Hydraulic variable working width while raking.
2. Very robust pivot points and frame construction.
3. The carefully engineered steering system ensures stable driving behaviour and ‘true to track’ machine following.
4. The rotors lock themselves in the transport position.
5. The new working height facility allows very easy adjustments.
6. Maximum stability thanks to the wide carriage with tandem wheels and newly designed front wheels.
7. Cross-shaped pivot points for 3D contour following.
8. The two front wheels are close to the tines and provide a pendular and pivoting action.
9. Ease of operation due to the innovative hydraulic system.
10. Due to the single parking jack, the rake can be coupled quickly.

Technical specifications

HIBISCUS	715 CD	745 CD Vario	815 CD Vario	915 CD Vario
Working width (m)	6.75 – 6.90 – 7.05	6.85 – 7.35	7.45 – 7.95	8.00 – 9.00
Number of tine arms/rotor	10	11	11	13
Swath width* (m)	1.20 – 1.50	1.25 – 1.75	1.25 – 1.80	1.25 – 2.25
Weight (approximate) (kg)	1,760	1,865	2,080	2,545
Power required (kW/Hp)	44/60	44/60	48/65	51/70
Transport width (m)	2.50	2.50	2.80	2.96
Transport length (m)	5.30	5.23	5.50	5.87
Transport height (m)	3.90	3.80	3.90	3.65/4.30
Number of rotors	2			
Number of tines/tine arm	four double tines			
Rotor diameter (m)	3.20	3.20	3.50	3.80
Cam track	Adjustable			
Axle under rotor	Swivel		Swivel/tandem	
Working height adjustment (basic)	Wheel position		Wheel and tandem axle position	
Working height adjustment (fine)	Infinite by means of spindle			
Linkage category	II			
Hydraulic requirements	1 x DA with floating position	1 x DA + 1 x SA with floating position	1 x DA + 1 or 2 x SA with floating position	
Rotor tyres	16/6.5-8 (6 ply)		2 x 6 x 16/6.5-8 (6 ply)	18.5/8.5-8 (6 ply)
Transport tyres	10/75-15.3 (10 ply)			15/55-17 (10 ply)
PTO speed (rpm)	400/450			
Maximum forward speed (km/h)	12.50			
Maximum transport speed (km/h)	40			
Tine retainers	O	O	O	O
Overload protection	S	S	S	S
Lighting	S	S	S	S
Portal headstock	S	S	S	S
Wheel steering	S	S	S	S
Wide tyres 15/55-17 10 ply	X	X	O	O
Individual rotor lift	X	O	S	S

S = Standard / O = Optional / X = Not available on this machine / * Depending on crop conditions

Easy road transport
Due to the compact construction of these models road transport is made easy. The width of the Hibiscus 745 CD Vario is no more than 2.50 m and this – combined with the steered rear wheels – provides a major benefit when driving on narrow roads and when negotiating narrow passageways. On the 915 CD model, the tine arms can be removed to achieve a transport/storage height of 3.65 m; transport height is 4.30 m with the tine arms fitted. The machine locks and unlocks itself.

Lely Hibiscus SD

The weather is always highly unpredictable and we at Lely have no say in that. This uncertain factor is also decisive for the growth of crops and hence on the number of cuts that can be harvested in the course of one season. With the Hibiscus SD side delivery rakes Lely offers optimum flexibility to dairy farmers and contractors alike. These universal double-rotor side delivery rakes lay down the ideal swath for the following operation in all conditions.

Wide in the field, compact during transport
When in the transport position both rotors are folded very close to the main frame so that the transport width is only 2.45 m. This makes getting through narrow gateways or frequent road transport much easier. The transport height of the machine (with the tine arms fitted) is less than 4 m. With the Hibiscus 765 SD Vario model the outer tine arms can be removed and stored in the handy rack above the rotor. Height is thus reduced to 3.10 m; a truly ideal benefit!

Easy to operate – essential for a side delivery rake

To be able to use the output of side delivery rakes to their full potential, the operator will have to get used to the side delivery principle. With the Hibiscus 765 SD side delivery rakes, this learning process is exceptionally simple, because all functions can be easily controlled from the tractor cab. If an angled piece of field needs to be raked, both rotors can easily be lifted into the headland position, after which the operator simply reverses.

Lifting the rotors one by one on headlands

Hydraulic lifting of the Hibiscus rotors into the headland position is designed in such a way that the front rotor is lifted first, followed by the rear rotor. This enables the operator to drive into headlands, without having to wait or slow down.

Full adaptation of the rotors

The rotors of the Hibiscus 765 SD (Vario) are suspended by means of a 3D system, and ground contour following by the rotors is optimised with the aid of the four wheel assembly. With the 765 SD the four wide tyres can pivot to avoid scuffing the turf. The two front wheels are as close as possible to the front tine tips. Consequently, the rotors have a stable run and the tines touch the surface – contamination is reduced to the bare minimum. The standard Ro-tines assure the unrivalled output of this rake and ensure that a clean and airy swath is laid down.

Turning on headlands – ample clearance

In addition to ensuring a long life, the suspension of the rotors in the A-frame – a cleverly engineered Lely concept – offers additional benefits. The pivot points of the rotors are underneath the shaft, so that the rotors are lifted perpendicularly on headlands. This ensures ample clearance and even the biggest swaths are left untouched when the machine passes over.





765 SD Master rotor

For the 765 SD model Hibiscus rakes, the maintenance-free modular Master rotor is also used. This rotor has thirteen tine arms – each fitted with four double Ro-tines – and a diameter of 3.65 m. The cam track is adjustable to ensure correct pick-up of the crop as well as optimum swaths. Working height can be easily adjusted for both rotors by means of an infinitely adjustable wind handle.

Lely Hibiscus 655 SD Classic and 765 SD

The basic models adequately perform all of the functions that are needed for a side delivery rake. With the Hibiscus SD rakes, Lely offers two big-output rakes with an attractive price-to-quality ratio, a rugged build, well-known Lely technology, optimum ease of operation and minimal maintenance. These machines have a working width of 6.50 m and 7.60 m respectively, and can lay down a single swath or – with a second working pass – a double swath. In the latter case, the total working width of the 765 SD is 15.20 m.

Hibiscus 765 SD Vario – unrivalled possibilities

The position of the rotors can be changed hydraulically, which makes the 765 SD Vario model the most universal rake in our range. The working width of this machine can be varied between 5 m and 7.60 m for single swaths, or between one and two small swaths in the case of a single working pass. This is adjusted by the position of the reversible steering plate of the transport wheels.

Highly versatile

To make these operations possible, the machine is fitted with some extra features as standard, such as a second swath curtain as well as a reversible hydraulic steering plate. Thus, two concepts are offered in one on the same machine.

Two swaths in one single working pass

The Hibiscus 765 SD Vario can lay down a single swath in the first working pass, or a double swath in the second working pass. By steering the rear rotor to the left – done from the tractor cab – the operator eliminates the overlap between the front and rear rotor. By fitting the second swath curtain, the operator can lay down two swaths in one working pass at a working width of 8.50 m. The width of the two swaths is then 1.20 m each.

Narrowing down – an easy job

In this position, the Hibiscus 765 SD Vario can lay down a single swath in the first working pass with an adjustable working width of between a minimum of 5 m and a maximum of 7.60 m. This operation can be controlled hydraulically from the tractor cab during raking and it offers the operator a huge variety in working width.

Technical specifications

HIBISCUS	655 SD Classic	765 SD	765 SD Vario
Working width 1 swath (m)	5.80 – 6.50	6.70 – 7.60	5.00 – 7.60
Swath width 1 swath* (m)	1.20 – 1.50	1.20 – 1.80	
Working width 2 swaths (m)			8.30
Swath width 2 swaths* (m)			1.20 – 1.80
Number of tine arms/rotor	11/2	13/2	
Weight (kg)	2,225	2,900	3,040
Power required (kW/Hp)	48/65	55/75	
Transport width (m)	2.60	2.45	
Transport length (m)	8.10	9.15	
Transport height (m)	3.85	4.00	3.20 – 4.00
Number of rotors	2		
Number of tines/tine arm	4		
Rotor diameter (m)	3.20	3.65	
Cam track	Fixed	Adjustable	
Axle under rotor	Swivel		
Working height adjustment	Swivel axle position		
Working height adjustment	Infinite by means of spindle		
Wheels under rotor	2 x 4 x 16/6.50-8 (6 ply)		
Transport tyres	2 x 10/75-15.30 (8 ply)		
Linkage category	II		
Hydraulic connections	1 x SA with floating position + 1 x DA		1 x SA with floating position + 2 x DA + free return
PTO speed (rpm)	540		
Forward speed (km/h)	max. 12.50		
Foldable guard + disconnectable arms	X	X	S
Hydraulic offset device + 2nd swath board	X	O	S
Overload protection + lighting	S	S	S
Tine retainers	O	O	O
Wide tyres 15/55-17 10 ply	X	O	O

S = Standard / O = Optional / X = Not available on this machine / * Depending on crop conditions

Easy manoeuvring in spite of considerable length
Hibiscus SD rakes are outstandingly manoeuvrable, because the machine is 'true to track' due to linked steering on both wheels. In spite of the machine's total length of 9.15 m, it is easy to turn on headlands or steer the machine into a field. The rugged construction of the wheel axles and steering rods only goes to show that these rakes are built for true professionals.

Lely Hibiscus CD Profi

Rakes are often a decisive link in the forage-harvesting chain as we look at planning and workflow. This counts even more for contractors and large farms, where big foragers or loader wagons depend on well-shaped swaths which are finished on time to make sure that all forage is safe! Both of Lely's Profi rakes are designed to withstand this pressure and deliver the optimum swaths for guaranteeing good performance of high-capacity harvesters, balers and loader wagons.

Lely Hibiscus 1015 Profi – a highly cost-effective investment which pays itself back quickly

The Hibiscus 1015 CD Profi twin-rotor central delivery rake gives some serious competition to the four-rotor machines that are already available in today's market place. In general, rakes with four rotors may have a larger working width, but the Hibiscus 1015 CD Profi rake has already proved to be highly successful due to outstandingly clean raking operations, even at high forward speeds of up to 20 km/h. This machine achieves an output of fifteen hectares per hour without any problem. The Hibiscus 1015 CD Profi rake is a surprisingly cost-effective investment, especially when compared to rakes with four rotors. In addition to this, it is correct to assume a high trade-in value. After all, the durability for which all Lely products are renowned was the key in the development and testing stage of the Hibiscus 1015 CD Profi rake. You only have to take a look at the rugged build and special design of the rotors and frame to be aware of a concept of unconditional reliability and functionality.

Rotors with three-dimensional movement for optimum raking

The Hibiscus 1015 CD central delivery rake is a true pro, which is also due to the unique 3D suspension. It comprises a pivoting head, which gives the rotor 360° freedom of movement. Both rotors feature a unique wheel assembly. Lely has managed to develop an unrivalled wheel assembly – Octosense – in combination with 3D suspension.

Octosense – eight tyres guarantee a stable rotor

This wheel assembly (with eight wheels) ensures stable running of the rotors, irrespective of field conditions and also at high forward speeds. The machine negotiates even the worst uneven terrain conditions with ease and assurance. Due to the combination of the 3D movement of the rotors and the intelligently engineered wheel assembly, the entire crop is moved, even at very high working speeds.

Hydraulic-pneumatic ground pressure adjustment of the rotors

A hydraulic-pneumatic system transfers part of the weight of the rotors onto the frame. This construction reduces the weight on the rotors as well as ensuring improved ground contour following at higher speeds. Pressure in the hydraulic-pneumatic system can be easily adjusted.

A special ball joint ensures optimal freedom of movement for the rotor.

An extremely durable construction
The entire machine stands out from the rest due to its remarkably rugged construction. The main frame, made out of one piece, connects the portal headstock to the rugged steering 'bridge' for the rear wheels. Two sub-frames connect the rotors to the main frame. The A-frame allows the machine to be folded up, while the parallelogram construction gives the adjustable working width as well as very secure locking in the transport position.

Forced linked steering and large low-pressure tyres
Due to the steered rear wheel assembly this giant allows perfect manoeuvring, even in the smallest of fields. The steering system itself stands out for its rugged construction, with its large steering rods and king pins. The large low-pressure tyres ensure an ideal distribution of the weight of the machine.

Modular, maintenance-free rotors with fifteen tine arms – a guarantee of a high output

The fifteen removable tine arms feature the outstanding anti-breakage protection that has already proved its performance on other Hibiscus models. In addition, the tine-arm shafts are made of chromium steel, which is twice as strong as the material that is normally used for other makes of rakes. The tine arms have a lateral configuration and are supported by ball bearings, spaced at 320 mm distances. The lateral configuration reduces the stresses that are exerted on the cam track. This cam track itself has by far the largest diameter (370 mm) and it is made of high quality cast iron. The easy-access cam track can be simply adjusted. A closed heavy-duty gearbox constitutes the heart of the Hibiscus rake.

Specially shaped double tines for optimum raking

With a view to achieving the highest possible output, each tine arm on the rotors of the Hibiscus 1015 CD Profi central delivery rake is fitted with five double tines. These long tines, made of spring steel, have a 10 mm diameter and their special shape ensures perfect ground contour following as well as the ideal swath shape. No matter how heavy the crop is, the five double tines on each tine arm ensure optimum pick-up of the crop.

The Profi drive line of the Hibiscus 1015 CD

The machine features an outstandingly rugged drive. Due to the double reduction on the rotor, the drive shafts and gearboxes operate at a relatively high speed, whereas the rpm speed of the rake's rotor is low. This ideal combination keeps the torque in the drive low.

Profi + – additional ease of operation

The Profi + model features hydraulic depth adjustment and electric controls in the tractor cab for enhanced ease of control. Two double-acting hydraulic functions are still required.

Lely Hibiscus 1515 CD Profi – a surprising rake offering many benefits

A contractor's rake has to be flexible to ensure clean raking in different circumstances and to make perfect swaths for balers, loader wagons and forage harvesters, and all this with a maximum working width. Those demands were the starting point for developing Lely's widest rake, the Hibiscus 1515 CD Profi, and that resulted in a different V-shaped chassis with many more possibilities and greater stability than conventional four-rotor rakes. Capacity and feed quality is improved because no rake wheels touch the crop!

V-shaped chassis in field position

The two chassis beams, which fold out in a V shape when entering the field, are the first striking feature of Lely's widest rake. Two rotors are suspended from each chassis beam and lowered on the left- and right-hand side of the beam. In a forward direction, the position of these rotors remains consistent due to the parallelogram constructions. The suspension arms of the rotors can be extended to increase the distance between the rotor and the main beam.

V stands for versatility

By varying the angle between the two main beams and by extending or retracting the length of the suspension arms of the rotors, the rake has a wide range of working widths and overlap from which the control computer selects the ideal set-up. This may sound difficult, but it is not... The operator only has to either input or adjust the required swath width and working width; from then on, things move automatically.

The wider it is, the more stable it is

By placing the transport wheels on the outside, between the rotors, the ground contour following is excellent. Consequently, major adjustments to field contours can be easily made. Since the long suspension arms of conventional four-rotor rakes are absent, all four rotors have excellent stability. The wide position of the wheels – combined with 3D ground contour following – provides the best results plus optimum output.

Quickly into and out of the transport position

Upon arrival in the field, the rotors are lifted and the transport chassis is unlocked. As the machine moves on, the chassis is steered outwards through a central hydraulic cylinder, while the transport wheels remain parallel to the driving direction. During moving of the chassis, the rotors are lowered to the headland position; they are then extended to the pre-set working width.

Saving time on each headland

The Hibiscus 1515 CD Profi has the possibility of selecting a configuration to suit several types of headland shapes so that the computer can lift the rotors individually at the right time. The operator can make quick turns, assisted by the unrivalled stability that is ensured by the wide wheel position. Following the signal of the operator, the computer lowers the rotors individually at the right moment, based on the previously selected headland configuration.

ISOBUS technology for the user

The computer works through an ISOBUS control system and provides a neatly arranged overview of all functions on the tractor-based terminal. Thus, the rotors can be individually lifted quickly and simply, which also goes for adjusting the working width, working depth, swath width and headland functions. When you need to drive through a ditch, you can even temporarily set extra ground clearance.

Technical specifications

Lely Hibiscus	1015 CD Profi	1015 CD Profi +	1515 CD Profi
Working width (m)	9.20 – 10.20		11.00 – 14.80
Number of tine arms/rotor	15		11 + 13
Swath width* (m)	1.50 – 2.50		1.30 – 3.50
Weight (approximate) (kg)	4,755		5,820
Power required (kW/Hp)	74/100		90/120
Transport width (m)	3.00		3.00
Transport length (m)	6.80		9.00
Transport height (m)	3.85/4.80		3.99
Number of rotors	2		4
Number of tines/tine arm	five double tines		four double tines
Rotor diameter (m)	4.50		3.50
Cam track	Adjustable		Adjustable
Axle under rotor	Swivel + tandem		Swivel + tandem
Working height adjustment (basic)	Swivel and tandem axle position		Swivel and tandem axle position
Working height adjustment (fine)	Infinite by means of a ratchet spanner	Infinite by means of tractor hydraulics	Infinite by means of a spindle
Linkage category	II/III		III
Hydraulic requirements	2 x SA with floating position + 1 x DA		1 x DA + 1 x free return
Wheels under rotor	4 x 16/6.5-8 (6 ply)		4 x 18.5/8.5-8 (6 ply)
Transport tyres	15.0/70-18 (12 ply)		550/45-22.5
PTO speed (rpm)	400/450		400/450
Maximum forward speed (km/h)	17.50		17.50
Transport speed (km/h)	40		40
Overload protection	S	S	S
Lighting	S	S	S
Tine retainers	X	X	O
Hydraulic brakes	S	S	S
Pneumatic brakes	O	O	O

S = Standard / O = Optional / X = Not available on this machine / * Depending on crop conditions

Comfortable road transport
The two rear rotors fold up towards the inside, reducing the transport width of the machine to 2.50 m at the back, which provides improved road transport and bend negotiation. With the transport wheels placed further back than conventional four-rotor rakes, bearing load on the tractor is noticeably increased offering better comfort and safe driving.

Passionate about farming

Lely has a long and deep history of recognizing the needs of modern farmers. Our products are developed with the cow as starting point. We strive to let her excel and as such, we supply products to farmers and contractors ranging from forage harvesting, to feeding, housing, caring, milking and energy sourcing. In addition we boast specific knowledge and experience in facilitating farmers to get the best out of their equipment. As such our in-depth knowledge of the complete farm cycle – from grass to glass – is unrivalled in the agricultural business.

We are committed to a sustainable, profitable and enjoyable future in farming.

Lely really cares for the environment.

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