VB - VBP

Variable Chamber Round Balers
2160, 2190 and BalePack series

ROUND BALING TECHNOLOGY AT ITS BEST!

VB / VBP 2160, 2190

KUHN ROUND BALERS

be strong, be KUHN

KUHN provides a complete program of **innovative** agricultural machines. A **high quality**, **reliability** and **well handling** are very important features in the development of the KUHN machines.

Field performance, bale quality and bale density are fundamental to the profitability of every baling operation. Every minute counts when weather conditions are uncertain. The unique innovations on the KUHN balers make a real difference in field performance.

KUHN's Research & Development department is constantly improving the Round Balers to stay in front with innovations like: **Integral Rotor Technology**, **IntelliWrap** and **Progressive Density**.

KUHN offers the most efficient and versatile range of balers available on the market. KUHN balers are not only designed to produce **top quality bales** but are also built for **unmatched reliability**.

KUHN provides practice orientated solutions concerning:

Cost reductions

Good practices

www.kuhn.com

Comfort - Quality of life

Proximity - Advice

Peace of mind - Services

VB VARIABLE CHAMBER ROUND BALERS

Critical Baling Technologies

VB 2160 ∅ 80 - 160 cm / 4 X 5

VBP 2160 ∅ 100 - 160 cm / 4 X 5

Key Features

- **New Integral rotor design** - The aggressive design provides maximum efficiency, with high performance throughput in all crop conditions
- **OPTICUT** - The Integral feed rotor is standard combined with 14 and optional with 23 knives for maximum cutting efficiency
- **DROP-FLOOR** - If a blockage might occur the cutting floor and knives can be lowered)
- **Progressive Density** - Increasing tension as the bale grows provides a firm bale with a tough outer shell
- **Driveline** - A durable driveline with 1" chains and standard automatic lubrication
  The chains offer low maintenance, reliability and long lifetime
- **Tying** - Whether using net wrap or twine options, your bale is secured until needed
- **BalePack** - Two operations combined in one machine provides an efficient, one-man baling and wrapping system
- **IntelliWrap™** - Uses sophisticated electronics and hydraulics to monitor the wrapping process and continuously controls the film overlap, allowing total flexibility (VBP Models Only)
- **AutoPlus** - Total operational control by a handy in-cab terminal (VB Models Only)
- **ISOBUS** - The KUHN VBP is ISOBUS compatible. ISOBUS compatible tractors will therefore not require a separate terminal for the baler Alternatively, KUHN offers a VT 50 or a CCI 100 color terminal with touch screen

- **The large diameter rotor has heavy duty auger flighting which is integrated directly onto the outer sections of the rotor.**
  This Integral Rotor system provides the baler with even feeding regardless of crop conditions
- **With the unique Progressive Density bale formation system each bale can be made for specific needs rock hard all the way through or with a soft core, even in small diameters.**
- **Perfectly-filled bales are held together firmly by the twines and/or net.**
  The well-engineered net binding system is located on the front of the baler for easy monitoring of the binding process
- **The well thought-out and durable design of the KUHN VB/VBP balers allows for fewer moving parts, unmatched crop flow, outstanding performance and reliability**

VB 2190 ∅ 80 - 185 cm / 4 X 6

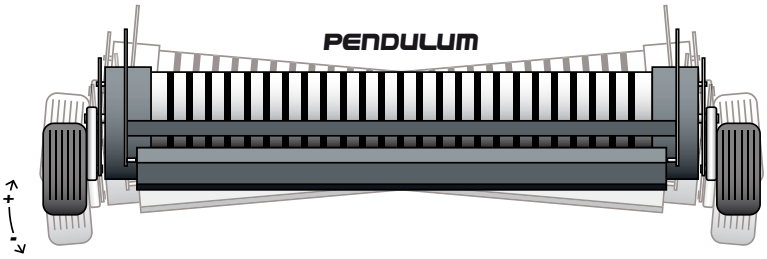
VBP 2190 ∅ 100 - 160 cm*/ 4 X 6**

* 185 cm / 73" with wrapper disconnected ** Small bale kit: Ø 80/32" - 160 cm

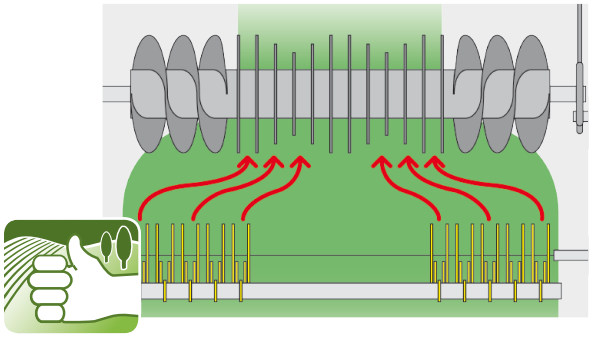
Diverse Intake Systems

OPEN THROAT
The wide Pick-Up gives tremendous capacity for easy handling of the heaviest windrows produced by modern, high-capacity combines and mower conditioners. With the OPEN THROAT design, there is also no restriction on the crop as it feeds into the baler. These features work together to help provide high field performance.

Pick-Up
The new designed Pick-Up gathers the densest of swaths even at high forward speeds. The PENDULUM system and 2.30 m wide intake with height adjustable guide wheels accurately carry the Pick-Up over every ground contour.
The Pick-Up roller helps to even out the flow of material into the integral rotor, regardless of the crop conditions.



Integral Rotor Technology
The large diameter rotor has a heavy duty auger flighting which is integrated directly onto the outer sections of the rotor. This system is called Integral Rotor Technology. This maintenance free short distance intake system ensures even feeding regardless of variations in the crop. With this system even the heaviest of crops are force-fed through the short intake, resulting in higher forward speeds for outstanding productivity.



DROP-FLOOR
The intake unit is protected by the main PTO clutch. If a blockage occurs the PTO clutch is automatically activated. In addition the complete cutting floor including the knives can be lowered. First the cutting floor will be lowered automatically followed by the knives. After the blockage is cleared the cutting floor including the knives can be brought back into the working position. In extreme circumstances KUHN provides double security by rotor disengagement clutch which separates the rotor drive so the bale can be finished.

OPTIFEED ROTOR

The OPTIFEED rotor with double feeding tines and integrated augers, provide a consistent flow of crop into the bale chamber. This rotor design helps even out windrows by moving them where needed for consistent bales every time.

OPTICUT 14

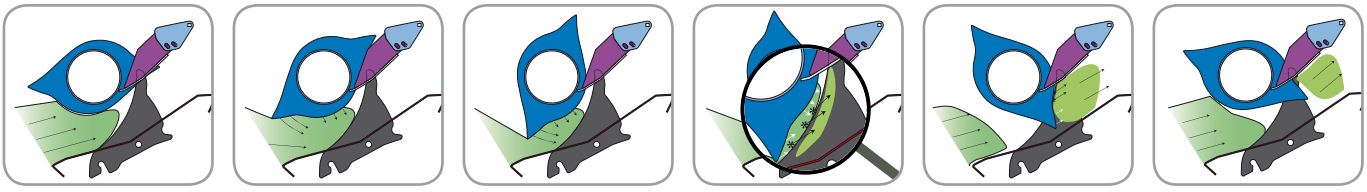
The Integral Rotor with the 14-knife OPTICUT system is designed to even out the swath and force-feed the crop into the baler for maximum throughput. The 14-knife OPTICUT cutting system provides a theoretical cutting length of 70 mm. Each single knife is spring protected against damage from foreign objects.

OPTICUT 23

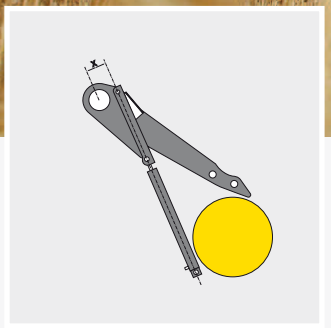
The Integral Rotor with the 23-knife OPTICUT system from KUHN is the benefits of intensive cutting and the mechanical protection. The 23-knife OPTICUT system provides a theoretical cutting length of 45 mm. Each single knife is spring protected against damage from foreign objects. With group selection the operator can choose to have 0, 7, 11, 12, or 23 knives in operation.

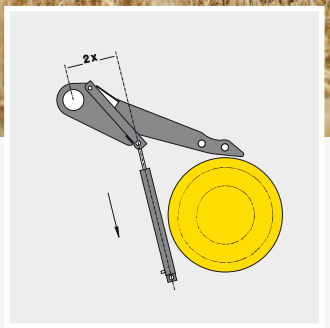
The OPTICUT systems from KUHN are acknowledged by users as one of the best cutting systems on the market.

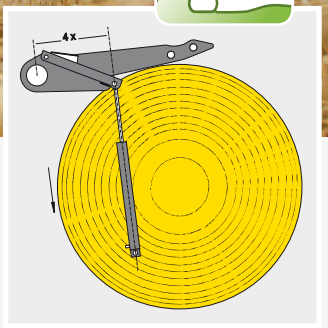
The silage is guided and drawn to the knives in an early stage which improves the flow and cutting performance and is also preventing unwanted blockage. As a result of the redesigned intake unit the power requirement of the round balers is decreased.

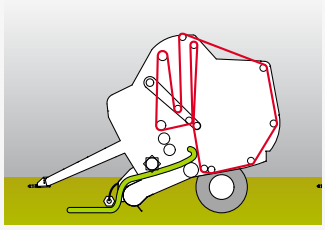


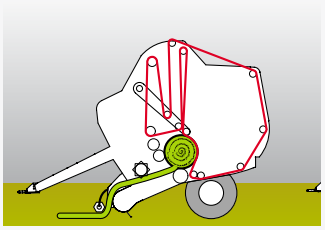
Progressive Density

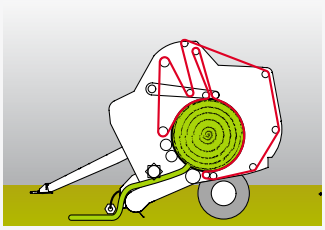


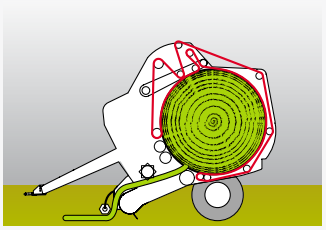








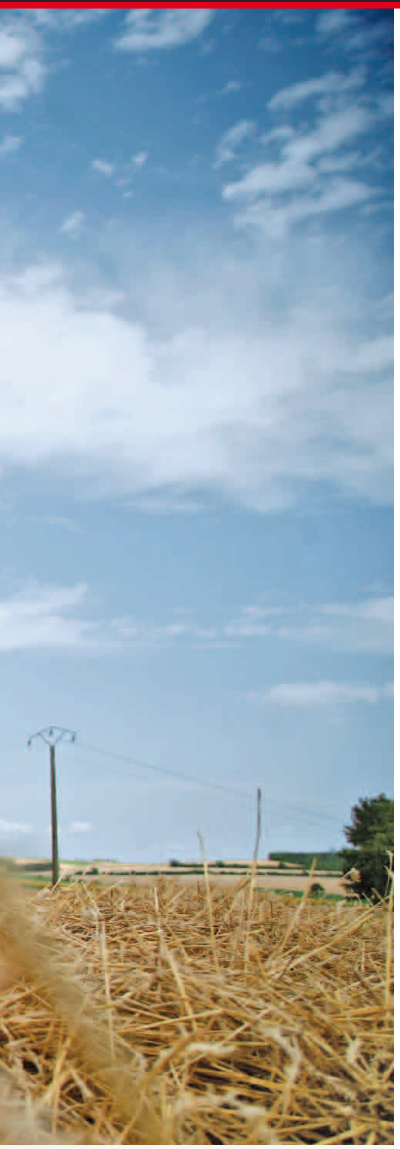




Instant Bale Starting

Bale formation starts in a well-designed pre-chamber, where belts and rollers provide fast, consistent core formation. In this pre-chamber, moderate or soft-cores can be chosen to meet the needs of any operation. Bale rollers and five "multi-grip", wide-section belts reduce crop losses and improve bale rotation.

Control in Comfort



Progressive Density, how does it work?

As the bale grows within the bale chamber, the belt tensioning arm is subjected to steadily increasing resistance from two hydraulic cylinders and a spring tensioner. So as the diameter grows, the bale's density does too.

The result is a very firm bale with a moderate core – not too soft, not too hard. With a tougher outer layer, straw bales will be more tolerant to bad weather conditions, while silage bales will maintain their shape for improved stacking and easier handling.

ISOBUS

All KUHN VB/VBP balers are ISOBUS compatible.*

ISOBUS compatible tractors will therefore not require a separate control box for the baler. Alternatively, the VT 50 or CCI 100 terminal can be used with tractors that are not ISOBUS compatible. Operator settings, such as bale diameter and knife activation, are accessed via the monitor. Operator warnings, such as left – right indicator and max bale size, and operator information, including bale diameter and number of bales, are also provided.

* Excluding AutoPlus controlled balers

CCI 100

The ISOBUS compatible CCI 100 terminal has a large 21,6 cm (8.5") color screen with outstanding clarity. Baling adjustments can be easily made via the touch screen or by use of the intuitive, large, soft-touch keys.

The CCI 100 terminal can also e used with many other ISOBUS compatible machines on the market.

Focus (for VB)

The Focus monitor offers total control on a wide, clear monochrome display. With large soft-touch buttons, baling adjustments can be easily made from the comfort of the tractor cab. The Focus monitor provides all information needed for operation of the baler as well as warnings in case of errors.

VT 50 (for VBP)

The KUHN ISOBUS VT 50 terminal has a 14,5 cm (5.7") color screen with outstanding clarity. Adjustments can easily be done by the touch screen and the large soft-touch keys on the sides. The VT 50 terminal can be used specifically with the KUHN ISOBUS machines.

AutoPlus

The in-cab control box provides clear and easy to read information and gives full command of the baling process. An audible and visual alarm signals when the bale is ready. A choice of automatic or manual start of the tying process can be preselected. Adjustments like the number of netwraps are easily controlled from the tractor seat. AutoPlus also provides a daily and total bale counter.

Non ISOBUS compatible

Optimum Tying Performance

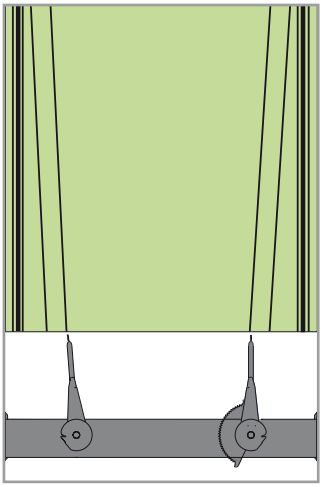
The binding cycle is crucial during baling. Less time needed for binding means a higher output. To optimise this process, main adjustments can be done via the terminal. The number of wraps can be pre-set. On the KUHN Balers the binding is placed at the front of the machine, resulting in a perfect view on the binding process from the tractor seat. Changing the net roll can easily be done standing safely on the ground next to the machine.

Twine binding

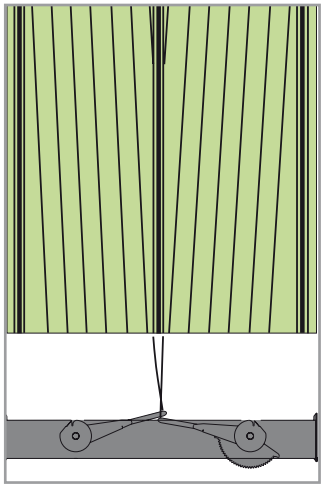
The twine binding cycle can be monitored via the terminal and from the tractor seat there is also an excellent view on the binding process.
By use of the double twine binding system the binding cycle time is reduced to a minimum. In the twine binding cycle both of the twines start at the bale centre and overlap itself and then move to the edges of the bale. Then the twines are moving gradually to the centre of the bale again.
The twines are intertwining at the final stage to secure that the twines are fixed and there are no loose ends.

Net binding

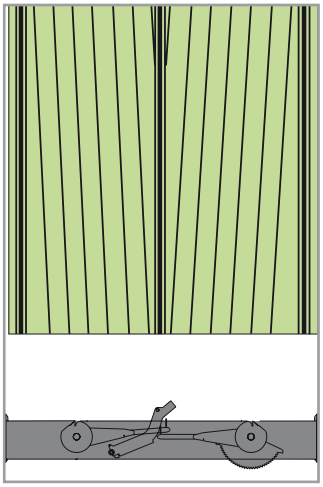
The well engineered net binding provides the bale with a clean and tidy net wrap from edge to edge. The net is fed into the front of the bale chamber to secure an even and direct start. A second net roll storage guarantees enough net supply for a long working day.
When needed, the VB and VBP also can be equipped with a combination of twine- and net binding.



Twin tubes feed twine simultaneously

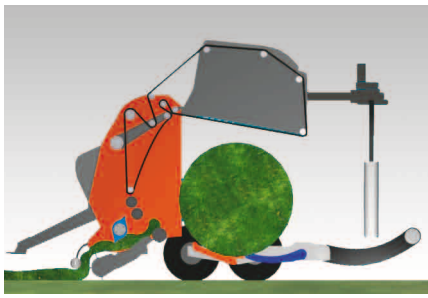


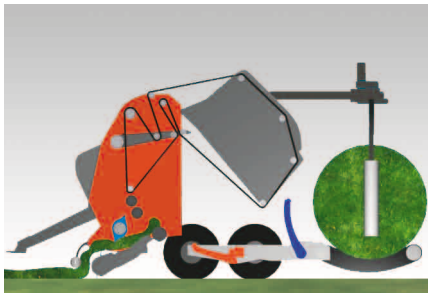
Center twines overlapped

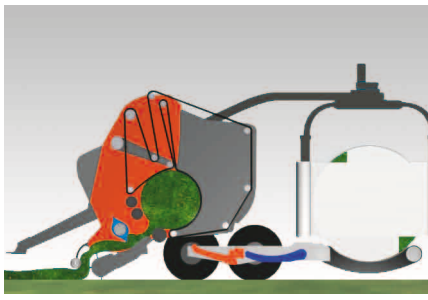


No loose ends at edge of bale

A One-Man Operation



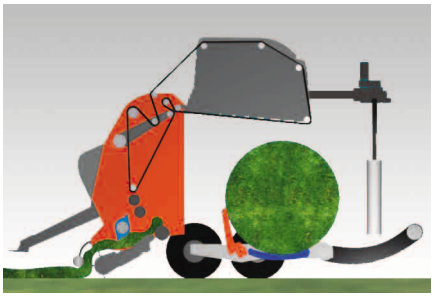




Two technologies from KUHN are combined in one machine, the VBP BalePack. This baler/wrapper combination begins with a standard VB 2160 or VB 2190 variable chamber baler with an OPTICUT Integral Rotor and unites it with an innovative wrapper system. This purpose-built machine is simple to use and capable of working on even the steepest slopes and in all crop conditions.

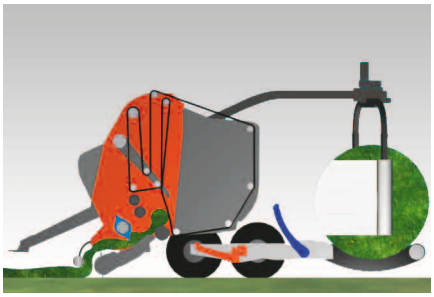
Fast and reliable bale transfer, combined with a high-speed, twin-satellite wrapping unit that is standard equipped with IntelliWrap™, give the KUHN VBP BalePack the capacity to reach an output of up to 60 bales per hour.

Bale Transfer

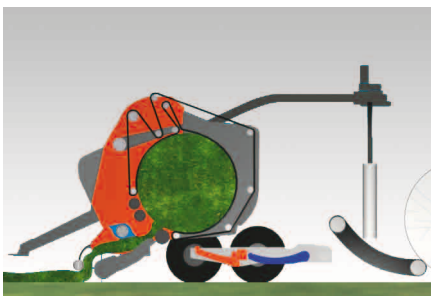


Twin loading forks provide a rapid and reliable bale transfer
To minimize idle time and maximize output, a rapid bale transfer is required. Because of the fact that not all bales are made in perfect field conditions the FBP BalePack is designed to ensure a rapid bale transfer, even when working in steep or sloping fields.

The first loading fork (in red) collects the bale as it leaves the bale chamber.
The wrapping table is tilted forward; ready to receive the bale.
Advantage: There is no possibility for the bale to roll over the rear of the wrapping table when facing up a steep slope.



The second loading fork (in blue) transfers the bale onto the wrapping table.
The tailgate shuts automatically, with the second loading fork still in raised position.
Advantage: This saves time and also prevents any chance for the bale to roll forward into the tailgate when facing downhill.



The wrapping table returns to its horizontal position and the second loading fork is lowered.
The sits low on the table supported by four wide belts and four lateral guide rollers.
Advantage: Regardless of the bale shape, the table offers good support and allows perfect wrapping.

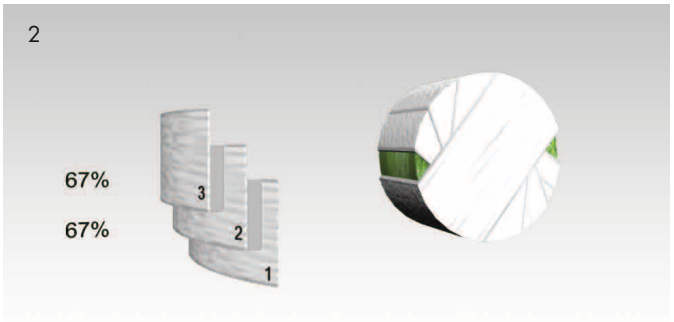
The IntelliWrap™ wrapping system with close mounted pre-stretchers rapidly wraps the bale, either in conventional or (optional) 3D mode.
Advantage: Vertically mounted pre-stretch units ensure no grass is sprinkled between the layers of film during the wrapping process for effective sealing between film layers and the highest possible silage quality.

The low mounted table allows the wrapped bale to be gently discharged while driving, either automatically or manually.
Advantage: When working on sloping grounds, the wrapped bale can be discharged while the net or twine is being applied on the following bale, saving time and increasing output potential.

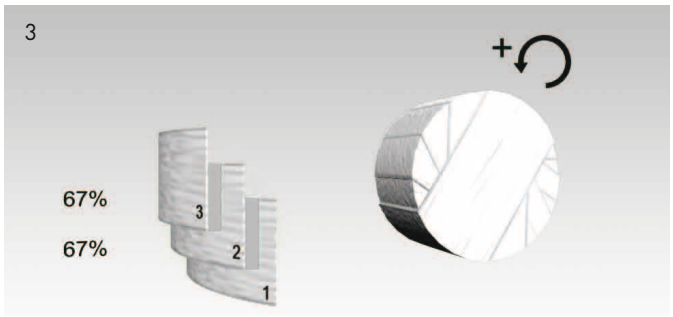
IntelliWrap™, The Intelligent Wrapping Technology

KUHN has been a pioneer in the wrapping and baling technology, leading the way for over 25 years. The latest result of this visionary approach is a revolutionary new wrapping technique called IntelliWrap™. This is a unique, intelligent and sophisticated system for wrapping bales.

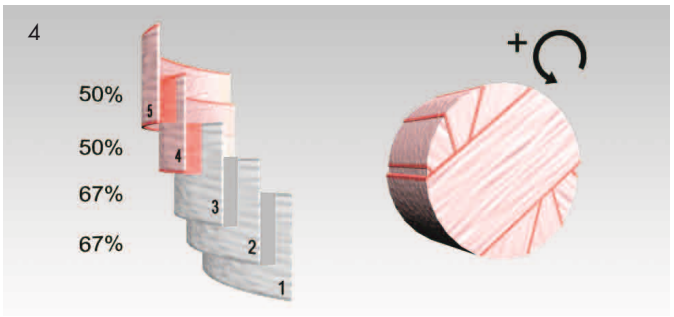
Selection of 5 film layers



The bale is covered with 3 layers and 67% overlap



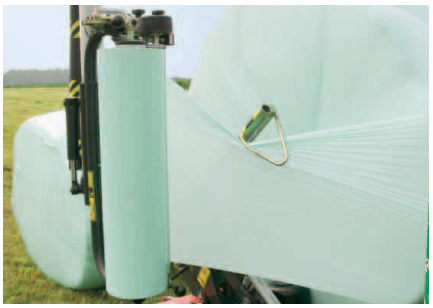
Increasing of the bale rotation speed



Final 2 layers with 50% overlap

By introducing IntelliWrap™, greater management and control is achieved. IntelliWrap™ uses sophisticated electronics and hydraulics to monitor the wrapping process and continuously controls the film overlap, allowing total flexibility. Depending on local circumstances, crop conditions and storage periods the amount of film layers can simply be adjusted.

Another feature of IntelliWrap™ is 3D wrapping. 3D wrapping is an intelligent and innovative way of applying stretch film to round bales. Key to the 3D wrapping process is its ability to distribute the total film quantity more uniformly and effeciently across the entire surface of the bale. By first wrapping the cylindrical surface of the bale more air is excluded and the shape of the bale maintains, even after a longer storage period.



The "scissor" film cutters assure a clean, consistent cut

With the pre-strechters in their horizontal position, only the bale is rotated on the wrapping table.
After closing the cylindrical surface of the bale, the pre-stretchers return to their vertical position to appy the remaining layers and close the bale.

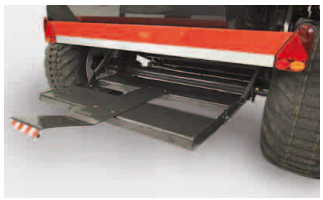
Features and Options

Pick-Up wheels in transport position

Small bale kit to be able to wrap bales with a diameter from 0,80 meter onwards

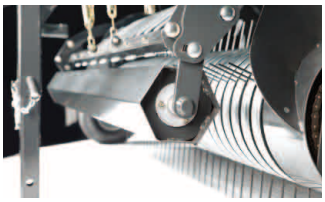
Net and/or twine tying provides flexibility

ISOBUS gives optimum control in comfort

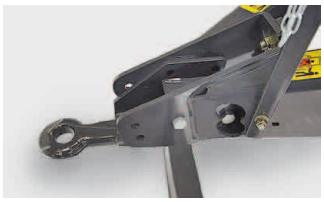


The optional bale ramp increases overall capacity**

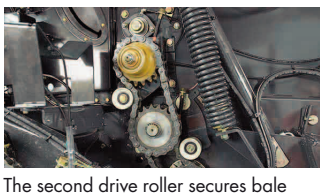
Integral Rotor Technology ensures even, force-fed intake*



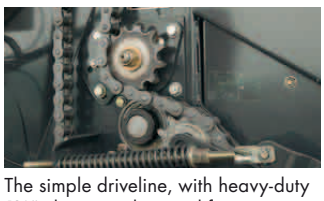
Standard wind guard with crop roller



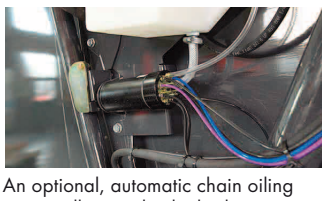
A reversible drawbar provides simple, flexible top or bottom attachment



The second drive roller secures bale rotation even in difficult crops, standard on the VBP optional on the VB**



The simple driveline, with heavy-duty 1¼" chains, is designed for minimum maintenance in the toughest conditions



An optional, automatic chain oiling system allows individual adjustment to the amount of oil on each chain

The optional proportional valve gives in-cab control of diameter, core and presure settngs

* Not available on Open Throat Balers

** Not available on VBP BalePack

SPECIFICATIONS	VB 2160 OPEN THROAT	VB 2160 OPTIFEED*	VB 2160 OPTICUT 14/23	VBP 2160 BalePack*	VB 2190 OPEN THROAT	VB 2190 OPTIFEED*	VB 2190 OPTICUT 14/23	VBP 2190 BalePack*
Dimensions								
Width (m/feet)	2.46 / 8' 1"			2.99 / 9' 10"'	2.46 / 8' 1"			2.99 / 9' 10"'
Height (m/feet)	2.67 / 8' 9"			3.00 / 9' 10"	2.87 / 9' 5"			3.04 / 10'
Length (m/feet)	4.02 / 13' 2"			6.41 / 21'	4.12 / 13' 6"			6.41 / 21'
Weight empty (kg/lbs)	2210 / 4872	2590 / 5710	2595 - 2895 / 2895 - 6382	5690 / 12.544	2260 / 4982	2540 / 5600	2655 - 2950 / 2950 - 6504	5735 / 12.643
Bale dimensions	4 x 5				4 x 6			
Diameter min. (cm/inches)	80 / 31							
Diameter max. (cm/inches)	160 / 63				185 / 73			160 / 63**
Width (cm/inches)	120 / 47							
Pick-Up								
Pick-Up width (cm/inches)	210 / 83	210 or 320 / 83 or 91	230 / 91		210 / 83	210 or 230 / 83 or 91	230 / 91	
Number of tine rows	4	4	4 / 5	4 / 5	4	4	4 / 5	4 / 5
Tine spacing (mm/inches)	61 / 2 3/8							
Wind guard with crop roller	Standard							
Pneumatic gauge wheels	Standard							
Intake								
OPEN THROAT	■	-	-	-	■	-	-	-
OPTIFEET	-	■	-	-	-	■	-	-
OPTICUT 14	-	-	■	■	-	-	■	■
Knife protection	-	-	Single / Spring	Single / Spring	-	-	Single / Spring	Single / Spring
OPTICUT 23	-	-	❍	❍	-	-	❍	❍
Knife protection	-	-	Single / Spring	Single / Spring	-	-	Single / Spring	Single / Spring
Bale chamber								
Bale formation	5 Belts + 3 rollers							
Belt width (mm/inches)	215 / 8½							
Lacings	Laced / Endless		Endless		Laced / Endless		Endless	
Binding								
Double twine wrap / capacity	■ / 8							
Net binding / capacity	❍ / 1+2							
Net and twine / capacity	❍ / 1+1 / 8							
Operation								
Control system	AutoPlus / Focus / CCI 100		VT 50 / CCI 100		AutoPlus / Focus / CCI 100		VT 50 / CCI 100	
Wrapping unit								
3D wrapping	-	-	-	❍	-	-	-	❍
Film end / break sensor	-	-	-	■	-	-	-	■
Wheels and Axles								
Single axle 11,5/80-15,3*	■	■	-	-	■	■	-	-
Single axle 15,0/55-17	❍*/ ■	❍*/ ■	■	-	❍*/ ■	❍*/ ■	■	-
Single axle 500/50-17	❍	❍	❍	-	❍	❍	❍	-
Tandem axle 400/60-22,5	-	-	-	■	-	-	-	■
Tandem axle 500/45-22,5	-	-	-	❍	-	-	-	❍
Hydraulic / pneumatic brakes	❍ / ❍	❍ / ❍	❍ / ❍	■ / ❍	❍ / ❍	❍ / ❍	❍ / ❍	■ / ❍
Others								
PTO	540							
Min power requirement (kW/hp)***	40 / 54	50 / 67	50 / 67 - 60 / 80	68 / 90	40 / 54	50 / 67	50 / 67 - 60 / 80	68 / 90

■ = standard equipment ❍ = optional equipment - = not available
* = AutoPLus ** = 185 / 72 with wrapper disconnected *** = Horsepower requirement may vary with different crops, conditions, and options used. Consult operators manual for proper tractor sizing.

* (This model is not currently available in North America)

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