The bigger, the baler

Machinery
New balers roundup

> *"Customers are looking for baling solutions which offer maximum reliability, optimum performance and higher bale weights."*

As harvest 2020 quickly approaches, it could mark the apt time to consider whether your current baler is still up to the job, or if it's perhaps time to look at something new. *CPM* highlights some of the latest innovation on the market.

By Charlotte Cunningham

Unpredictable seasons have become somewhat the norm over recent years. In the field, this is often reflected in much narrower harvest windows, with catchy weather patterns dictating when things can get going — or not.

With this in mind, machinery design has had to adapt to push performance, and for the baler market, this means packing more into less, so to speak.

CPM has taken a look at some of the latest high-performing options on the market to find out how they could help maximise performance during tight timeframes.

New Holland

New to the baler market, and claiming the award for "Machine of the Year 2020" in the forage harvesting category at last year's Agritechnica, is New Holland's BigBaler 1290 High Density.

According to the firm, the new BigBaler offers improved productivity and comfort, with bales of up to 22% higher density than conventional large square balers — significantly increasing transport and bale handling efficiency.

"The unique patented Loop Master knotting technology ensures optimum solid binding and protects the environment and the forage by eliminating twine offcuts," says Ian Bourke, hay and forage product specialist at New Holland.

As well as this, the new MaxiSweep pick-up helps feeding crop at higher rates, resulting in increased capacity and performance, he adds. "The unique driveline concept delivers a soft start up resulting in greater comfort for the operator and overload protection for the tractor's driveline.

"The short drawbar concept ensures excellent visibility for the operator and manoeuvrability. Comfort is further enhanced with a new intuitive user interface using the large IntelliView IV touchscreen display."

As well as this, a range of automated features, such as the IntelliCruise technology system which automatically adjusts tractor speed, adds to productivity and comfort, he says.

Claas

Following its introduction last autumn, Claas' entry level fixed chamber round baler — the Rollant 520 – was due to make its working debut at showgrounds this summer.

Producing a 1.25m diameter bale, the Rollant 520 features a new roller concept, optimised chain lubrication and a contemporary visual design, says Claas. ▸

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▸ "The bale chamber has 16 rollers in all, eight of which are made from 3mm thick sheet steel, and the other eight from 4mm thick sheet steel," explains Claas' Dean Cottey. "The ribbed profile of the rollers ensures precise rotation of the bale, even under moist conditions."

Storage and power transmission functions are performed by the lateral stub shafts. "These are flanged onto the roller body, and can be individually replaced if necessary, like the rollers themselves."

The baling rollers are driven on both sides and the rotor, main drive and tailgate rollers are fitted with Zubakki 2.5cm drive chains, adds Dean. "The oil lubricating the chain is pumped from a 4-litre tank with an adjustable eccentric pump. Lubrication is not tied to throughput — the oil is distributed as needed, precisely on the chain link pivot points."

The baling pressure is controlled via the tailgate closing rams and for maximum bale density, pressure of up to 150 bar can be applied to the rams.

In terms of optional extras, the MPS II system is available on the Rollant 520. "With this system, three of the compression rollers pivot into the chamber for additional bale compaction, early bale rotation and a perfectly uniform bale shape," says Dean.

Among the variants of the Rollant 520 is the Rotocut, — with a chopping system — the Rotofeed, with a feed rotor, and a variant with assister feed rake. "The crop is picked up cleanly and efficiently with a 2.10m wide controlled pick-up (1.85m with assister feed rake)," he adds. "A crop guard is available as optional equipment and this improves the crop flow even with small swaths, and helps to produce a uniform bale shape.

"Two lateral feed augers ensure the crop material is conveyed efficiently and reliably to the intake rotor. The optional chopping mechanism has 14 knives, with a theoretical cut length of 70mm, and have individual protection against foreign objects."

Kuhn

New to the market for 2020 is Kuhn's VB 7100 high density variable chamber round baler series, which includes VB 7160 and VB 7190 models capable of producing bales up to 1.6m and 1.85m diameter, respectively.

Featuring the company's patented i-Dense twin tension arm system, VB 7100 balers have the functionality to create bale densities of up to 140kg/m^3, explains Katie Calcutt, product manager at Kuhn. "Bale pressure is adjusted automatically in response to moisture sensor data, so requires no operator control and therefore allows efficient baler performance.

"The combination of the i-DENSE

New bale turner for Pottinger's Impress baler range

In a bid to improve storage efficiencies, Pottinger recently launched a bale turner to sit in tandem to its Impress range of balers. "To seal round bales and store them hygienically, they should be stored standing up," explains Pottinger's Shaun Kent. "In the upright position, the film layers are vertical and the pressure of the contents of the bale expands the film. The film layers are pressed together, and the bale is sealed more efficiently.

"But there are many more layers of film on the flat side and so the protection against external influences is greater, which is why Pottinger has developed a bale turner.

"The optional bale turner rotates wrapped round bales to be deposited in the vertical position so that they can also be transported away in this position. Integrated into the wrapping platform, it requires hardly any space, but can be used at any time, and can be engaged from the control panel and deactivated, if necessary."

In a bid to improve storage efficiencies, Pottinger recently launched a bale turner to sit in tandem to its Impress range of balers.

system with the established technology of the VB range ensures fast and consistent bale formation in the widest range of conditions, for silage or straw."

Also new this year is the firm's SB large square baler range, offering increased capacity and higher density baling.

Including the SB 890 (80 x 90cm bale size), the SB 1270X (120 x 70cm), the SB 1290 (120 x 90cm), and the extreme density SB 1290iD (120 x 90cm), the SB balers have been developed with an improved crop intake system compared with earlier models, says Katie. "A new crop guard design, combined with increased torque on the rotor and feeder fork driveline, gives these models up to 15% higher intake capacity and greater endurance."

New to the market for 2020 is Kuhn's VB 7100 high density variable chamber round baler series.

The torque regulation system monitors pressure on the driveline, including the crank-angle position-sensor and plunger-rod load-pins.

Picking up different pressures in the plunger cycle, the operator is guided to feed extra material into one side of the machine to achieve higher bale weights ▸

John Deere has added three new models to its range of large square balers, designed to increase performance and operational safety, as well as lower operating costs.

▸ that lead to increased handling and transport efficiencies, she adds.

John Deere

John Deere has added three new models to its range of large square balers, the L624 (70cm high by x 120cm wide), L633 (90 x 80cm) and L634 (90 x 120cm), designed to increase performance and operational safety, as well as lower operating costs, according to the firm.

New for this year, the latest launches replace the L1500 Series, while the single tie knotter 1424 and 1424C large square balers are no longer available.

"Due to short harvesting windows, customers are looking for baling solutions which offer maximum reliability, optimum performance and higher bale weights," notes Chris Wiltshire, John Deere UK and Ireland's marketing manager. "The new L600 Series large square balers have been designed to improve productivity by up to 15% and bale weight by up to 5%."

The L600 Series machines are fully ISOBUS compatible, which allows the operator to adjust and control various settings using all available ISOBUS displays.

The newly designed precutter can be controlled from the cab via the ISOBUS display, and features knife group selection with a choice of 0, 11, 12 or 23 knives, says Chris. "This is a big improvement in operator comfort, as you don't need to leave the cab to select different knife groups and can continue working without any restrictions."

For better monitoring of harvesting conditions, John Deere has also made further improvements to the machine's moisture sensor. This now has a wider measurement range of 9-40%, instead of 11-34% on the previous models, he adds.

Baler components have also been strengthened and optimised to deliver the promised higher productivity and operational safety benefits. "The newly designed L624 and L634 models use a 468kg flywheel, which is 64% heavier than on previous machines. All models feature an even, shear bolt free drive system, while hydraulic chamber pressure has been increased by 17% from 180 to 210 bar."

Both the existing rotor options, RotoFlow HC and MaxiCut HC with 23 knives, will continue to be offered on the new range, however, rotor diameter on the heavy-duty RotoFlow has been increased by 25%. "Available on the L624 and L634 models, this unit further improves crop intake and lowers the risk of blockages," explains Chris. "The new balers also feature a 13% larger roller baffle, and all rotor machines are optionally available with wear-resistant Hardox steel tines."

The L600 series will be offered as standard with 2.3m wide pickups equipped with 10mm finger rake steel tines and hydraulic load sensing, and all models produce bales measuring from 60-300cm long, adds Chris. "The balers also feature new optimised software updates and can be customised to make the machines even more efficient and productive to meet different customer needs."

Case IH

The tail-end of last year saw Case IH introduce a new high-density flagship model to its LB large square baler range ahead of the 2020 season.

According to Case, the LB436 HD offers a 22% greater bale density than the alternative LB434 XL model, but without making changes to the bale size.

Features unique to the LB436 HD include a new main gearbox and mid-ship gearbox with gearshift overload protection for high power transfer and driveline safety.

The LB436 HD is equipped as standard with Case's Rotor Cutter chopping system, incorporating 29 knives, with an adjustable knife selector allowing 7, 8, 14, 15 or 29 of these to be engaged. The knives are individually protected, and selection is indicated on the in-cab monitor.

A neat inclusion on the latest launch is Case's new twine knotter system,designed to boost productivity while eliminating field litter and bale contamination.

The new TwinePro knotter system offers multiple benefits, not only for the owner and operator, but also for livestock and the environment, says Case's Maxime Rocaboy.

"Key advantages include the prevention of animal feed contamination and environmental impact by eliminating twine offcuts that can find their way into both the forage and the field. TwinePro knotters also provide a significant increase in tensile strength and increased daily productivity from greater baling efficiency with reduced twine breakage risk."

The new knotter system is combined with redesigned needles and a new needle-yoke reclaim system.

Plunger loads

Mounted in a stronger frame to withstand higher plunger loads, with electric knotter fans to keep the units clean, the LB436 HD's six TwinePro knotters use a simple system to create a high-strength loop knot, allowing the operator to use maximum achievable density with a wide range of twines without the risk of bales bursting. The loop-knotting process eliminates offcuts left loose either on the bale — so improving forage quality — or in the field, hence reducing environmental impact.

Primary elements of the system include a new third knotter camgear that adds a third billhook rotation for an active release of the loop knot, adds Maxime. "There's also a new twine disc with two external notches rather than four, which releases the pressure on the twine at the second knot formation, with an integrated pin lifting the twine disc holder to allow the twine to escape from the disc instead of being cut. The knotter camgear drive powers the twine disc, bill hook and knife arm.

"With TwinePro, once the first standard knot is tied, a second knot — the loop one — is created for additional bale security.

"Not only does this loop knot provide increased strength of up to 30%, resulting in greater baling efficiency and productivity, but it enables well-tied bales of standard density to be made using lower-cost twine, or higher densities to be achieved with standard twine." ■

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