LARGE SQUARE HAY BALERS
PRESSING MATTERS FOR HAY MAKERS
EIGHT FOR WEIGHT.

Krone’s HDPII is setting the benchmark in large square baling technology with a world first 8-knotter system for the highest tonnes per hour rates. Eight means weight, reliably producing one bale after another. Other great innovations include hydraulic folding twine boxes with huge capacity and the unique Variable Fill System (VFS), which is gentle on the crop to keep you baling longer in dry and tough conditions.

SPEAK TO YOUR LOCAL KRONE DEALER TO FIND OUT MORE.
The past decade has seen the birth of high-density balers and today, these have been trumped with the development of ‘ultra’ high density models capable of punching out bales in excess of 800kg (sometimes at a rate of 60-80 bales per hour).

Along with the increased capacity (which thankfully has not added a great deal of complexity to the design of the balers) however, is an increase in the size of the tractor to run the balers, and naturally the price of the machine.

If you want to play in the high-density baler game, you will need a tractor with a minimum power requirement of 186-225kW (250-300hp) and spend $350,000-$400,000 for the pleasure (just for the baler).

The capacity figures of these balers can be quite staggering though, with an overall weight of 11-14 tonnes, flywheels approaching 500kg and in the case of the Krone eight-string HDP BigPack, 54 balls of twine (27 a side).

In this Research Report, Kondinin Group has inspected five large square balers; the CLAAS 5300RC, Krone HDP II BigPack, Kuhn LSB 1290 iD, Massey Ferguson 2370 Ultra HD and New Holland 1290 Plus (essentially the same baler as the Case IH LB434).

There are many shared elements of the LB434 XL and New Holland 1290 Plus including the chassis, drive train and knotters. However both brands offer some different options on the ancillary parts of the baler which come standard, such as partial/full bale eject function, moisture monitors and cameras.

For the purposes of this report, Kondinin Group’s researchers inspected a New Holland 1290 Plus baler. Kondinin Group is aware of several new developments from manufacturers, including Case IH and New Holland with a completely new build, high density baler. Kondinin Group’s research team will be seeing the baler in the flesh when it is launched this month at Agritechnica in Germany.

Aside from being a high capacity baler, the machine has a new loop knotting system which means no tufts or twine residue from making the knots.

And in a coup for Australia, Kuhn has released its latest SB series of balers here but unfortunately the baler was held up in sea freight quarantine when inspections were being carried out.

Researchers will also inspect the new Kuhn at Agritechnica and in the paddock in Australia as soon as possible.

The market for these balers is certainly a hot spot at the moment while sales of other types of machinery such as tractors and harvesters are suffering a lack of demand.

Tractor and Machinery Association figures show that for the year-to-date, the baler market is up 44 per cent compared to the same period last year.

Sales of large square balers for the year-to-date are up 71 per cent on the previous year with 120 units delivered. At around $300,000 a pop, that represents a considerable investment in hay making gear.

Demand for the large square balers has been driven by seasonal conditions where the spring has failed to deliver moisture for the past two years. The dry springs have seen many grain crops cut for hay and demand for hay and feed in general is high due to the prolonged drought in much of New South Wales and Queensland.

The failings of the season have also led to broadacre farmers buying large square balers as a form of insurance against the vagaries of the weather.

Buying a large square baler is not necessarily all about maximum bale weight though and consideration needs to be given to a farm’s ability to handle, transport and stack bales, especially if a portion of the hay is to be sold off farm.
A word on twine

In line with the development of higher capacity balers, twine manufacturers have had to up their game to make twine able to handle heavier bales.

Most manufacturers will quote a type number and/or reference number relating to the runnage (metres of twine per kilogram) and a knot strength quoted as kilograms of force required to break the knot. For example, a type 130 twine would deliver 130m of twine per kilogram.

Unfortunately, the reference numbers may be based on in-house testing of twine and the numbers may be the peak of testing results, not the average (in a similar way that tractor horsepower is often quoted as the maximum available to that engine, not its rated power).

Calculating the actual runnage of the twine is quite simple. Accurately weigh a one metre sample of the twine. As an example, if the one metre of twine weighed 8.7g, then the runnage is 1000 divided by 8.7 = 114. So you could expect 114m from one kilogram of the twine.

Then if the twine ball is weighed at 9kg, the ball will deliver (9 x 114) 1026m.

KNOTS

The two basic types of knots used in large square balers, are the loop knot (or Cormick type knot) and the Deering type knot. Knot strength is usually quoted as kilograms of force and for the typical high-density, large square balers, 250kg is the minimum required.

Some manufacturers are working on or already have knot strengths approaching 300kg or more. Kondinin Group will endeavour to perform some independent knot strength testing in the future.

TWINE CONSTRUCTION

How the twine is made will impact its strength and manufacturers are now employing several design options to make twine as strong as possible.

Recent developments in the extrusion process of the polymers to make twine include changes to the cross section and profile such as a webbed structure (pictured right).

Be aware that a thicker twine does not necessarily make the twine stronger and may also impact the twine’s ability to run through the bale, particularly the bill hook of the knotter.
The biggest evolution in the LARGE SQUARE BALING industry

**SB 1290 iD**

**1.** BOOST YOUR PROFITABILITY
   Heavier bales for efficient logistics and handling

**2.** TWINPACT DOUBLE PLUNGER TECHNIQUE
   High density bales, low power requirement

**COMPACtion**
- +60 tonnes

**DENSITY**
- +25%

**CAPACITY**
- +10%

WWW.KUHN.COM.AU
Continued supplies of new season hay are making their way onto the market. Hay is being made in the Atherton Tablelands, the Darling Downs, central west NSW, north coast NSW, southeast South Australia (the north of the region), central South Australia, and southwest Western Australia.

The Goulburn Valley is on the cusp of hay making. With a lot of frost damaged crops in southern NSW being turned into hay, many farmers in the Goulburn Valley who were going to cut for hay may now try to hold off a little longer in the hope of a grain harvest instead. Silage is being made in south Gippsland and southwest Victoria.

With new season hay coming onto the market there is starting to be some easing of hay prices. There is a lot of hay already cut, on the ground, and in parts of the nation, a lot of this hay is already committed and moving fast.

Cereal hay prices have eased recently in Bega, Gippsland, southwest Victoria, central South Australia, and southeast South Australia.

There is a lot of hay being transported around the country and quality may vary, especially if the hay had been cut and had to sit on the ground for any period before being baled. Feed tests and viewing fodder before purchasing continue to be reliable strategies to validate the quality of any purchased feed.

New season hay is certainly providing some welcome relief to the extended period of tight supply, exacerbated by ongoing and extended drought conditions and any easing of prices in regions will undoubtedly be welcome to already over-stretched cash flows/bank balances.

With an early start to the hay making season in many regions in 2019, there is concern that yields may be negatively impacted, especially where crops in doubt have been cut early.

OUTLOOK
The outlook for 2019 and into 2020 is not without concern for the fodder market. A patchy growing season and early cutting will provide supply relief for a period but if yields are down, as expected, this may be short-lived as will any long-term relief on prices.

For as long as the current drought persists, livestock producers, despite their de-stocking, will continue to seek out reliable fodder supplies as will the dairy industry.

Cattle on feed, according to latest results of the latest Australian Lot Feeders’ Association (ALFA) and Meat & Livestock Australia (MLA) survey, have again broken new ground reaching 1,147,393 head for the April – June 2019 quarter.

The lot feeding industry is expected to remain a very active buyer of fodder to support these numbers.

Until we see a widespread and lasting break in the ongoing, persistent drought and dry conditions impacting large parts of the country, fodder supplies will remain under pressure and full hay sheds, a rarity.

– John McKew, CEO, Australian Fodder Industry Association Ltd
Massey Ferguson is proud to offer a line of robust, high quality square balers. Providing world-leading density and performance, innovative design and uncompromising engineering means your fields are cleared faster with less handling. Now is the time to get it done with the ultimate solution for all your baling needs.

SUPERIOR BALES. FAST PERFORMANCE.

MF SQUARE BALERS

Massey Ferguson is proud to offer a line of robust, high quality square balers. Providing world-leading density and performance, innovative design and uncompromising engineering means your fields are cleared faster with less handling. Now is the time to get it done with the ultimate solution for all your baling needs.

CONTACT YOUR LOCAL MASSEY FERGUSON DEALER TODAY

MASSEYFERGUSON.COM.AU | FREECALL 1800 802 914
Dry conditions in many parts north of the Great Dividing Range, similar to those seen last year, have led to a warning for farmers to exercise extreme caution with the cutting, baling and storage of hay.

Victoria’s Country Fire Authority chief officer, Steve Warrington, said firefighters responded to a record number of haystack fires last fire season.

“Over the previous fire season CFA crews responded to close to 90 haystack fires – more than any season before,” Warrington said.

“It is important for farmers when you’re preparing your property for the fire season that your hay is prepared, put away and stored safely. Haystack fires can start quite easily from lightning, equipment and machinery, but another major source is spontaneous combustion.”

Spontaneous combustion can occur when hay is either not properly cured before baling, or not stored to protect it from rain or damp conditions, which means moisture content in the bales is higher than the recommended level.

They are then stored in environments with high temperatures and little airflow which triggers a chemical reaction that leads to fire. This can happen to any bale regardless of size.

“The advice is clear and simple; cure your hay properly and then store it in multiple locations and away from assets to avoid large losses if a fire occurs,” Warrington said.

“If you’re storing hay in a shed, make sure air can circulate around the haystacks, monitor stacks on a regular basis, check for heat levels and avoid walking on stacks in case they collapse due to internal heating.”

Some tips to reduce the chances of a haystack fire include:

- Ensure hay is well cured before baling.
- Know the history of the hay purchased.
- Keep haystacks to a limited size.
- Monitor moisture and temperature of hay regularly.
- Be alert for unusual odours such as pipe tobacco, caramel, burning or musty smells.
- Store hay in separate stacks or sheds away from farm equipment and other buildings.
- Keep hay dry. Protect it from rain, leaking roofs or spouts, and runoff. Cover stacks with tarps or hay caps.
- Don’t stack hay right to the top of a hay shed. Allow some air to circulate at the top – this helps to carry away moisture.
- A crowbar can be a handy temperature gauge for a hay stack. Push the crowbar into the stack and leave for two hours.
- Less than 50°C will be about when the crowbar can be handled without discomfort.
- 50°C – 60°C will be when the crowbar can only be handled for a short time.
- 60°C – 70°C will mean the crowbar is almost too hot to touch. Hay should be moved to improve air flow at this temperature.
- Over 70°C (bar is too hot to hold): There is a real potential for fire.

Source CFA
A common feature on many of the balers inspected compiling this report was a Gazeeka moisture meter.

The Gazeeka 870 unit uses microwaves to accurately measure bale moisture.

Made in South Australia specifically for large square balers, the meters can be fitted at the dealership for new balers or retrofitted to existing machinery.

ISOBUS compatibility also ensures the meters will work with most balers’ virtual terminals or they can be installed with their own terminal.

The unit comes with its own sturdy control box which requires 12-volt power.

The system works with an active and passive antenna (acting like a transmitter and receiver) placed on either side of the rear of the bale chamber with bale moisture readings recorded 50 times a second.

The in-cab display will show instantaneous, peak and average moisture levels and the manufacturer claims an accuracy of plus or minus 0.5 per cent compared to oven dried sampling – a level backed up by owners contacted by the Kondinin Group.

Desired moisture levels can be pre set and if exceeded, an aerosol spray can marks the bale with a dot of paint to denote a potential “hot spot”. Both sides of the bale are marked.

Cost varies depending on the baler model and ISOBUS requirements but the 870 used for a Krone BigPack baler is $8470 excluding GST which includes the touchscreen.

ISOBUS units (no touchscreen) are $7710 excluding GST.

Gazeeka also manufactures a range of liquid application systems for products such as preservatives and a weather station which can send weather data to a phone or smart device via an app to alert the user when conditions may be ideal for baling.

More details: www.gazeeka.com.au
CLAAS produces three baler models in its Quadrant range but only brings the top-spec 5300 into Australia, which was inspected by Kondinin Group.

The 5300 RC produces a 1.2 x 0.9m six-string bale and is a true heavyweight at just over 12t. Replacing the 3300 Quadrant in 2017, the 5300 has undergone recent upgrades including the addition of a bale weighing system. It features heavier-duty knotters, drivetrain and improved density control over the 3300 series.

**FRONT END AND PICK UP**

The 2.35m pickup is standard throughout the range and features four tine bars on a cam drive, although plans are afoot to upgrade this to five bars next year. On the model inspected the pickup was mechanically driven but hydraulic drive is an option, which is reversible for clearing blockages. The pickup features suspension through hydraulic accumulators and the castor wheels fold up for transport.

Two rollers situated above the pickup help compact and feed crop into the intake, with the rear press roller hydraulically driven. Auger flighting on each side of the transverse feed auger propels crop into the 1.2m wide RotoFeed roller, which has a wavy pattern of four-bladed stars to draw crop through the RotoCut knife system. This can be fitted with up to 51 knives on the fine cut option for a 22mm chop length. The model inspected had 25 knives for a 45mm chop length, and the number of knives (and chop length) could be altered simply by turning a large nut on the side of the knife draw to select between 25, 13, 12, 6 or zero knives, all without having to slide the drawer out. Blank knives are supplied.

The hydraulically operated cutting floor will automatically drop down if a cutter overload is detected, allowing the rotor to restart under reduced crop pressure. This feature is also handy in the event of a blockage and can be operated manually. In most cases it should be possible to deal with blockages without having to leave the cab. Rotors are protected with clutches and not shear bolts.

**PACKING, BALE CHAMBER AND PRE-CHAMBER**

The bale pre-chamber pressure can be selected from one of three options from the terminal in the cab and is actuated hydraulically. This alters the travel of the feeding fork to compensate for light or irregular swathes, only forcing the pre-chamber contents into the bale chamber once properly filled.
Both the feeding fork and rotor are protected with separate overload clutches, which disengage automatically, alerting the driver through the ISOBUS terminal. Clutches will automatically re-engage once the PTO speed has been reduced.

PTO drive from the tractor is directed through a small primary gearbox which angles the driveshaft up to the flywheel and main gearbox, which drives the plunger at 46 strokes per minute. Bale chamber pressure is monitored by a position sensor which measures the deflection of the gearbox crossmember. Apart from the PTO clutch, there is also a shear pin on the flywheel providing overload protection (along with the knotter drive, the only shear pins in the entire baler).

The bale chamber has been strengthened and lengthened to 3.85m to achieve higher density bales. The longer bale chamber also allows the new bale to expand and take up string tension more gradually, reducing the chances of twine breakage. A hydraulic bale ejector is fitted to remove partial bales.

**KNOTTERS AND TWINE**

The knotter platform at the top of the baler is accessed using a demountable ladder, which is also used to access other elevated positions around the machine. Inside the safety rails there is plenty of room on top of the machine to access the knotters with the cover open.

There hasn’t been any fundamental changes to Claas’s single knot system since it was patented in 1921, with upgrades this time round in bill hook design and strength to improve knotting in a range of twine types. The single knot system is a highlight, as it produces a reliable tie without any residue tufts.

Knotters are driven by direct drive, ensuring synchronization and preventing needle and plunger collisions. A recent upgrade is the fitting of a sensor to each knotters to detect missed knots and alert the operator through the terminal in the cab. There are no visual indicators fitted.

The knotting system is kept free of dust by two hydraulically-driven fans with oscillating baffles delivering 140km/h airflow.

Bale length is still regulated by a star wheel, but its rotation is measured electronically, with the first bale length used to calibrate the system and actuate the knotters at the preset bale length. There is no mechanical linkage from the star wheel to trip the knotting system. The knotters can be tripped from the cab to tie off the last bale if desired.

The twine boxes seem reasonably well sealed and store 12 balls on each side, with four spools joined together for each knotters.

**ACCESSORIES/CONTROL**

The bale weight system is optional and features four load cells built into the tailgate structure, and Claas claim the system is accurate to 5kg. Bale weight and total tonnage is displayed on the ISOBUS terminal, and bale desired bale weight can be entered, with the machine adjusting density to suit.

The 5300 is well looked after in terms of automatic lubrication, with a standard autogreaser servicing a multitude of points, including axle suspension as well. With the majority of drives being either hydraulic or shaft instead of roller chain, and overload clutches running in oil, there are very few points requiring attention. LED strip lights are standard across a range of access points, and four LED lights are fitted for driving.

The hitch is adjustable for height and the hydraulic jack is standard equipment. The steered rear axle locks in place for reversing.

More details: www.claasharvestcentre.com

Price: $344,300 incl GST as inspected
When it comes to capacity in large square balers, the Krone Big Pack range delivers in spades.

Since their launch in 2005, HDP balers have pretty much set the standard when it comes to high density balers.

Krone recently upped the ante in the high-density stakes with the release of its eight-string, double knotter Big Pack HDP II.

It’s a massive baler, weighing in at around 14.5t, and takes 54 twine balls (27-a-side) when fully loaded. Kondinin Group in-paddock inspections can confirm bale weights regularly in the 800-850kg range.

The variants in the Big Pack range cover the Big Pack 870 (producing bales of 0.8 x 0.7m), 890 (bales of 0.8 x 0.9m), 1270 (bales of 1.2 x 0.7m), the 1290 (bales of 1.2 x 0.9m) and a ‘4x4’ model which makes bales of 1.2 x 1.3m.

Within the range there is also the MultiBale, which can turn out small square bales within a large square bale and an Extreme variant, which has beefed up wearing components so it copes with dust, dirt and crops such as sugar cane.

When the BigPack HDP II with eight strings was launched, Krone claimed it could achieve 10 per cent more density than the standard HDP 1290 model.

The increase in capacity is due to a new frame, chassis and bale chamber (stronger) giving the baler a better ability to “squeeze” fodder into the bale chamber.

Both HDP and HDP II models run from a tractor pto speed of 1000rpm but the HDP II has an intermediate step-up gearbox to deliver 1180rpm for the 608kg flywheel.

The HDP II also has bigger hydraulic cylinders for the top and sides of the bale chamber, and the pre chamber is about 30 per cent taller.

**FRONT END AND PICK UP**

The drawbar is quite short and reasonably steep and it houses an intermediate gearbox and drive shafts, ultimately feeding the 608kg flywheel, housed in front of a huge bevel gearbox which drives the plunger mechanism. A hydraulic jack is standard.

There are no chains or shear pins in the drive mechanisms, with overload protection clutches and a hydraulic start assist. The start assist runs two hydro motors to get the flywheel turning before the tractor pto is engaged.

Pickup width is 2.35m and Krone uses a camless system for the five rows of tines which are galvanised and spaced 55mm apart.

A powered feed roller is standard and the crop press roller and pick up down pressures are adjusted by coil springs. Pickup height is adjusted mechanically.

For cutting fodder, Krone has a 26-blade option (XC variant). Pre-selected knife groupings can be manually selected via a hex-shaped shaft or optionally from the tractor cab.

**WHAT WE LIKED**

✓ Access to top of baler
✓ Twine box sideshift and access
✓ Capacity and build strength
✓ Lack of chain drives

**WHAT COULD BE BETTER**

✗ Heavy weight baler
✗ Twine residue from knotting

Krone Bigpack 1290 HDP II

© Kondinin Group – Reproduction in whole or part is not permitted without permission. Freecall 1800 677 761
The bale chamber measures 1200mm x 900mm and can produce bales of 1.0m-3.2m in length. Most of the chamber components are very heavy duty, including a massive yoke and up to six hydraulic rams for bale density control.

The beefed up HDP II has about 2.5t more steel (compared to the HDP 1290) used to cater for the extra pressures and it's no surprise the baler was the heaviest of all the machines inspected, at 14.5t. The XC version breaks the 15t barrier, with a minimum recommended tractor power of 190kW.

Krone Big Pack balers have the ability to run at full power, which uses 1000rpm pto and a plunger stroke rate of 45 strokes per minute or in easier conditions, 800rpm and 36 strokes per minute.

When a blockage occurs, the cutter and packer clutch mechanisms reset which results in little downtime.

The two speed choices are part of what's known as the Variable Fill System (VFS) which loads and compresses fodder into the feed chamber before placing it into the bale chamber.

Depending on the baler model, the VFS operates with three or four packer rakes, one feeder rake and one retainer. The packers run on a shared cam track while the feeder rake runs on a separate cam track.

The packers and feeder continue placing fodder into the feed chamber until the feed chamber is full. Once capacity is reached, the retainer gives way and the fodder enters the bale chamber.

This triggers a release clutch which swings the feed cam into a different position for the process to start again.

Bale length is measured electronically, working with a star wheel which is located at the top centre of the bale chamber.

The in cab monitor allows the operator to virtually view the bale making progress and trip the system to a particular length if needed.

Bales can be auto ejected from the cab at the push of a button which actuates loosening of the bale chamber doors and 10 strokes of the bale ejector forks.

**KNOTTERS AND TWINE**

The HDP II is the only baler on the market to offer eight knotters, making it the baler of choice for many contractors or supplier of export hay where the priority is to pack as much weight into the bale as possible.

Twine box capacity is 54 bales and the twine box extends out from the baler and can be height adjusted all from the cab.

On the HDP 1290 six string models, the twine box tilts out with the support of gas struts. On the HDP II with the twine box extended, access to the bale chamber is excellent.

Krone uses a double-knotter and the Rasspe knotters are easy to get to via a sturdy set of steps and rails.

Individual air lines are directed to the knotters to help prevent dust and dirt getting on the tying mechanisms and a mechanical fan provides a constant air stream over the whole knotting bank.

**ACCESSORIES/CONTROL**

A factory moisture sensor is an optional extra but the eight-string baler inspected for this report was fitted with an aftermarket Gazeeka unit.

Weigh scales on the tailgate are also optional but if used, they will display individual bale weight and total weight for a particular job or paddock.

An auto greaser takes care of most of the lubrication on the baler however there are a few grease nipples which require lubrication, for example axle pins every 200 hours and grease nipples on the PTO shafts.

The baler is ISOBUS compatible and as such, the ‘factory’ CCI 1200 monitor is an optional extra. Hydraulic brakes are standard.

**More details:** www.kroneaustralia.com.au

**Price:** $396,000 incl GST as inspected (no cutting knives)
Kuhn recently launched a new high density baler in Australia with the release of the SB 1290 iD. Unfortunately, the baler was held up due to quarantine impositions during sea freight and was unable to be viewed for this report.

The Kondinin Group research team instead inspected a current model LSB 1290 iD with models available to make bales of 0.8 x 0.7m (LSB 870), 0.8 x 0.9m (LSB 890 D), 1.2 x 0.7m (LSB 1270), 1.2 x 0.9m (LSB 1290D) and the 1.2 x 0.9m LSB 1290 iD.

The LSB 1290 iD inspected has the ability to make the highest density bales in the range with one of its key features being the TWIN PACT double plunger system which the manufacturer claims can pack 60 tonnes of plunger force.

Kondinin Group will report on the new model SB when it has a chance to inspect the baler.

**FRONT END AND PICK UP**

The pick up is 2.3m in width and the drawbar is well laid out with one of the neater set ups on balers inspected for hydraulic hoses.

A hydraulic jack stand is standard and the power take off shaft follows in a straight line to feed the 485kg flywheel.

There are five rows of tines on the pick up with tines spaced 61mm apart, fitted to a cam track.

**PACKING, BALE CHAMBER AND PRE-CHAMBER**

As stated, a unique feature of the LSB 1290iD is what Kuhn calls the TWIN PACT plunger.

The plunger is divided into upper and lower sections and thanks to a cleverly designed, triangular-shaped con rod, the bottom of the plunger advances first in the plunging sequence.

---

**WHAT WE LIKED**

- Easy access for maintenance
- Neat drawbar area
- Drop down inspection door on pre chamber
- Weigh scales standard equipment

**WHAT COULD BE BETTER**

- ISOBUS compatibility
- Twine residue from knotting
The system is driven by a 485kg flywheel (up from 285kg on previous models) with a work rate of 46 strokes per minute.

The TWIN PACT design is certainly unique but it also means a few more moving parts and bearings in a high pressure area of the baler.

There is plenty of overload protection throughout the drive trains with cam clutches (torque limiters) used extensively (gearbox, intake, feeder fork and pick up components).

An excellent feature is the drop down inspection door, underneath the pre chamber, which allows good access and can also be very handy is the baler is blocked.

Pre-chamber compaction is controlled via Kuhn’s Power Density system where the fodder is taken beyond the Integral rotor by a folder, which works at twice the speed of the piston and conrod action.

When the pre-chamber is full, pressure is exerted on wedges in the upper part of the pre chamber and once the pre set pressure is exceeded, the forks are fired which pushes the pre-compressed forage into the bale chamber.

Density is controlled by sensors on six hydraulic cylinders and the bale chamber length is 3.75m.

Access to the pre chamber area is very good, once the twine boxes have been tilted out of the way.

Many of the frame and chamber steel members are also curved on the top edges to help dust and debris flow.

**KNOTTERS AND TWINE**

LSB models are equipped with six Rasspe double-knotters. The twine boxes hold 15 balls each side, but the new SB models will be able to hold 16 a side.

Access to the twine boxes is good once the fibre glass side covers are lifted, and there is rubber sealing around the perimeter of the twine boxes for dust protection.

On top of the baler, a large, split cover sits over the knotters so operators can lift just the cover over the knotters or the entire cover if needed.

Twin hydraulic-drive fans provide air blasts to the knotters to prevent dust ingress.

The railing is adequate (folding for transport) and there is plenty of room to move around on the top of the baler.

The knotters are fitted with potentiometers which trigger an alarm in the cab but there are also lollipop style indicators to let the operator know of a knotter failure.

There are several mechanical redundancy systems on the baler in case of electronic failures and the needles have a traction bolt each for obstruction prevention. Changing the bolts out only takes about a minute.

**ACCESSORIES/CONTROL**

Weigh scales are standard fit and a small control panel at the rear of the baler with push buttons (not levers) can be used to raise and lower the tail gate and eject bales.

A rear steering axle can be manually locked but with the new SB model, that function can be actuated from the cab.

Auto greasing is also standard and the baler is fitted with a good selection of LED work lights at key points.

In cab control is via a virtual terminal called the CCI 1200 which is ISOBUS compatible however Kuhn is working on improvements to that system. The terminal can accept a camera feed while still displaying the main baler operating parameters.

The LSB 1290 iD weighs in at a fraction under 12 tonnes and a minimum of 147kW (200hp) from a tractor will be required to operate the baler.

**More details:** www.kuhn.com.au

**Price:** $264,000 plus GST as inspected

---

**485kg flywheel.**

**Auto greasing.**

**Knotters.**
Now entering its third season since being released in 2017, New Holland’s Belgium-made 1290 Plus baler sports several changes designed to increase bale density.

Most notable is the extension of the bale chamber by 800mm, a 30 per cent increase, designed to boost bale density by up to 10 per cent over previous models.

The 1290 Plus model produces a 1.2 x 0.9m bale, and the 890 Plus model the smaller 0.9 x 0.9m size. Maximum bale length is 2.6m. To operate the 1290, you will need a tractor of 120kW minimum.

FRONT END AND PICK UP

The 2.35m wide MaxiSweep pickup is chain driven and draws in crop with four tine bars which use a cam to retract the steel fingers. Plastic pickup segments now separate the tines, eliminating the lip on the edge of the steel segments and improving crop flow.

This also helps improve pickup tine life. Pickup height is regulated by a pin placed in the support frame of the jockey wheels. Crop is drawn in under a roller and fed to twin contra-rotating augers placed top and bottom, which feed crop into the rotor and knife assembly. The rotor has been beefed up and features a W pattern to spread the cutting load out over a full rotor revolution and is slip clutch protected.

Knives are spring loaded to avoid damage from foreign objects, and each knife adds an additional 3hp to the power required from the tractor. Minimum chopping length is 40mm and the length can be altered by removing knives as needed.

The knife draw slides out from the side once the pickup is raised and the cassette is lowered hydraulically to allow easy replacement of the 29 knives. This also allows pressure to be taken off the pre-chamber, acting a little like a drop-floor in the event of a blockage. Knives are now supplied hard-faced as standard.
Crop from the chopper is gathered by the six-tine stuffer fork into the bale pre-chamber, which is then delivered to the bale chamber once the desired biscuit size is achieved. The 800mm diameter flywheel operates the plunger at 48 strokes a minute, an increase in speed over the previous model. The plunger has been strengthened on Plus models to give a claimed 50 per cent increase in service life, and the gearbox has been strengthened as well.

Utilising the IntelliCruise system with an ISOBUS III tractor, the baler can control the ground speed of the tractor to produce a bale consisting of a predetermined number of biscuits. This is ideal in a patchy crop with inconsistent windrows. The tractor is able to speed up in light crop and slow down in a heavy crop.

Bale density is monitored by both the load on the plunger and a sensor on the completed bales, and automatically adjusted by hydraulic cylinders acting on the sides and top of the chamber. Sensors on the entry of the precompression chamber record crop entry, and the operator is alerted to drive either more left or right of the windrow to ensure even feeding across the width.

**KNOTTERS AND TWINE**

Deering-style knotters tie two knots on each of the six strings, producing a total of 12 residue tufts per bale. New Holland will be introducing a new loop knotting system shortly which will be residue free.

The 890 Plus balers tie with four strings. The knotter cover has been redesigned to reduce dust accumulation on the knotters by better sealing the area, and three electric fans are used to create a positive pressure inside the housing. As opposed to some other balers, lollipop indicators are still fitted, complimenting the IntelliView monitor to alert the operator of a knetter failure.

Bale length is measured both electronically and also with a star wheel and mechanical knetter trip arm, providing a level of redundancy in case of electronics failure. In fact most electronic controls can be overridden in the event of a monitor failure in the cab.

Bale length can be adjusted from in the cab, and the knetter mechanism can also be tripped to tie off a partially finished bale. A hydraulic-control station on the left (looking from the rear) side of the baler allows partially or fully-formed bales to be ejected, emptying the bale chamber.

There is quite a lot of room on top of the baler, and sturdy railings should allow access to most upper areas without risk of a fall. Twine boxes on each side of the baler contain 16 balls each and pivot out for cleaning or access to the baler internals from the sides. LED strip lights provide good illumination under the side covers and service lights are placed at the pickup, knotters and needle areas.

**ACCESSORIES/CONTROL**

As mentioned, the IntelliCruise system can adjust tractor travel speed in slice control mode to achieve a desired number of biscuits or slices per bale. The system can also be used in charge control mode on crop cutter models to keep the baler working at capacity by optimizing tractor speed. This is claimed to increase throughput by up to nine per cent and reduce fuel consumption by up to four per cent.

Bale weight is monitored through the standard ActiveWeigh system which comprises of load cells integrated into the tailgate. Bale weight, average and total weight and tonnes per hour are displayed on the IntelliView with a claimed accuracy of plus or minus two per cent.

Moisture is measured by electrical resistance between two star wheels which penetrate the bale either side at the rear of the bale chamber.

An inoculation system can be installed by the dealer, consisting of a tank and applicator placed next to the moisture sensor wheel. This can also be used for dye marking bales. A bale tagging system is also available as a dealer-fit option. A rear camera is fitted as standard equipment.

Servicing requirements are reduced by the use of a standard-equipment auto-greaser which handles the knotters and main moving parts, although there are still several daily grease nipples to attend to. An oiling system keeps the pickup and rotor drive chain lubricated. The drawbar height is adjustable and the manual jack stand can be optioned up to an optional hydraulic unit.

**More details:** agriculture.newholland.com

**Price:** $286,000 incl GST as inspected

© Kondinin Group – Reproduction in whole or part is not permitted without permission. Freecall 1800 677 761
Massey Ferguson 2370 Ultra HD

Massey Ferguson’s 2370 Ultra HD baler is the latest from the AGCO stable, and is made at its Hesston factory in Kansas where the brand has been making hay gear for more than 70 years.

The heritage is reflected in the overall build quality of the Massey Ferguson which impressed Kondinin Group’s research team on inspecting the six-string baler. The knotters are a completely new design to match the Ultra baler’s capacity but do produce a small amount of residue with each knot tied.

Weighing in at 13,400kg, the Ultra HD makes bales of 1.2 x 0.9m tall with lengths of 1.0 – 2.74m. A 225kW (300hp) tractor is the minimum required to run the Ultra HD.

FRONT END AND PICK UP

One of the key changes to the Ultra HD compared with the previous XD model is a re-designed step-up gearbox which is called the Ultra gearbox.

From a PTO speed of 1000rpm, the Ultra gearbox has the 500kg flywheel turning at 1500rpm, generating 130 per cent more energy than on the XD.

The energy boost has the UltraPress plunger working at 50 strokes/minute delivering 760kN of force. An automatic cam clutch provides protection for the gearbox, doing away with the need to replace shear bolts in case of an overload.

The OptiFlow pick up is rated at (DIN) 2.25m wide and has five tine bars fitted with a total of 80 double tines. It’s a chain and sprocket drive system with a slip clutch and overrun clutch. Floatation is assisted by dual extension springs and the chains and sprockets are auto oiled.

Plastic stripper bars have replaced steel ones which should be better able to handle punishment from stones and other paddock debris.

A full width, powered top auger works with the cross augers to feed material into the pre compression system. A manual jack is standard with hydraulic jack an optional extra.

WHAT WE LIKED

✓ General build quality
✓ Open, clean space on top of baler
✓ Poly plastic wrapper/stripper bands on the pick up
✓ Pick up visibility from tractor cab

WHAT COULD BE BETTER

✗ Roto cut option not available until next year
✗ Twine residue from knotting
PACKING, BALE CHAMBER AND PRE-CHAMBER

Massey Ferguson claims the Ultra HD’s packer fork works 14 per cent faster than the XD’s to feed material into the pre-chamber. Flywheel protection comes via a torque-limiting clutch.

Control of the bale density is fully automatic via Massey Ferguson’s BaleCreate interface which works in conjunction with sensors on the plunger’s con rods (left and right-hand sides) and adjusts the bale chamber’s side doors and top press.

The bale chamber itself is 4.0m in length (20 per cent longer than on the XD) and 178mm diameter hydraulic rams (density rams) connect top and bottom members of the bale chamber density system.

For bale ejection, the selector wheel has 12 teeth and there are four selectable “rows”. Bale ejection can be from the cab or manually at the rear of the baler for shorter bales. The drop-down tail gate is standard with load cells and the Ultra HD uses fabric webbing straps instead of chains to support the rear chute which should make the baler quieter to operate.

Folding the rear tail gate up can be done from the tractor cab but a safety lock must be actuated manually before the rear chute can be folded down.

KNOTTERS AND TWINE

Twine capacity is 36 balls (18 each side) and the small twine holder platforms are angled up (30 degrees) to make access and tying twine easier.

The large side covers lift to be above head height and strip LED work lights for the twine boxes are standard fit.

A hex head shaft needs to be cranked to release the side covers and there is a long-threaded bar which requires cranking to tilt the twine box away from the baler for service access to the bale chamber area. A rattle gun would make the cranking quicker but access to the lower bale chamber area is good.

The double-knot knotters, which leave twine residue, are lubricated with oil via a self-contained system with the oil tank and cooler located at the front of the baler. Knotters are spaced 176mm apart and a lateral fan (hydraulically driven) aids in keeping debris away from the knotters.

Plunger needle slots are fitted with brushes to help minimise debris ingress.

Access to the top platform is via a sturdy ladder and there is ample room around the knotters to access them for maintenance. Railing is around the full perimeter of the upper area.

ACCESSORIES/CONTROL

Transport width is 3.0m with the standard dual axles fitted with 620/55-26.5 tyres.

Hydraulic brakes are standard and the baler is rated for a road speed of 60km/h.

A small toolbox is fitted and the baler is reasonably easy to fit with aftermarket systems such as a Gazeka moisture meter.

AGCO’s BaleCreate interface provides ISOBUS compatibility with either a C1000 (seven-inch colour touch screen) or C2100 (12-inch) terminal. The screen shows a bird’s eye view graphic of the baler.

More details: www.masseyferguson.com.au

Price: $401,000 incl GST as inspected

© Kondinin Group – Reproduction in whole or part is not permitted without permission. Freecall 1800 677 761

www.farmingahead.com.au

No. 118 November 2019 Research Report 19
John Deere L300 and L600

While dealers report comparatively low sale volumes of L300 John Deere large square balers, there is a new model known as the L600 about to be launched.

The outgoing L341 is built in the John Deere Ottumwa plant and based on a Kuhn design which was re-engineered for the United States, Australian and Asian markets. The 341 has a 2.2m wide low-profile pickup and a 2.5m wide pickup is optionally available.

Double-tie knotters are standard with screw adjustment rather than shims and the knotting system is gear and driveline driven to maintain needle-to-plunger timing. The L300 series are fitted with an auto-lubrication system. Bale length can be adjusted from the cab as can last bale tie-off.

The L300 series are ISOBUS compatible with tractors. Non ISO tractors require the purchase of a John Deere GreenStar display and a conversion harness to the baler. The ISOBUS display includes electronic knotters flags, flywheel brake feedback, chopper functions, greasing, lighting bale chute, bale drop, bale weight and bale moisture.

The L600 will be officially launched at Agritechnica in Germany this month. The series comprises three models; L624 (0.7 x 1.2m), L633 (0.9 x 0.8m) and L634 (0.9 x 1.2m).

A 2.3m wide pickup is standard with 10mm steel finger rake tines and hydraulic load sensing.

Bale weights are promised to increase by five per cent while existing rotor options, the RotoFlow HC and MaxiCut HC will continue to be offered. A heavy-duty RotoFlow rotor diameter has been increased by 25 per cent and is available on the L624 and L634 models.

The flywheel weight has burgeoned by around 64 per cent to 468kg on the L624 and L634, driving chamber pressure from 180 to 210 bar.

The beefed-up L600 series will keep the 23-knife chopper found on the L300 series allowing 0, 11, 12 or all 23 knives to be engaged from the cab via an ISOBUS display.

Kondinin Group researchers will bring readers more information from the launch.
Paul Hicks at Pingrup in Western Australia has doubled the efficiency of his hay baling operation with the addition of a CN Nadal baler-mounted rake. Photo courtesy Paul Hicks

A terrific example of this approach is Paul Hicks, Pingrup, Western Australia, who uses a unique all-in-one combination of baler and rake which can deliver a high density bale of export oaten hay every 27 seconds.

This level of performance is made possible by using a baler-mounted, Spanish-built 12m rake with an 11.5m effective reach to incorporate three rows of hay cut at 10.97m (36 feet) swaths.

Paul says that on low-yielding crops of 2-2.5t/ha, the reach of the rake makes it viable to run larger balers like the Krone BigPack 1290 HDP II XC.

The Spanish-build 12m CN Nadal basket rake is hydraulically driven and features a top cross auger feeding the Krone eight-stringer at an impressive rate. Paul says the churn of bales helps keep depreciation and paddock time to a minimum and frees up the baler to go onto neighbour contracting duties in an effort to have the machine earn its keep. Paul says that without the rake, the economics of such a big baler may not stack up in their scenario.

And while on the topic of stacking, the raking and baling combination has a Jadan three-bale stacker bringing up the rear, making bale gathering three times more efficient.

Paul also runs a 12m Berrima Engineering hay rake which he reports works really well, but points out the difference between the machine-mounted Nadal with the top-cross auger and the hoops on the Berrima.

Paul says that 12-13km/h was found to be the limit of performance, mainly governed by tractor horsepower in the 3t/ha export oaten hay crop baled in Pingrup Western Australia.

The baler-mounted rake is pulling together four 4.9m (16 feet) wide windrows to feed the baler. While this might be achievable with a conventional tractor-pulled rake before baling, clearance under the tractor would quickly become problematic. This is alleviated with the CN Nadal rake pulling material in behind the tractor.

Paul says that the configuration has allowed two of his staff to be freed up for other jobs at hay-making time, driving trucks and keeping the show rolling. He says that while it may not be the case for higher rainfall areas, in their operation the baler-mounted rake is a total game changer.

More information:
Agriparts and repairs 08 9362 6811
www.agriparts.com.au

Spreading the wings to beat depreciation

Finishing hay baling as quickly as possible is at the forefront of most hay producers’ minds. Firstly, the cut hay quality risk is reduced by a prompt baling program. Secondly, but equally important, is minimising machine depreciation by pushing through large numbers of bales in a short timeframe to extract maximum value from a machine which may cost over $350,000.
<table>
<thead>
<tr>
<th>Brand/Model</th>
<th>Baler weight (kg)</th>
<th>Bale height and width (cm)</th>
<th>Bale chamber length (mm)</th>
<th>Tractor power requirement kW (min)</th>
<th>Transport width (m)</th>
<th>Overall length (tailgate down) m</th>
<th>Pick up width (m)</th>
<th>No. cutting knives (opt)</th>
<th>Knots per string (double/single)</th>
<th>Twine offcut from knotting</th>
<th>Twine capacity</th>
<th>Strokes per min</th>
<th>Flywheel weight (kg)</th>
<th>In cab monitor/controller ISOBUS (Y/N)</th>
<th>Load cells (Y/N/opt)</th>
<th>Auto lube (Y/N/opt)</th>
<th>RRP incl GST ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case IH</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LB 434 XL</td>
<td>11,500</td>
<td>90 x 120</td>
<td>3340</td>
<td>PTO 97 (Std), 119 (LB434R XL)</td>
<td>2.88 (std) 2.94 (LB434R XL)</td>
<td>10.8</td>
<td>2.23 (std) 2.35 (LB434R XL)</td>
<td>Max 29 – configurable on LB434R XL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CLAAS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QUADRANT 5200</td>
<td>8120 – 9850°</td>
<td>70 x 120</td>
<td>3850</td>
<td>112 min</td>
<td>2.99</td>
<td>9.32</td>
<td>2.35</td>
<td>0 (RF) 0/12/13/25 (RC) 0/13/25/26/51 (FC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QUADRANT 5300</td>
<td>10510 – 12240°</td>
<td>90 x 120</td>
<td>3850</td>
<td>134 min</td>
<td>2.99</td>
<td>9.86</td>
<td>2.35</td>
<td>0 (RF) 0/12/13/25 (RC) 0/13/25/26/51 (FC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Krone</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIG PACK 1290 HDP II</td>
<td>14,200</td>
<td>90 x 120</td>
<td>3200</td>
<td>170</td>
<td>3</td>
<td>10.8</td>
<td>2.35</td>
<td>26 opt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIG PACK HDP 1290 High Speed</td>
<td>12,000</td>
<td>90 x 120</td>
<td>3200</td>
<td>130</td>
<td>2.995</td>
<td>8.75</td>
<td>2.35</td>
<td>26 opt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIG PACK HDP 870 High Speed</td>
<td>9,000</td>
<td>70 x 80</td>
<td>2700</td>
<td>105</td>
<td>2.55</td>
<td>9.71</td>
<td>2.35</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIG PACK 4x4</td>
<td>13,100</td>
<td>120 x 120</td>
<td>3200</td>
<td>164</td>
<td>2.995</td>
<td>10.85</td>
<td>2.35</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Kuhn</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LSB 1290 iD OPTIFFED</td>
<td>11,700</td>
<td>90X120 segment (90X118 real)</td>
<td>3750</td>
<td>134</td>
<td>2.92 (3.00m)</td>
<td>9.72</td>
<td>2.3</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LSB 1290 iD OMNICHUT 23</td>
<td>12,400</td>
<td>90X120 segment (90X118 real)</td>
<td>3750</td>
<td>150</td>
<td>2.92 (3.00m)</td>
<td>9.72</td>
<td>2.3</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB 1290 iD OPTIFFED</td>
<td>11,700</td>
<td>90X120 segment (90X118 real)</td>
<td>3750</td>
<td>134</td>
<td>2.92 (3.00m)</td>
<td>9.72</td>
<td>2.3</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB 1290 iD OMNICHUT 23</td>
<td>12,400</td>
<td>90X120 segment (90X118 real)</td>
<td>3750</td>
<td>150</td>
<td>2.92 (3.00m)</td>
<td>9.72</td>
<td>2.3</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Massey Ferguson</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2370 Ultra HD</td>
<td>13400</td>
<td>87.5 x 120.0</td>
<td>4000</td>
<td>224</td>
<td>2.99</td>
<td>11.83</td>
<td>2.65</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>New Holland</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1290 Plus</td>
<td>11,500</td>
<td>90 X 120</td>
<td>3340</td>
<td>119</td>
<td>2.94</td>
<td>10.8</td>
<td>2.35</td>
<td>29 STD on Rotor cutter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Depending on Options (Single or Tandem Axle, Rotor feed or Rotor cut)  
** RF – Rotor Feed, RC – Rotor Cut, FC – Fine Cut **
<table>
<thead>
<tr>
<th>Brand/Model</th>
<th>Twine offcut from knotting (Y/N)</th>
<th>Twine capacity</th>
<th>Strokes per min</th>
<th>Flywheel weight (kg)</th>
<th>In cab monitor/controller</th>
<th>ISOBUS (Y/N)</th>
<th>Load cells (Y/N/opt)</th>
<th>Auto lube (Y/N/opt)</th>
<th>RRP incl GST ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knots per string (double/single)</strong></td>
<td><strong>Twine offcut from knotting (Y/N)</strong></td>
<td><strong>Twine capacity</strong></td>
<td><strong>Strokes per min</strong></td>
<td><strong>Flywheel weight (kg)</strong></td>
<td><strong>In cab monitor/controller</strong></td>
<td><strong>ISOBUS (Y/N)</strong></td>
<td><strong>Load cells (Y/N/opt)</strong></td>
<td><strong>Auto lube (Y/N/opt)</strong></td>
<td><strong>RRP incl GST ($)</strong></td>
</tr>
<tr>
<td>Double</td>
<td>N for MY2020 with TwinePro</td>
<td>32</td>
<td>48</td>
<td>265</td>
<td>Y</td>
<td>Y</td>
<td>Y (grease and oil)</td>
<td></td>
<td>249,950 (Std)</td>
</tr>
<tr>
<td>Double</td>
<td>No twine residues</td>
<td>24</td>
<td>56</td>
<td>219</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>From 272450</td>
</tr>
<tr>
<td>Double</td>
<td>No twine residues</td>
<td>24</td>
<td>46</td>
<td>290</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
<td>From 277200</td>
</tr>
<tr>
<td>Double</td>
<td></td>
<td>54</td>
<td>45</td>
<td>608</td>
<td>CCI 1200 opt</td>
<td>Y</td>
<td>Y std</td>
<td>Y std</td>
<td>384,450</td>
</tr>
<tr>
<td>Double</td>
<td></td>
<td>32</td>
<td>45</td>
<td>608</td>
<td>CCI 1200 opt</td>
<td>Y</td>
<td>Y std</td>
<td>Y std</td>
<td>312,950</td>
</tr>
<tr>
<td>Double</td>
<td></td>
<td>32</td>
<td>45</td>
<td>608</td>
<td>CCI 1200 opt</td>
<td>Y</td>
<td>Y std</td>
<td>Y std</td>
<td>227,150</td>
</tr>
<tr>
<td>Double</td>
<td></td>
<td>32</td>
<td>45</td>
<td>608</td>
<td>CCI 1200 opt</td>
<td>Y</td>
<td>Y std</td>
<td>Y std</td>
<td>358,050</td>
</tr>
<tr>
<td>Double (Rasspe HDC)</td>
<td>Y</td>
<td>30</td>
<td>46</td>
<td>485</td>
<td>ISO tractor - CCI 50 – CCI 1200</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>291,250</td>
</tr>
<tr>
<td>Double (Rasspe HDC)</td>
<td>Y</td>
<td>30</td>
<td>46</td>
<td>485</td>
<td>ISO tractor - CCI 50 – CCI 1200</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>327,884</td>
</tr>
<tr>
<td>Double (Rasspe HDC)</td>
<td>Y</td>
<td>32</td>
<td>46</td>
<td>485</td>
<td>ISO tractor - CCI 50 – CCI 1200</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>TBC</td>
</tr>
<tr>
<td>Double (Rasspe HDC)</td>
<td>Y</td>
<td>32</td>
<td>46</td>
<td>485</td>
<td>ISO tractor - CCI 50 – CCI 1200</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>TBC</td>
</tr>
<tr>
<td>Double</td>
<td></td>
<td>36</td>
<td>50</td>
<td>500kg @ 1500rpm</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>401,810</td>
</tr>
<tr>
<td>Double</td>
<td></td>
<td>48 @ 1000 PTO RPM</td>
<td>265</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y (opt)</td>
<td></td>
<td>Approx 265,000 depending on dealer</td>
</tr>
</tbody>
</table>

© Kondinin Group – Reproduction in whole or part is not permitted without permission. Freecall 1800 677 761
Browse through our variety of practical manuals, the popular *Workshop Series*, educational resources about farming and agriculture and much more on the **Kondinin Group Bookstore**!

www.kondininbookstore.com.au