

FARM MACHINERY

JOURNAL

December 2022 // Issue 104

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December 2022
Issue 104

COVER IMAGE
Simon Henley



Welcome

to *Farm Machinery Journal*, the monthly magazine
dedicated to modern agricultural equipment.

Last month I was speaking with a farmer about the pace
of innovation in farm machinery. Dave is a loyal John
Deere customer but the company's most recent tractors
have him scratching his head. Does he really need all
of the gadgets and technology? Will it come in useful
down the line? This led us on to a different subject.

"What invention would really help you to farm more
efficiently?" I asked. Dave thought for a minute, scratched
his beard, and responded with a wry smile: "a crystal ball".
Dave's logic was spot-on. "I'd always be one step ahead," he
exclaimed. "I'd know what the weather was doing, I'd know
what the markets were doing, and I could make much
more informed decisions in terms of buying machinery."

Just about everyone in farming will have wished for a
crystal ball at one stage or another. Instead, manufacturers
are developing ways to use data and information to help
customers make decisions. John Deere is at the forefront
of this, it's latest event in Germany revealing some clever
new ideas to help farms be more efficient and, importantly,
more sustainable. One important message that we took
away from the event (read more on p46) is that John

Deere is not telling farmers how to farm,
but instead encouraging them to use
information they have at their
disposal to farm more efficiently.



So, while a crystal ball might be
a bit of a long stretch, there is
something already around that
we can all use to take some of
the guesswork out of farming -
data. Yes, Dave, the technology
might just come in very useful.

Peter Skilton, Editor

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COVER STORY



A LONG WAY TOGETHER



RIDEMAX FL 693 M

No matter how challenging your needs, RIDEMAX FL 693 M is your best ally in applications with trailers and tankers. The radial construction, excellent self-cleaning properties, low rolling resistance and the speed index classes D/E make RIDEMAX FL 693 M perfect for road transport (up to 75% of use). Its reinforced bead and steel belts ensure enhanced durability.

RIDEMAX FL 693 M is BKT's response in terms of transport applications mainly on asphalt, in the agricultural sector.



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Case IH's two new Farmall A tractors offer power outputs of 90hp and 100hp



Case IH unveils two Farmall A tractors

Case IH has launched two new Farmall A tractors, the 90hp 90A and 100hp 100A, that form part of the company's extended Farmall range from 55hp to 120hp.

The models are powered by the new four-cylinder, 3.6-litre FPT F5 engine. With common rail fuel injection and four valves per cylinder, it provides 380Nm and 450Nm at 1300rpm in the Farmall 90A and Farmall 100A, respectively. The 47 per cent torque rise delivers strong lugging ability in high-load situations.

The FPT F5 is also claimed to be highly fuel efficient, which, combined with the larger 130-litre fuel and 14.4-litre AdBlue tanks, means more time can be spent working before refuelling. Another significant benefit is the 600-hour service interval that minimises downtime and maintenance costs.

A key feature of the engine is its efficient

and maintenance-free after-treatment system. Developed to meet Stage V regulations, the Compact Hi-eSCR2 emissions reduction technology requires no filter replacement or mechanical cleaning. It integrates a diesel oxidation catalyst, a diesel particulate filter and a selective catalyst reduction system that is very compact due to an exhaust gas recirculation rate of less than 10 per cent.

This advanced technology is contained

under the engine hood with no external components, a design that also maximises ground clearance and provides excellent forward visibility.

Power is transmitted through a simple, efficient, dependable and durable 12x12 40kph mechanical transmission or optional hydraulically actuated Powershuttle. A 20x20 creeper transmission option is also available.

The rear linkage on the new models has a maximum lift capacity of 4400kg, while the Case IH Lift-O-Matic system offers fast raising and lowering of implements to pre-set positions on headlands.

Both tractors can also be specified from the factory with loader-ready brackets and hydraulics. Matched with the Case IH L3815A front loader, which has a simple plug-and-play design, the combination offers a lift height of up to 3.8m and a maximum capacity of 1922kg.



Above: Case IH's new Farmall A models join a range of tractors that already extends from 55hp to 120hp

JCB'S NEW MOBILE HYDROGEN TANKER



JCB has unveiled a mobile refueller that provides a quick and easy way for customers to refuel their hydrogen-powered machines.

About 97 per cent of construction machines have fuel delivered to them while working on-site and customers are accustomed to refuelling being able to take place in minutes.

"Since we became the first construction equipment company to unveil machines powered by hydrogen, many have asked how they can be refuelled," commented

JCB chairman Lord Bamford, who is leading the hydrogen project.

"Well, now we have an answer with our new mobile hydrogen refuelling system that allows the fuel to be taken from on-site tube trailers and distributed to machines."

JCB is investing £100 million in a project to produce efficient hydrogen engines and has already showcased working prototypes of a backhoe loader and Loadall telescopic handler powered by the fuel.

New rollerbed option for Vervaet's harvesters

Vervaet has introduced a rollerbed option for its popular Q-616 sugar beet harvester. It follows the launch of this primary-cleaning option for the six-wheel Beet Eater 625 for the 2021 beet campaign.

The new rollerbed replaces the Q-616's two front turbines, although it is not intended as a replacement for a turbine-only set-up. Instead, it offers another purchase option for customers already operating a rollerbed harvester.

The rollerbed boasts seven full-width 100mm-diameter rollers. The roots are taken outwards for maximum cleaning before being gathered back in the centre of the table. Roller speed can be varied from the cab, and the seventh roller is controlled independently.

Unlike all other rollerbed-type harvesters on the market that use an elevator trace to transport the crop between the front wheels, the Vervaet design utilises a central cleaning turbine, eliminating a potential problem area and continuing the positive cleaning action.



Above: The rollerbed uses seven 100mm-diameter rollers

CARRARO AGRICUBE PRO GETS NEW FPT POWER UNIT

The latest range of Carraro Agricube Pro specialist vineyard and orchard tractors has been launched with FPT's new Stage V F28 diesel engine, the first time the power unit has been used in an agricultural application. Designed to produce up to 102hp at 2300rpm and 415Nm at 1500rpm, this 2.8-litre engine can deliver the same performance as a traditional 3.4-litre but only takes up as much space under the bonnet as a 2.0-litre power unit.

The F28's entire exhaust gas after-treatment system is contained in a single module under the bonnet to reduce dimensions further and ensure optimum visibility for the driver. This compact, high-power density and impressive fuel efficiency explain its selection by Carraro for the company's 72hp, 92hp and 102hp tractors.



KVERNELAND PUTS LATEST ECOMAT PLOUGH TO WORK

Kverneland has been previewing its new 10-furrow Ecomat on-land shallow plough in the UK ahead of its 2023 launch. Developed as an option for minimum disturbance seedbed preparation, the Ecomat provides mechanical control of pests and weeds through soil inversion, reducing reliance on chemical methods.

This latest version of the Ecomat enables high-efficiency shallow ploughing at working depths from 6.0cm to 18cm. As a result, output is much higher than conventional soil inversion methods, while fuel consumption per hectare is also reduced.

Furrow widths are mechanically adjusted from 30cm to 50cm, creating a range of working widths from 3.0m to 5.0m, while the plough's 65cm point-to-point clearance contributes to a compact overall size for a fully-mounted implement.

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TYRES

Fendt moves loader wagon production

Fendt has opened a new loader wagon production facility at its Wolfenbüttel round baler plant in Germany. Agco/Fendt acquired the Lower Saxony plant from Welger Werke in 2017. Since then, more than €20m have been invested in building a development and production site both for round balers and loader wagons.

The original round baler production process has been rebuilt and reconfigured, and all models are now assembled on one production line. The same is true for loader wagons, as one line now turns out eight series and 25 different loader wagon models.



ROMETRON INTRODUCES RED WEED-IT SOLUTION



Selective weed spraying specialist Rometron has introduced Weed-It Quadra Red, a solution that employs red LEDs as a lighting source instead of the traditional blue LEDs.

The problematic availability of blue LEDs prompted the move, but testing the new system in greenhouses has shown the new red LEDs outperform other LED colours, including blue, on consistency, efficiency and predictability.

Thanks to these results, Rometron has now switched to red LEDs for its Weed-It Quadra technology that allows farmers to adopt green-on-brown spot spraying that can help save up to 90 per cent on chemical costs.



PÖTTINGER LAUNCHES WIDER AEROSEM VT 6000 SEED DRILL

Following the success of the company's 5.0m Aerosem VT trailed pneumatic seed drill, Pöttinger has now launched a version with a 6.0m working width. When used with active tillage, the new Aerosem VT 6000 DD combines maximum output with excellent flexibility, not to mention optimum seed placement.

The longitudinally mounted pressurised hopper now has a capacity of up to 4600 litres (the 5.0m version holds 2800 litres). The hopper is divided 50:50 along the direction of travel in a configuration that enables seed and fertiliser, or only seed, to be loaded more easily.



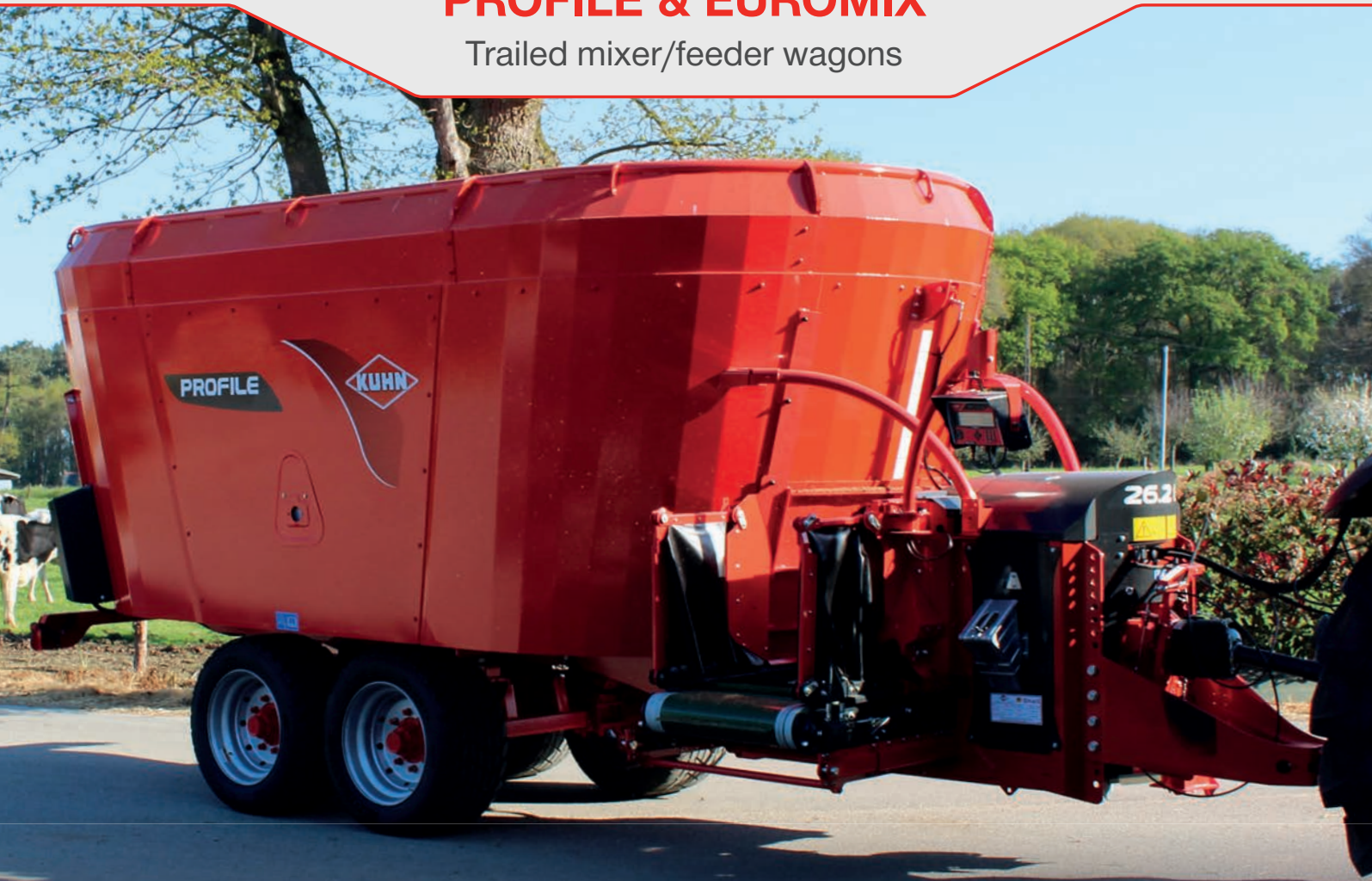
TRAMSPREAD'S SAFER DRIBBLE BAR SYSTEMS

Tramspread has launched a range of tanker-mounted applicators that reduce the weight stress on the rear door for safer slurry spreading. The new Suffolk dribble bars use similar technology to their umbilical systems, but are attached to tankers with a unique mounting method.

The firm welds fixing points on the rear of the tanker that the boom framework attaches to using telescopic arms. This balances the load more safely and makes the booms more stable. The design means larger booms can be fitted to smaller tankers without significant modifications, speeding up application rates and improving accuracy.

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PROFILE 1



PROFILE 2



EUROMIX 3

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ASC set to distribute AgXeed

AS Communications has been appointed as a distributor of AgXeed autonomous tractors in England and Wales. AgXeed's products will be distributed through a dedicated team operating under the ASC Autonomy brand.

The move follows AgXeed's June 2022 announcement that AgBots UK had been appointed distributor for most of England and Wales.

Asked about the new appointment, AgXeed's chief commercial officer, Anastasia Laska, told *FMJ*: "We're still allied with AgBots UK, but not in the function of a fully-fledged distributor."



OLIVER LANDPOWER GROWS JCB TERRITORY

JCB dealer Oliver Landpower has completed its acquisition of neighbouring agricultural machinery dealership LQG Agri. The deal expands the company's territory westwards into Warwickshire and adds a fourth branch to Oliver Landpower's sales, parts and service network, as the dedicated JCB location at Upper Quinton now operates as Oliver Landpower Stratford.

The firm's operations will also expand eastwards at the beginning of 2023 when it takes over JCB's Essex territory, operating from a site at Colchester.

AGCO AND BLICKFELD WORK TO IMPROVE FARMING EFFICIENCY

Agco is working with Blickfeld, a Munich-based manufacturer of holistic 3D LiDAR sensor solutions, to explore the use of these sensors for the automation of tractors and harvesting machines.

By using Blickfeld's LiDAR technology in innovative digitisation solutions, the development of autonomous harvesting functions is expected to drive sustainability and operational efficiency in agriculture.

Unlike cameras, 3D LiDAR sensors reliably capture the environment in three dimensions, even in challenging environments and operating conditions, opening up many potential applications.



NEW LANTRA COURSE ADDRESSES CHILD SAFETY



Lantra has launched a comprehensive free course aimed at ensuring the safety both of children and those visiting farms who may not be familiar with the environment.

The training organisation's Child Safety on Farms course helps ensure parents are aware of the inherent dangers. The robust course covers children on the farm and the law, children and tractors, children and ATVs, and children and falls.

It also covers other issues including child safety around equipment, harmful substances and the importance of having a farm safety checklist.

NEWSINBRIEF

Kubota warranty options extended to 6000 hours

Kubota Care tractor warranty packages now include a five-year term with up to 6000 hours of protection on M6 and M7 tractors, 1000 hours more than before.



Upgraded BobCare programme launched

Bobcat's new BobCare Planned Maintenance (PM) programme now allows machine servicing or maintenance to be carried out at any UK dealership. The scheme offers users a fixed contract price for up to five years or 5000 hours.



McCormick appoints new Cumbria dealer

Penrith-based Burrow & Rutter-Armstrong is the latest McCormick dealer as the brand fills the remaining gaps in its UK coverage.



TAG confirms new Shropshire team

Tallis Amos Group (TAG) has named James Potter as depot sales manager for its new site at Allscott. He will be joined by salesmen Gareth Williams and Dan Mallard.



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 RURAL FINANCE



JOKER IN THE PACK

As the potato harvester leaves the field, autumn cultivations and drilling step up a gear at the 950-acre, family-run Brobury Farms near Hereford. A 3m Horsch Joker with TG bar carries out deep loosening and mixing of trash and stubbles ahead of the farm's 3m Amazone Centaya 3000 Super and KG 3001 power harrow drill combination.

"One deep pass with the Joker is enough to set our soils up for drilling after potatoes," explains Charlie Blandford, who runs the farm alongside his brother Dave. The brothers prefer min-till for almost all their seedbeds, reaching for the plough only after long-term leys.

All power requirements are met using a fleet of three 170hp Kubota M7 tractors in Premium specification with KVT transmissions. "There's enough performance from the four-cylinder engine to run the power-harrow drill effortlessly at 10-12kph behind the cultivator," Charlie adds. "It doesn't take much to finish the seedbed, particularly on our grade one soils."

IMAGE GEOFF ASHCROFT





Cultus HD

The new Cultus HD 425-525

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Duty calls

COVER STORY

The T7.315 HD is the ultimate tractor in the New Holland T7 line-up, now featuring a host of updates, including a new cab introduced last year. *FMJ* put the latest version through its paces at our test farm in Leicestershire

WORDS AND IMAGES SIMON HENLEY

T

he first encounter *FMJ* had with the latest New Holland T7 Heavy Duty was last summer, when the range-topping T7.315 HD made its debut at Tillage Live. Not only were we impressed by its high level of specification, but also the new Horizon Ultra cab.

Mechanically, the new T7 HD is pretty darn similar to the previous version, however all that ends with the new cab. Redesigned to provide additional room for the operator and increased storage space, it is longer and features a wider door for improved access, a higher windscreen with a panoramic wiper and a lower fender profile for improved rearward visibility. Underneath, there has been a full revamp of the wiring logic and hydraulics, including a move to Bosch remote valves with pressure release levers.

Inside, the trim has been upgraded to a standard of fit and finish far beyond what you'd expect to find in a tractor. The driver is cocooned in a blue and grey leather upholstered Dynamic Comfort seat, which features an integrated climate control system. The grey leather steering wheel has blue stitching and even the buddy seat is leather. In short, it's nothing short of fabulous.

Of course, a fabulous cab is all well and good but you still require the control systems to operate smoothly and, even more importantly, it all needs to be part of a package that can perform as expediently as its muscle-bound styling suggests.

Autumn tillage

Having waited several months to get our hands on one, we were literally delighted to put the new T7.315 HD to work when it arrived during the first week of September. Our host farmer Ashley Davies had finished combining and the autumn tillage campaign was already under way.

The key player in the evaluation of this tractor would be Jason Hamilton, who has worked with Ashley for the past decade. Jason has always been our go-to man for New Holland and Case IH field tests, primarily because of his experience working with CNH tractors in the past.

The tractor's primary objective would be pulling a Simba 4.6m Unipress behind a 4.0m Sumo Trio. ▶

TECH SPECS

New Holland T7.315 HD AutoCommand
Engine FPT 6.7-litre, 6-cyl, Stage V
Rated power 300hp
Max power 313hp
Torque 1282Nm @ 1400rpm
Transmission CVT, AutoCommand
Speed 0.03-50kph @ 1600rpm
Hydraulics 165L/min (220L/min optional)
Max lift 11,058kg
Turn radius 5.7m (unbraked)
Weight 10,500kg (shipping)
Retail price £270,697.00

The big New Holland proved to be an extremely capable tractor in the field, however its limited steering lock required wider headland turns



"If it were possible to lasso the moon the T7.315 HD could pull it closer to the earth"



Left: Jason Hamilton cited the T7 CommandGrip joystick as more intuitive to use than many competitive systems

► It's a cultivation train *FMJ* has used extensively for tractor testing in the past because it's used as part of Ashley's autumn cultivation tillage programme. A John Deere 8420 powered by an 8.1-litre, 270hp engine (314hp max) usually pulls the Sumo-Simba combination. It's an old-school brute that bellows enthusiastically when you pour on the coal, belching black smoke into the air and barking like an angry dragon when running at full tilt.

Equipped with a 16-speed powershift, dual rear-wheels harness the 8420's power. It is unquestionably on top of the job but on heavy ground the high draft load of both implements makes the old lady work hard for her keep.

In terms of power, the New Holland is powered by FPT's 6.7-litre, Stage V engine producing 300hp (313hp max). That's pretty much on par with the old Deere, but where the



This picture and above inset: Central tyre inflation system allows pressures to be controlled via the terminal. All T7 HDs can be ordered CTIS ready. A higher capacity compressor can also be specified

Left: Refined interior includes a fantastic driver's seat. Under the buddy seat is a built-in cooler box

Below left: The driver can't see the front linkage without the optional camera



new kid on the block really wins this contest is in the torque department. How does 1282Nm at 1400 rpm grab you?

Let's get straight to the point. If it were possible to lasso the moon the T7.315 HD could pull it closer to the earth. Rarely have we been as impressed by the tractive power of a 300hp machine as we were with the T7. But since it's Jason Hamilton who's evaluating this tractor, you'll have to keep reading.

With the New Holland hooked up to the Sumo we initially used it without the Simba press so we could familiarise ourselves with the tractor's operating systems. This was a short-lived trial. With the Sumo dropped into maximum depth the big T7 poured all over the job like a cup of coffee. Obviously it was up to the task, so we returned to the yard and attached the press.

Quiet and supportive

With the cultivation train attached, Jason spent a day getting used to the tractor, making some preliminary notes about its performance. "I can't believe how quiet it is," he exclaims. "It's so quiet in the cab it's hard to believe it's working. The seat is also worthy of praise. It is extremely supportive and it has enough adjustment so you can set it to where it's perfectly comfortable.

"This tractor features the redesigned SideWinder Ultra armrest along with the 12in IntelliView display monitor. The armrest has eight programmable switches, which you can configure to individual operator preferences. "There are also five electronic LED colour-coded spool valve switches, which can be reassigned as required to suit individual preference or a specific task. I'm a bit old-fashioned. ▶

"I think New Holland has really taken operator comfort to another level"



Jason Hamilton praised the automotive feel of the T7's steering at high speed and the comfort provided by the front axle and cab suspension



Above inset: New Holland product demonstrator Stephen Loughnane spent six hours helping set up the tractor and giving us instruction on how to use its various systems. Top man!

Below inset: "The New Holland T7.315 HD has one of the best engine and transmission combinations in this horsepower class," says operator Jason Hamilton



► I really liked their positioning and actually set up the cultivator hydraulics using these switches rather than assigning any functions to the CommandGrip joystick.

"I should mention that the armrest provides a full range of adjustment, which is important when you have multiple operators of different sizes. I like this because not only are you seated comfortably, but it can be adjusted so the controls are positioned exactly where you want them. I think New Holland has really taken operator comfort to another level with this tractor."

Watching the T7 power across the field revealed it is the complete antithesis of Ashley Davies' John Deere 8420. The big T7 pulled the cultivator combo in relative silence, with no visible signs of duress or complaint, even though its Michelin 710R42 AxioBib 2 rear tyres were rippling as they cut into the sun-baked soil.

Central tyre inflation

Our test tractor was equipped with a PTG central tyre inflation system from Michelin, which allows tyre pressures to be controlled through the ISOBus window on the control terminal. You can control front and rear tyre pressures independently, and there's a built-in safety feature that starts to re-inflate the tyres once the tractor's speed exceeds 20kph.

On the advice of New Holland

product demonstrator Stephen Loughnane, who spent several hours helping us set up the tractor, we reduced the tyre pressures to 0.8bar. The effect on performance was immediate and ride quality across the field was notably improved.

The T7.315 HD is equipped with New Holland's AutoCommand CVT transmission system. Getting the best out of the engine and transmission can be achieved in a couple of different ways, such is the flexibility of the tractor. "The engine and gearbox combination on this tractor is fantastic," Jason Hamilton explains.

"The transition between the joystick and throttle pedal is utterly seamless and the level of proportional control is on par with anything else we've tested.

"While I had the tractor working, I initially set a working target speed of 14.0kph and a turn-round speed for the headlands of 10.0kph. This is very easy to set up and you can leave the tractor to sort itself out as the engine responds to the load. This is also the preferred method that Stephen from New Holland encouraged me to use.

"It works well, but on heavier ground I found the engine was hunting too much. For me, it was much easier to set the engine at 1650rpm and then activate the target speed or control the speed using the joystick. Not only was it smoother like this, but the engine has so much torque there was never a time when I thought it was going to bog down and stall.

"This impressed me, because we have some very heavy ground on some steep banks. These fields will pull any tractor's forward speed to a crawl, or even a halt, but the T7 just kept digging in and moving forward."

Fuel consumption

In terms of fuel consumption, Jason recorded the tractor's fuel usage on two occasions. The first time the T7 was pulling the Sumo-Simba combination at 10in deep in ground that had been subsoiled. Over a period of 6.5 hours the average fuel consumption was 45.8 litres an hour covering an average area of 2.4ha an hour. Total fuel used on this occasion was 298 litres. Total AdBlue usage was 40 litres.

On lighter work using a 6.2m Vaderstad Carrier it was a different story. With the engine set at 1490rpm the tractor cultivated 26ha (65 acres) in six hours and burned 200 litres of diesel. This equates to 33 litres an hour covering 4.3ha per hour. Total AdBlue consumption was 20 litres.

"As you would expect, fuel consumption was notably higher when the tractor was working harder," reports Jason. "However, it was the increase in AdBlue that





Above: CentreView display in the steering wheel (left) is bright and functional but can be hard to read and is often obscured by the driver's arm. If you don't opt for this you get a more traditional InfoView screen fixed to the steering column behind the wheel

surprised me the most. Working on the Sumo-Simba, fuel consumption increased by just under 50 per cent while AdBlue consumption doubled.

"Overall, I felt these fuel consumption figures compared well to other tractors we have tested in the past. Last year, a John Deere 8RX 410 (410hp/458hp max) tested on the Sumo-Simba combination recorded a figure of 54 litres an hour, however it was cultivating an average of 3.0ha per hour.

"If you calculate the overall diesel consumption per hectare, that puts the New Holland T7 at 19 litres per hectare and the John Deere 8RX at 18 litres. And remember, the 8RX is a track-layer so you would expect it to have a marginal advantage in tractive efficiency."

Screen in the wheel

The T7.315 HD features a CentreView LED display in the steering wheel. Identified as an industry first, it is

linked to the tractor's control terminal. The clever part is the screen remains stationary as the wheel is turned. But what did Jason think of it?

"Honestly, I didn't like it," he says. "I wear glasses for reading and while I was driving the tractor, if I looked down at the screen, I couldn't read it. The other issue is when you make headland turns, or if you're driving the tractor without guidance. Your arm blocks the view of the screen. It's even worse when you're looking over your shoulder. I would much prefer an A-pillar display."

New Holland now provides two optional remote key fobs with the T7 HD models. There's even a push button in the cab to start the engine rather than an ignition, which we thought added a little automotive refinement to the tractor. Wrong. After just a few days of testing the key fobs packed up rendering the brand-new tractor completely inoperable. New Holland sent dealer ▶

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Pulling this Sumo-Simba combination at 10in deep, over 6.5 hours the T7.315 HD consumed 45.8 litres of diesel per hour, covering an average acreage of 2.4ha per hour

"Fuel consumption figures compared well to other tractors we have tested"



► Russells at Cubley to fix it. As well as the fob, you can enter a PIN code into the screen, but we didn't know it. Nor did anyone else. We'd prefer to stick with the old-fashioned key option.

Our test tractor was equipped with the next generation of PLM (Precision Land Management) Intelligence technology, which will be adopted in all next-gen New Holland equipment. You can get PLM 1, 2 or 3 depending on the unlock level. This is part of a strategy to integrate digital tech and connect multiple machines, while delivering real time data to help farms achieve maximum performance and efficiency.

Satellite guidance has now been upgraded from the former Trimble set-up to a higher specification Novatel system. Featuring the usual complement of features such as ISObus connectivity and section control, the system can be set to provide an overhead graphics image of the tractor and the implement it is using. And it works well.

Taking its time

Everything New Holland says the tractor can do is possible

Right: The IntelliView 12 screen is simple to navigate and more importantly provides clear and concise data at a glance. The system is now Android-based



Below inset: During our test, the battery in the optional key fob stopped working, rendering the tractor inoperable. New batteries mean the fob needs to be re-paired to the controller



and we love the high standard of graphics and the ease of use of the 12in IntelliView display monitor. The problem we had was it took too long for the operating systems to boot up when you started the tractor.

It would literally take at least two minutes before the tractor became fully operational. Admittedly, this did improve with a software update installed by Russells, however it remained unacceptably slow. It's as if the servers that drive the systems are stretched to the limit just bringing everything to life.

This was the one thing that let our test tractor down.

"In my opinion, this tractor has one of the best engine and transmission combinations in this horsepower class," concludes Jason. "The new cab is super-quiet and very comfortable, the CommandGrip joystick is superior to most other tractors I've tested, and with the combination of CTIF and Michelin AxioBib tyres you can literally use every ounce of this tractor's power to optimum efficiency.

"The start-up delay issues aside, I personally think this is the best New Holland I've driven to date. If my employer told me he was buying one of these I would be delighted. This tractor really impressed me." **FMJ**

"If my employer told me he was buying one of these I would be delighted"



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Disc jockey

Earlier this year, Ian Walker swapped a 2018 Kuhn PZ170 drum mower for a higher capacity Kuhn GMD 24 disc mower to use with his 1988 Ford 6610. *FMJ* went to see it in action

WORDS AND IMAGES **DAVID LALEY**

After retiring from a career in the hand-tool trade in 2011, Sheffield-based machinery enthusiast Ian Walker returned to his farming roots and set up a small side-line with his good friend Paul Wainwright making hay on farms, small holdings and livery yards surrounding Sheffield.

"Just over a decade ago Paul was preparing between five to ten acres of hay each year in his spare time, which was made into round bales by a contractor. Unfortunately in 2011 the weather was against him and with rain on the way he needed to find someone to bale his hay at short notice and get it under cover," explains Ian.

Above: Prior to the GMD 24 Ian ran this 1.65m Kuhn PZ170 drum mower between 2018 and 2021

Below: Ian Walker uses this 2022 Kuhn GMD 24 disc mower behind his fully restored 1988 Ford 6610 II

"I was able to complete the work for Paul with the Ford 4000 and International B47 baler I owned at the time. We enjoyed working together and rekindling memories from our younger days helping out on my family's farms, so not long after we decided to pool the equipment we had and set up a little side-line making hay on local farms and small holdings.

"Paul was running a 1.95m JF-Stoll drum mower, which worked well but needed a lot of maintenance to keep it running at peak performance. We also used a Niemeyer drum mower





TECH SPECS

Kuhn GMD 24 disc mower

Width 2.4m

Swath width 1.7m

Discs Six

Mowing angle
+35 to -15 degrees

Break-back angle
Up to 20 degrees

Weight 544kg

Minimum PTO power requirement 31hp

PTO requirement
540rpm

Rear linkage requirement
Category I or II

Transport position
Hydraulic folding with automatic locking

for a number of seasons, lent to us by my former employers, the Woolley family, who had upgraded to a new Kuhn mower on their farm. We ran it as our front line mower until I bought a brand-new 1.65m Kuhn PZ170 drum mower in 2018 after seeing how well the Woolleys' example had worked."

Restoration job

Ian used the PZ170 behind his fully restored Ford 6610, a tractor he'd bought from former local contractor John Plant. "I'd been looking for a Super Q cabbed 10-series Ford to support my older 1983 Q cabbed Ford

Above: Ian has been impressed with the GMD 24's lockable hydraulic folding transport system

4610 and managed to acquire John's 6610 in October 2017 specifically to pull a mid-80s Claas Markant square baler we continue to use," Ian explains.

Contractor John Plant of W. Plant & Son bought the 84hp Force II 6610, first registered on 1 January 1988, from Harris Ltd to power a mid-mounted McConnell hedge-cutter.

"It doesn't take any more pulling or powering and is well within the 6610's capabilities"

The tractor spent the majority of the next 15 years working for Derbyshire County Council before its workload was reduced to a small amount of hedge-cutting on one local farm, snow ploughing, and towing the header trailer for John's Laverda combine until the tractor was parked up when he retired in 2016.

With the help of Robin West and Richard Cooper, Ian was able to fully restore the tractor back to factory fresh condition and has used it successfully ever since for mowing and baling customers' hay.

"The two-wheel drive 6610 was the perfect match for the Kuhn PZ170 mower I previously ran," says Ian. "It was nimble enough to cope with the small and awkward fields we made hay in, which were often no more



Above: Ian Walker has been impressed with his new GMD 24 disc mower, which can cut more grass each day and leaves a flat swath that dries out quicker

Below: The GMD 24 comes equipped with a neat and simple adjustable stand



Top right: The view from the 6610's rear window is excellent, while the adjustable tension spring allows the GMD 24 to glide over undulating terrain

Left: Once the GMD 24 has been folded up it doesn't sit too high on the 6610 and remains stable on the road



“The superior performance certainly bodes well for unpredictable weather”



► than five acres in size, while being stable enough to handle any undulating terrain.

“The Kuhn PZ170 drum mower was economical, simple to use and required little daily maintenance to run reliably. However, as we began to gain more customers through word of mouth, we began to travel greater distances from our base and I soon realised that the PZ170 wasn’t the most efficient at cutting the additional acreage we’d taken on.

“Initially we ran two drum mowers together to cut our customers’ extra acreage, bringing the Woolley family’s old Niemeyer back out of retirement to support my Kuhn. While this worked well and provided us with some flexibility, it meant we were effectively using two tractors to complete the job of one, so that’s when I decided earlier this year to invest in a larger mounted disc mower.”

Keen on Kuhn

Impressed with the build quality and reliability of his PZ170, Ian upgraded to a brand-new 2.4m-wide Kuhn GMD 24 equipped with six discs and supplied by North Yorkshire-based Kuhn dealer Hardwick Agricultural Engineers Ltd.

The GMD 24 forms part of Kuhn’s four-model GMD 10-series mounted disc mowers slotting in above the 1.6m and 2.0m GMD 16 and GMD 20.

The range is headed by the 2.8m GMD 28. The GMD 24’s cutter bar comes equipped with six oval-shaped discs fitted with twin bevelled knives that operate in sequence so that no double cutting takes place.

The main disc bearing stations located in the centre of the disc can be removed easily for maintenance via four bolts. The GMD 24’s cutter bar reacts very well to contour changes thanks to an adjustable tension spring mounted to the headstock.

“It’s simple to adjust through the 6610’s three-point linkage and allows the cutter bar to float across the most undulating of fields without snagging the ground,” says Ian, who adds that thanks to a cleverly positioned articulation joint the mower bed is capable of working between plus 35 and minus 15 degrees to cope with bank sides more effectively.

“Despite being larger than the PZ170 the articulation joint allows it to get into awkwardly shaped corners of small fields more efficiently without risking any damage to the ground or mower,” says Ian. The distance between the cutter bar and the rear of the 6610’s wheels is relatively short too, which gives you far better control over the cutting height and keeps it much more uniform across the entirety of a field.”

Should an obstacle be struck, a safety breakaway mechanism allows the mower unit to swing backwards

up to 20 degrees to reduce the risk of damage. The GMD 24 can then be reset by reversing.

Separate swaths

A swath wheel is also mounted behind the outer disc cone. It separates the cut crop from the remaining uncut crop so that the tractor drives over bare ground rather than the previously cut grass. “It’s a very convenient way of keeping the swaths separate and fits neatly under the GMD 24’s protective cover. The GMD 24 also produces a considerably wider, flatter swath compared to the smaller PZ170, which allows grass to dry out much quicker as a result.”

However, it’s the GMD 24’s work rates that have impressed Ian the most this season. “The beauty of running the wider 2.4m GMD is that it doesn’t take any more pulling or powering compared to the PZ170

Above: Ian purchased this 1988 Ford 6610 II in October 2017 to pull a Claas Markant square baler

Right: The GMD 24 folds and locks in position neatly within the 6610’s width for safe and stable transport

Below: The GMD 24 is fitted with a swath wheel behind the outer disc cone that separates the cut crop from the remaining uncut crop

Below right: This handle on the front right corner of the mower allows the protective hood to be folded for transport



The 2.4m cutter bar is equipped with six oval-shaped discs fitted with twin bevelled knives



Above: This 2.4m-wide Kuhn GMD 24 disc mower was supplied earlier this year by North Yorkshire based Kuhn dealer Hardwick Agricultural Engineers

Above: A sturdy hydraulic ram is used to fold up the GMD 24, which also features an articulation point to work on slopes

and is well within the 6610's capabilities. Secondly, because it's larger, I'm able to make fewer passes around a field, saving fuel, and can negotiate the most awkward and fiddly areas of fields with the same precision as the PZ170. I pulled into an eight-acre field featuring lots of twists and turns this year and cut it quicker than when we were using the two smaller drum mowers in the same field last year.

"Although we haven't been under all that much pressure this summer due to the consistently warm weather, the GMD 24's superior performance certainly bodes well if we end up experiencing unpredictable and catchy weather in the future."

Ian has also enjoyed using the GMD 24's lockable folding transport system. "It travels well on the road folded up and doesn't sit too high on the 6610,"

he says. "It's also slightly more convenient to place in its transport position compared to the PZ170 because aside from lifting up the mower's front hood you don't have to get out of the cab.

"You simply pull the spool lever to engage the hydraulic ram and that's it, whereas with the PZ170 you physically had to swing the mower into its transport position before making sure you remembered to fit the locking pin securely.

"The Kuhn PZ170 was, and still is, a fantastic little robust drum mower that never let me down in four years, however the GMD 24 is more convenient and provides the extra capacity we require to cut grass for hay more efficiently. If I don't encounter any reliability issues with the GMD 24 I can see it remaining yoked to my Ford 6610 for many more years to come."

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Quad carrier

The Quad 550 is described as the strongest and lightest self-propelled carrier chassis in the business. *FMJ* joined the Vervaet demonstration team to see the new machine in action

WORDS **SIMON HENLEY** IMAGES **CHRIS LOCKWOOD/SIMON HENLEY**

The market for self-propelled carriers in the UK is a small one. Even on a global scale, the giant carrier chassis machines used for manure or effluent handling tasks represent a comparatively niche sector of the self-propelled agricultural machinery market.

But that doesn't mean there's not a demand for them. The face of farming is changing. Arable growers are increasingly being encouraged to use natural manure products as a replacement for increasingly

market for giant tool carriers has increased in recent years. In the past it was three-wheeled machines like the Challenger Terragator and Vervaet Hydro-Trike, which were sometimes used by large-scale operators for spreading lime, manure and liquid slurry. Even they were not a common sight, and four-wheel tool carriers were virtually unheard of.

In the last decade or so the agricultural industry has turned its attention to the green energy business. Today, four-wheel carrier

product without destroying the land.

The primary aim of the self-propelled carrier is to protect the land. Designed to have a low vehicle weight yet be capable of carrying a heavy payload at high field speeds, the modern four-wheelers use huge flotation tyres and complex offset steering systems to reduce soil damage and ground compaction.

The Hydro-Trike

Vervaet has been manufacturing self-propelled carriers for over 30 years. Indeed, it was the Hydro-Trike that established the company's reputation for building high-capacity, low ground-pressure vehicles. Available in three- or five-wheel configurations and equipped with a 16,000 or 20,000-litre slurry tank, the Hydro-Trike remains a go-to choice for farmers and contractors handling large volumes of liquid manure or

"A four-wheel machine can travel down tramlines without running on the crop"

expensive chemical fertilisers. Then, of course, there's the challenge of ever-stringent environmental legislation.

While small, here in the UK the

chassis machines are increasingly used by farmers and contractors for spreading products such as digestate from AD plants because of their ability to apply high volumes of

The offset wheel tracking system ensures that the field surface is rolled over only once. Each wheel has its own track and the four equal-size wheels ensure the weight is evenly distributed

TECHSPECS

Vervaet Quad 550

Engine 13.0-litre, 6-cyl Volvo Penta

Power 550hp

Torque 2650Nm @ 1200rpm

Transmission Vervaet VSG-Drive (40kph)

Slurry tank 21,000 litres

Slurry pumps Vogelsang or Börger

Turn radius 8.03m

Fuel tank 850 litres

Hydraulic lift 9000kg

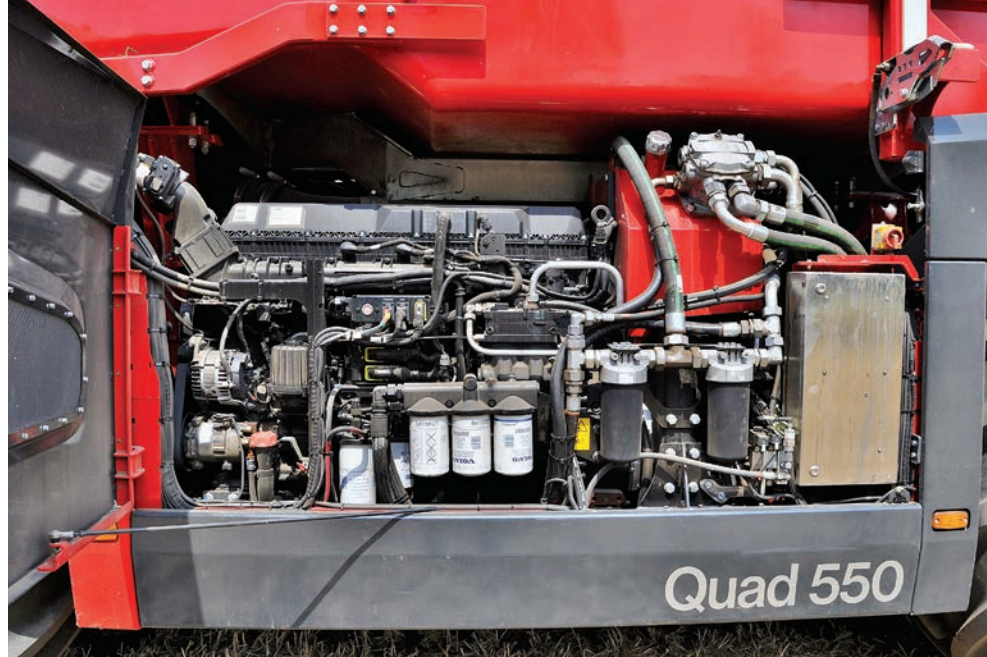
Price (MRP) £555,000 (as seen)



► effluent all over the world. So why has Vervaet developed a new four-wheel carrier?

"A four-wheel machine can travel down tramlines without running on the crop growing between the wheelings," explains Vervaet product specialist Stephen Hastings. "The ability to run in the tramlines extends the spreading season because it allows taller crops to brush past the machine as it travels. The four-wheel design is also better suited to farms operating a controlled traffic system."

Distributed in the UK by J. Riley Beet Harvesters Ltd, the Quad 550 has been developed to compete with the Holmer Terra Variant and Vredo SlurryTrac. Vervaet is also demonstrating the Quad 550 to its customers currently operating one or more Hydro-Trikes. "The new Quad 550 was originally launched in early 2021," states Matt Carse, sales manager for J. Riley. "By working closely with existing Vervaet customers and using experience garnered from three decades of Hydro-Trike and sugar



beet harvester production, it has been developed entirely by Vervaet engineers in the Netherlands.

"The Quad 550 has been built to provide greater performance with a lower cost of ownership. It's been designed for ease of service and constructed so major components can be easily accessed. It is powered by a 13.0-litre Volvo Penta engine,

Above: Easy access to vital components is an important feature of the Quad. All engine service points are behind a service panel

Below: When crabbing, the rear linkage automatically offsets so the boom doesn't operate at an angle and can maintain the full spreading width

which produces 550hp and delivers 2650Nm of torque at just 1200rpm. It is the Quad's huge torque delivery at low rpm that enables the machine to operate not only very efficiently but also economically."

VSG-Drive

According to Matt Carse, power to the wheels is distributed by a Vervaet

"The huge torque delivery at low rpm enables the machine to operate very efficiently"





The Vogelsang 24.0m Blackbird trailing shoe slurry boom seen here is the first of its type to feature a new four-pivot boom design to improve ground following

VSG-Drive hydro-mechanical transmission system, which provides stepless drive from zero to 40kph. The transmission system uses two hydraulic motors that drive the front and rear axles independently. VSG drive enables the Quad to vary how much power and torque from the engine is delivered to either axle. By varying the distribution of power

Above: The main cooling pack is located under the cab at the front of the machine, where the least amount of dust and debris can be drawn in

in accordance with ground conditions, traction is continually optimised. Diff locks on both axles and the centre differential allow the machine to continue working in muddy conditions.

To improve operational stability, the front axle of the Quad 550 is equipped with a gyroscopically controlled levelling system, which

uses hydraulic cylinders to automatically level/stabilise the machine as it travels across gradients and undulating terrain.

The tank is a Vervaet design, which is deliberately tapered in behind the cab to provide a clear over-the-shoulder view from the driver's seat of the rear-mounted attachment working on either side ▶



Above: The Quad 550 comes prepared for an NIR sensor. It's the only machine of its type to integrate John Deere Harvest Lab NIR technology into the terminal screen

► of the machine. The 21,000-litre tank is filled using a front-mounted suction arm, which is controlled from inside the cab. Developed in conjunction with German manufacturer Garant-Kotte, the suction arm is front-mounted for accurate docking, and has the ability to extend over a hedge or ditch if required. During transport it tucks along the side of the machine to maintain a transport width of 3.0m.

There are three suction pipe options. The standard pipe diameter is 8in. The optional SuperLoad system increases the pipe to 10in. The Quad 550 can also be specified with a turbo-filler and a telescopic suction pipe extension. Suction is provided by a Vogelsang 9000-litres-per-minute pump or 12,000-litres with the SuperLoad system. Buyers who require even greater intake capacity

can also specify a 13,500-litre Börger pump, which comes with the aforementioned turbo-filler.

Macerators

Vervaet offers two types of macerator on the Quad 550. As an option you can specify a Vogelsang macerator fitted in front of the pump, or as standard you get a Vervaet variant that macerates the slurry under pressure. This unique design is claimed to provide better chopping action as the effluent is forced through the knives rather than being drawn through under suction.

The Vervaet demo machine features a 12,000-litre Vogelsang pump and Vervaet macerator. It is equipped with a Vogelsang 24.0m Blackbird trailing shoe boom mounted on the rear linkage. It is the first example of the new Blackbird to



be built by Vogelsang, which integrates a four-pivot boom design for better ground following.

The operator station is a Claas-sourced Lexion combine harvester

Above: Rear-mounted hydraulic linkage is available in three- or four-point configurations. This is the four-point system rated at 9000kg

“A lot of good features have helped us fine-tune what we’re doing”

The 21,000-litre tank is deliberately tapered behind the cab to provide a clear view of the attachment from the driver’s seat



The filler spout was developed in conjunction with German manufacturer Garant-Kotte. The filler spout folds against the side of the vehicle during transport to maintain a width of 3.0m (below inset)



cab. It's the same one used on Vervaet sugar beet harvesters, however it features the new Claas armrest control system and joystick, which is not currently offered in any other Vervaet machines. The new joystick operates using Vervaet-developed software unique to the Quad 550.

The operating terminal is shared with the beet harvesters. The terminal hardware remains the same, but the software used in the Quad 550 is machine specific. Incidentally, this is the only machine of its type on the market that integrates John Deere Harvest Lab (NIR) technology into the terminal screen.

In terms of rubber, Vervaet offers a wide range of tyre options, including 900/R38 and 900/R42, with 1000, 1050 and 1250 tyre widths available on 32in rims. The Quad 550 is also available with 380/R46 dual wheels and a Vervaet-developed central tyre inflation system, which adds £6000 to the price tag.

EMJ

The Quad 550 features four-wheel steering with a turn radius of 8.03m



Owner's verdict

Jonny Fraser of A&R Fraser, Shaftesbury, Dorset

Having seen the Vervaet demonstration team in action, we asked the good people at J. Riley Beet Harvesters Ltd if we could talk to someone using a new Quad 550 as part of their farming operation.

The first Vervaet Quad 550 slurry applicator in the UK was ordered by A&R Fraser, a family-owned agricultural contracting business based at Shaftesbury in Dorset. The man in charge of the contracting business is Jonny Fraser. Working across the south-west of England, A&R Fraser are experts in digestate and slurry management. The Quad 550 they use replaced a competing manufacturer's machine back in January.

"We've been running the Vervaet Quad 550 since early January, when we started spreading digestate on winter cereals with a Vogelsang dribble bar," says Jonny. "The bulk of our spring spreading work is top-dressing cereal crops, usually working in tramlines to minimise crop damage. After harvest we start applying digestate to stubbles. Additionally, we cover a small area of grassland, which is shallow injected using a disc injector. We had to upgrade our dribble bar to a 32.0m so it was logical to opt for a new carrier with a bigger tank. We also wanted to stay with a four-wheel machine.

"The Quad's 21m³ tank is a good match for the dribble bar. Its wheelbase and track width allow it to stay in the tramlines used by the self-propelled sprayer, so it's never running the crop down. In-field performance is very good and so is the work rate. We've definitely gained output. It has a strong engine with plenty of torque and it integrates a lot of good features that have helped us fine-tune what we're doing.

"It's too early for us to determine running costs," he concludes, "but it does seem pretty fuel efficient. Overall, the Quad 550 has fitted well into our system and what we we're trying to achieve."



Above: "The Quad's wheelbase and track width allow it to follow tramlines used by the sprayer," says Jonny Fraser

The first Vervaet Quad 550 slurry applicator in the UK was ordered by A&R Fraser in Dorset





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Staying small

MF recently announced the launch of its new 1842S in-line small square baler. At a time when many manufacturers are no longer offering a conventional baler in the UK, *FMJ* took a look at the origins of this new machine

WORDS SIMON HENLEY IMAGES AGCO/SIMON HENLEY

The demand for small balers in the UK has remained consistent in recent years, yet sales of new models have levelled for some time. If you want to buy a new conventional baler today the choices are limited to the Massey Ferguson 1800-series or the New Holland BC5000 models.

MF baler sales have been on the rise in recent years and, intent on staying one step ahead of the competition, the company has just announced a host of updates and the launch of the new 1842S high-capacity model.

"The MF 1800-series balers are sold not only in North America, but throughout Europe, Africa and the

Middle East," says Massey Ferguson's product marketing manager for harvesting, Mark Grigson. "Small square balers are more affordable than their larger round or big-bale counterparts. Furthermore, in countries where labour is cheap and plentiful, the bales can be handled without specialist machinery.

"In the UK there remains a strong demand for small bales, particularly in the equine and agricultural livestock sectors. The small bale is relatively light and easy to handle, easy to transport in small quantities and importantly reduces waste.

"Any farmer or contractor

Below: The MF 1840 represents the second generation of Hesston-built in-line small square balers. It was introduced as a replacement for the 1839 in 2013

who produces large quantities of hay and straw in small bales needs to be able either to upgrade and/or replace their existing balers with new machines. Designed as an alternative to the MF 1840, which will remain in production, the new 1842S has been developed as a super-duty baler for customers who need a baler with a higher crop throughput."

Heavy-duty chassis

"The 1842S sits on a heavier chassis, which is borrowed from the US-spec 1842 model," Mark continues. "Power from the tractor is transmitted via a new primary PTO shaft with mid-mounted support. The baler is protected by a heavy-duty slip

"There remains a strong demand for small bales, particularly in the livestock sector"



TECHSPECS

Massey Ferguson 1842S baler

Baler	MF 1840	MF 1842
Bale size	457 x 356mm	457 x 356mm
Bale length	700 to 1300mm	700 to 1320mm
Pick-up tines/hydraulic	1.9m/56	1.98m/56
Auger diameter	280mm	330mm
Plunger stroke	550mm	584mm
Plunger speed	100 strokes/min	100 strokes/min
Packer forks	Four-tine fork	Dual three-tine
Knotters	2 x HD	2 x HD
Weight	1570kg	1905kg
PTO power	50hp (minimum)	50hp (minimum)
Price (MRP)	£33,651 (Sept 2022)	£41,690 (Sept 2022)

► clutch, which delivers 20 per cent more torque than the 1840 design.

"The new baler also uses a new high-inertia flywheel, which is both larger and heavier. The plunger is 24 per cent longer to increase the torque and reduce the power requirement. The outcome is you get greater operational efficiency and denser bales. Crop throughput has also been improved. The 1842S now shares the 2.0m pick-up used on the 185 large square baler. It has a high-speed reel that operates at 145rpm. That's 37 per cent faster than the 1840.

"Once lifted from the swath, the incoming crop is fed into a new tapered feeding chute. The front

opening (which measures 735mm) is 83 per cent wider to provide a 44 per cent greater feed area. The result of this design improvement is virtually unhindered crop flow. It's the pick-up and crop feed that have greatly improved the 1842S baler. In field trials conducted in Europe the 1842S was able to travel 50 per cent faster than the 1840, working in the same swath."

The new MF 1842S baler is scheduled to go into production this autumn. The first examples of the new model will be available in 2023, which means we won't be able to see one in action until next summer.

High expectations

Since we couldn't take a closer look at the new baler, we decided it would be a good idea to get some input from existing MF baler owners who already have experience with the 1800 series. The first of these is Leicestershire contractor Paul Morris, who has been using an 1839 for the past 13 years.

"We bought the 1839 in 2009 to replace two smaller MF 124 and 224 balers," remembers Paul. "At the time we found we were increasingly baling behind larger combines. The old balers just couldn't handle the size of the swath or the volume of straw. I have always rated Massey balers. When we decided to trade in the other two balers, as far as I was concerned there was no other choice. I wanted an in-line MF baler and it's a decision I haven't regretted. I can honestly say it's never put a foot wrong.

"Back then I was baling around 2000 straw bales and around 7000 hay bales a season. Now I'm only baling around 2500 a year, which, at 13 years old, the baler still handles comfortably. One of the things you quickly learn with the 1839 is not to push it too hard. You let the baler work at its own pace. I know when I'm pushing too hard because the audible pitch of the baler changes. That's the warning to back off. If you don't it will break the shear bolt on the flywheel.

Below and below right: The 1840 features two twine boxes, which together hold five bales of twine each (inset). Baling at an average of 500-550 bales an hour, the baler has enough twine capacity to last five to six hours





Right and far right: The 1840 introduced an electric knotter fan. At work the fan keeps the knotters chaff free (inset) and self-cleans by periodically reversing

Below and inset: The 1839 baler replaced the 139 baler in 2006. Leicestershire contractor Paul Morris (inset) purchased his 1839 in 2009 to replace two smaller MF 124 and 224 balers

Below: Bale density on the 1840 is controlled by a manually adjusted hydraulic ram that features an external pressure gauge



"I wanted an in-line MF baler and it's a decision I haven't regretted"

"The weakest link with this baler is actually the Browns flat-eight bale sledge I use. I can comfortably bale 400-450 bales an hour but the sledge realistically struggles to handle more than about 350 an hour without continually playing up. It's worn out so next year I'm replacing it with a Ritchie-Cooks accumulator flat-eight."

Asked if there are any improvements he would like to make to the baler, Paul concluded: "An electric knotter fan



would be nice, but chaff hasn't stopped me baling yet. I would also prefer to have the hydraulic bale tension adjustment. Mine has the old-fashioned manual screw-type bale tensioners, which continually require tweaking in uneven swaths and lighter crops.

Ticking all the boxes

Alistair Woodward farms with his brother Tom and sister Sarah Davies at Pinwall in Leicestershire. The family runs a farm

and livestock feed merchants from the farm (Pinwall Feeds), which annually supplies 10,000-plus conventional bales of high quality hay to horse, pony and pet owners throughout the west Leicestershire/north Warwickshire area, in addition to straw for bedding.

Following the news that John Deere had ceased baler production at its Arc Lès Gray factory in France, in 2020 they decided it was time to trade in their 10-year-old John Deere 459 and purchase a brand new MF 1840.

"We were concerned that spare parts for the John Deere would eventually become an issue, so we bit the bullet and ordered a new MF 1840 from B&B Tractors," recalls Alistair. "We traded the John Deere 459 against the MF baler, which at the time was listed at £20,500. We bale around 10,000 hay and 5000 straw bales every year. I'm very particular about ensuring the bales are well formed, evenly packed and all the same length. The John Deere made very good bales.

"Moving over to MF was the next logical step as the MF 1840 baler ticked all these boxes. The bale size

Left and far left inset: The 1840 specs are almost identical to the Woodwards' previous John Deere 459 (inset). Both have a 2.0m pick-up, operate at 100 ram strokes a minute and produce 46cm x 36cm bales

Right and inset: This Ritchie-Cook Super 8 Accumulator features a hydraulic (belt) floor, which was set at twice ground speed. A camera on the baler provides an in-cab view of the sledge





Left: The 1840 baler introduced a new pick-up/auger design, additional twine storage, an adjustable drawbar and an Optiform extended length bale chamber

Below and inset: Alistair Woodward is seen baling with his 1840 in a crop of wheat straw, which produced 3000 bales in under five hours

"This year the 1840 has really lived up to our expectations"

► is the same as the John Deere (357mm x 457mm) but we were also looking for greater output."

Shear bolts

Unfortunately, Alistair's first season with the 1840 didn't go as well as he'd expected. "The baler kept breaking stuffer/packer shear bolts," he says. "I must have used a dozen of them. It was very frustrating. Last winter the baler went back to B&B for its warranty service. While it was there they discovered the flywheel clutch had seized up. No explanation was given for this but it was changed under warranty.

"Apparently the clutch must be carefully set using a torque wrench. The torque setting allows the clutch to give a little and absorb the impact of each ram

stroke. This prevents the shear bolts from breaking."

Another problem Alistair encountered also pertained to their Browns bale sledge. He had used it for years behind the John Deere baler but it simply could not handle the volume of bales produced by the 1840. "During the first season with the MF the sledge was a nightmare," explains Alistair. "I ended up buying a second-hand Ritchie-Cook Super 8 Accumulator, which features a hydraulic belt floor. It transformed the baler's performance because it has the capacity to handle the volume of bales.

"This year I have baled the heaviest crop of wheat straw I've ever harvested. Using a John Deere 6820 tractor I was baling in the lowest gear it had. Behind me, the baler was pumping out 600-plus bales an hour and the sledge was dropping a flat-eight about every



20 metres. I baled 3000 bales in just under five hours. And I should point out that with the flywheel clutch properly set up this year I didn't break a single shear bolt.

Knotter fan

"I like the fact you don't have to unpack the MF baler to use it. You can pull in a field, drop the hydraulic pick-up from the cab and start baling. When you finish, you shut off the PTO and you're done. I also like the electric knotter fan. It keeps the knotters completely chaff-free and if you have to open the service cover the fan immediately switches off. I've learned from experience that clean knotters work more efficiently and you reduce the risk of fire.

"This year the 1840 has really lived up to our expectations," concludes Alistair. "Now we've ironed out the teething problems and updated the sledge it has performed flawlessly." **EMJ**



Left: The new high-output 1842S baler is scheduled to go into production this autumn. The first examples should arrive in the UK by spring 2023

MF's in-line small square baler

Manufactured by AGCO in Hesston, Kansas, the MF inline small square baler has been in production since the late 1990s, when MF introduced the 139 baler into Britain. It was based on the design of the in-line Hesston

4600 small square baler available in the USA since 1979.

At the time of its UK launch, the 139 represented a new concept in small baler design. Its inline configuration mirrored that of the large square 4800

baler produced by Hesston. It was easier to transport and it didn't require setting up in the field. Moreover, the crop no longer required redirecting into the bale chamber. Instead, it passed directly through the baler in a straight line.

In 2006 the 139 was updated

and renamed the MF 1839. Further developments in 2013 saw the 1839 replaced by the 1840. It featured a new pick-up/auger design, additional twine storage, an adjustable drawbar, an Optiform extended length bale chamber and an electric knotter fan.

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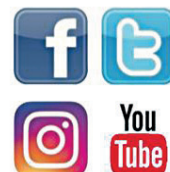
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Spread thin

Muck spreaders with horizontal beaters and discs tend to be seen in roles where material is uniform and accuracy is important. A hike in fertiliser prices has fuelled an appetite for alternative nutrition on the land, increasing interest in such manure spreaders that can apply at low rates

WORDS **KEN TOPHAM** IMAGES **MANUFACTURERS**

The rear-discharge spreader has become a staple machine for many farms and contractors. They have become increasingly versatile, with slurry doors and different spreading methods, but horizontal beater and disc spreading machines are most likely to be owned

by contractors involved in distributing products like chicken litter and sewage cake.

With regulations now stricter than ever in terms of what can be spread and where, muck spreaders with weighing and GPS integration will undoubtedly become a common sight and variable rate application will be an attractive option too. The key difference in the bio-spreader sector is at the back end, where the machines tend to have horizontal beaters within a hood that crumbles the material before hitting the spreading discs. The application is more accurate and the finish more uniform, and the material is broken into a finer grade on spreading.

A number of options are available from UK and European manufacturers, especially in the mid to large capacity sector. A variety of electronic additions are available, which vary in level depending on the machine, and this type of spreader is slightly more specialist in that they are typically for lower rate spreading of finer material.

Joskin

The Tornado comes in capacities from 11.5 to 22.4m³, or 13-20 tonnes. The overview of the hardware is a narrow bay and large wheel concept for easy pulling. The Tornado is the company's flagship spreader and as such comes

with a few bells and whistles as standard.

Specification can include either a single- or tandem-axle configuration and, depending on work type and infrastructure, the option for dual axles may be useful. Drawbar suspension is standard and the bodies are all the same width, additional capacity through the range being achieved by lengthening the monocoque body.

The slurry door is standard ahead of the spreading unit, which depending on material, can work from 12-22m, controlled by the lower part of the rear door being adjustable. Two horizontal beaters crumble material against the rear hood, which then falls on to the discs. The rear door can be opened for

Above: Users are increasingly looking for machinery to spread precisely to wider widths and at target rates that vary between fields



There are a number of options available, especially in the mid to large capacity sector





Ktwo

→ highly fibrous materials like
→ fresh box muck, which reduces
the stress on the spreading unit.

The Joskin is ISOBus controlled, either in low-tech mode with a simple control box or through the tractor terminal. It can also have static or dynamic weighing and GPS tracking, but 'everything is possible', the company says.

Ktwo

There are no less than nine bio-spec spreaders in this range, offering capacities from 21.5 to 36.3m³ and single, twin or tri-axle construction. The first five models share the same body width and the larger versions go wider to achieve the capacity. Construction is monocoque with ten-stud commercial axles throughout the range.

One common feature is the 16mm bed chains, rated at 128t, only varying in number from the smallest machine to the largest. The 1100mm spreading

discs are also a common component, able to spread up to 30m.

The Ktwo Bio can be run manually but an optional extra is the RDS ISOBus Apollo ECU rate controller and weigh cell, which can be specified with either a single- or tandem-axle spreader. However a sprung drawbar is necessary to gain weighing ability, connecting via an ISOBus lead to either a farm's existing standalone unit or tractor screen, or Ktwo can supply a touch-screen display. Functionality can go from rate control up to full coverage mapping and headland switch-off with guidance and live coverage maps.

Pichon

The MK range has capacities from 10-24m³. The ability to add the Precisium rear section to the MK

**Functionality can go from
rate control up to full
coverage mapping**

spreaders means they can be either a vertical or horizontal beater spreader, if you need it to be. The disc option comes with boundary control guards. It's likely that most buyers in the UK will only spec one spreading element, but the ability to retrofit may be attractive.

With a galvanised body, the Pichon should stand up well to the elements and manure. A sprung drawbar is standard, as are

heavy-duty axles and there is an option to hydraulically adjust the 16mm bed chains, which may keep them at an optimal level.

The Pichon can be a fully manual machine or it can come with all the precision farming tech you could want, including a management system that can be fully ISOBus controlled with weighing and variable rate application able to be integrated. The MK range will run through a standalone box or a tractor screen. The Pichon also has an audible alarm, which sounds when the beaters start, and LED lighting as part of the standard kit.

Rolland

The Rollforce range offers what the maker describes as a spinning deck. The Rolland spreader has a deep monocoque body, with either sprung or hydraulic drawbar suspension, 16mm bed chains and a commercial axle. The TCE (transport compost evacuate) concept sees the Rolland open fully, but the idea is to enable you to process box muck into a windrow in the field, ultimately ending with a more uniform product



Pichon

when it comes to spreading.

Rolland has a multitude of control interfaces, from a very simple bed speed controller to an ISObus system. This allows for guidance integration, variable rate and headland shut-off. The dynamic weighing system allows users to evenly unload the spreader from start to finish, with weigh cells mounted to the axle and drawbar.

The TCE model comes with a slurry door and the application rate can be as low as 0.8t to the hectare for products like lime and 5t per hectare for compost. Spread width will vary depending.

Bergmann

Five machines in the disc sector are offered from 8.6-12.1m³. Models are slightly smaller than some of the competition, which may suit some operations better as not everybody wants huge capacity. The format of the Bergmann is based on a higher body and tandem-axle arrangement. The exception is their new model, which is a large wheel, single-axle machine with 14m³ capacity.

The TSW models have a slurry door ahead of the horizontal beaters and there are two options for disc size, which depends on the spreader capacity. Bergmann has a hydraulically adjustable hood that controls the drop point of the material hitting the discs to get precise rate and pattern.

Early adopters of the ISObus system, Bergmann has a full offering of control systems and is able to supply a CCI terminal that can give a full read-out of telemetry, trips to the field and area covered, as well as the variable rate and coverage maps. A simple box controller is available too,



Rolland



Bunning

as are automatic lubrication and automatic bed chain tensioning.

Bunning

The Lowlander range has no fewer than nine disc spreader models from eight to 40m³. Models feature a low body, large wheel form, except for their very largest machines, which use tandem axles.

All Lowlanders have sprung drawbars and can be fitted with

weighing, which needs to be specified at the build stage. Alternatively, dummy cells can be fitted if you think it's a feature you'll want down the line. 20mm floor chains are used with full-width floor slats.

The Bunning spreader features an adjustable lower canopy, which varies the drop point of the material being spread. An option is for a fully opening rear door to make windrows. From a simple scale



Bergmann



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Agri-Spread

➔ through to full ISObus, the
➔ Lowlander can facilitate variable rate and mapping, which can be done through the tractor's screen or a terminal. Target rates, live spreading rates and mapping are possible through the ISObus system and there is also the option on machines with weighing to have flashing overload lights. This system can be set to a desired weight so it's ideal if any road travel is required.

Richard Western

The Delilah spreader comes in two sizes: 12t, 15m³ and 15t, 17m³. Models have a slurry door and full opening canopy, with a manually adjustable lower canopy as standard for precise drop point adjustment for varying materials. The discs can be configured with six, three or two blades depending on the desired spread and application rate. A boundary limiter with position indicator is also a standard feature.

The Richard Western machine has full-width bed slats and heavy-duty chains, ten-stud axle, and can have a sprung drawbar, which it will need if it is to be fitted with weigh cells. Electronic bed speed is available as a standalone feature and it can have GPS implementation. Fully automated weighing and recording equipment with GPS is available. Mudguards are part of the body and should keep the machine

reasonably clean. LED lights and marker lights are standard.

Agri-Spread International

The Horizontal Beater & Spinner disc rear discharge spreader range has been launched by Agri-Spread

International.

Designated the Pro+ HBS Series, there are 14, 16 and 18t models with an internal floor width of 1600mm.

The spreaders use twin horizontal rotors with boron flights and 1085mm rotating discs with twin paddles to spread up to 24m depending on material density

and quality. Double 20mm floor chains, hydraulic double-acting slurry door and a rear rotor hydraulic canopy door with adjustable spring-loaded hood drop point with border control limiter are standard.

Drawbar options include fixed, swivel or spoon hitch with the option of a sprung drawbar. Hydraulic brakes are standard and air/hydraulic brakes are offered as an option. Full ISObus application rate control is also an option with load cells and sprung drawbar. Demonstrations will be available from April 2023 via PK Sales Ltd. Smaller models are planned in the future.

EMJ



Target rates, live spreading rates and mapping are possible through ISObus



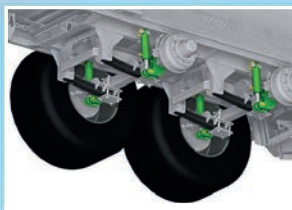
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From green to greener

WORDS AND IMAGES
SIMON HENLEY

John Deere's strategy for sustainable food production and greater global food security utilises a combination of time-honoured farming practices, existing John Deere technology and alternative fuel and power systems



Above and below: John Deere's Sustainable Farming event in Germany introduced a formula that revolves around the process of connective planning





Left: GPS data from a tanker is used to control a precision seed drill. The seed is placed directly above the slurry belt (above inset) and the exact position of every seed planted is recorded

T

he global population needs food security. We are reminded of this with monotonous regularity. Yet the ability to stabilise food prices while producing food not harmful to the environment is becoming progressively more difficult.

We live in a world where agricultural

land is being repurposed for anything but

food production. Swathes of farmland are being consumed by industrial and residential developments, renewable energy programmes, ecological and environmental protection schemes and big-business incentive programmes such as biodiversity net gain and carbon-offsetting.

With less land available for food production than ever and added considerations such as global climate change, it is now imperative that we produce food using techniques that protect the environment. Moreover, this food needs to be produced in a manner that enables farmers to satisfy the ever-stringent environmental and ecological considerations mandated by law.

Deere & Company wants to achieve complete sustainability in agriculture. This was announced in Germany at the 2022 Sustainable Farming event, where John Deere explained its ambitions for sustainable food security in the immediate future. The John Deere ideology for sustainable farming revolves around the process of connective planning. This utilises a combination of existing technology and equipment, with which many UK farmers will already be familiar.

Another aspect of particular interest to many John Deere customers is the announcement that the long-awaited eAutoPwr transmission system unveiled in 2019 is now going into full production. The event also launched John Deere's MultiFuel technology, which essentially allows the adaptation of existing Deere engines to run on bio-fuels such as rapeseed oil. But before we discuss this, let's introduce the John Deere strategy for sustainable farming.

HarvestLab

The HarvestLab 3000 NIR (Near Infrared) sensor was introduced in 2007 for self-propelled forage harvesters. It can determine the moisture, protein, sugar, fibre, starch,



The long-awaited eAutoPwr transmission system is now going into full production



ADF and NDF content of grass and maize crops for silage. HarvestLab is also fitted to slurry tankers for manure constituent testing in variable rate slurry applications and for performing bench-top nutrient crop analysis. And it's HarvestLab that is the key element for sustainable farming

using the aforementioned process of connective planning.

The formula for connective planning is divided into three steps. They include harvesting and crop data collection,

precision manure placement and seed planting, precision mechanical weed control and spot spraying technology. John Deere started testing HarvestLab on its combines six years ago. It now offers analysis of crop quality and nutrient content in threshed crops following the introduction of the HarvestLab 3000 on the S700 and T-series combines.

By determining moisture, starch, protein and oil content, farmers not only benefit from a marketing standpoint, but they can optimise the use of fertiliser, seed, pesticides and fuel for producing a crop the following year. The data collected by HarvestLab on the combine is recorded in the Operations Centre, which is accessed through a PC or tablet. And it's this information that is the focus point from which connective planning begins.

What's important to understand at this point is John Deere is not telling farmers how to farm, but



Bottom: New software for strip tillage manure application requires both the tractor (below inset) and tanker to be equipped with Starfire receivers



encouraging them to use data they have at their disposal every day to farm more efficiently. This all starts with the production of combinable crops.

Take wheat as an example. The idea is to use a combination of yield monitoring and protein mapping as an indication of where protein is faltering in the field in relation to the crop yield. With oilseed rape the oil content and quality are the discerning factors. Protein content is an indication of nitrogen saturation within a field, while the crop yield is the first step towards monitoring the nitrogen uptake.

The idea is to eradicate the need for expensive chemical fertilisers. By understanding where the yield maximises in a field in relation to the protein content of the crop, the data can be used to optimise the application of readily available liquid manures such as slurry and digestate to ensure nitrogen levels are sustained and the soil is not left depleted.

Once the considerations for nitrogen application have been established using mapping data from the combine, the manure is injected into the soil. The application is controlled by HarvestLab manure-sensing technology. This measures the nutrient value of the slurry, then applies it at the required quantity needed to meet a target application rate according to the nutrient requirements for specific areas of the field.

Strip tillage

Effective fertilisation requires not only the redistribution of nitrogen within the field to suit the crop, but also bringing fertiliser directly to the plant roots. Doing this effectively with minimal impact on the soil requires the adoption of strip tillage. John Deere has developed new software for strip tillage manure application, which requires both tractor and tanker to have Starfire receivers. Using RTK guidance to ensure optimum accuracy, once the manure has been applied at a depth of 10-12cm the seed is immediately planted using a precision seeder.

Precise placement is assured using the AutoPath system, which records the position of the slurry belts as it is injected and stores it in the Operations Centre. GPS data from the tanker is then used to control the drill during planting. This is made possible by data connectivity, which John Deere claims is now more accurate than ever thanks to modern data cloud technology. Like the slurry tanker, the seed drill is also equipped with an additional GPS receiver that works in unison



Above: Mechanical weed control uses data gathered by the AutoPath system on the seed drill to guide a hoe or cultivator

Right: John Deere demonstrated its precision spot spraying technology using a trailed 36m R952i sprayer



Bottom: Using integrated active implement guidance mechanical weeding can be performed at speeds of up to 16kph without crop damage (below inset)



with the receiver on the tractor.

At work, even if the seed drill is following an irregular line or is cornering, the seed is always placed exactly above the slurry belt, usually around 7cm above the slurry, and the exact position of every seed planted is recorded.

Although many benefits are associated with optimised slurry fertilisation, the land on many farms can still require additional minerals. When required, nutrient data from the slurry can be used to determine the further need for mineral fertilisers. Additional support can also be provided by analysing the crop.

Using satellite or drone images, the recorded data and application maps can be imported into the Operations Centre and then used when applying the mineral fertiliser. Using drones to map the field can also identify areas of weed infestation and crop disease for the controlled application of pesticides.

The control of weeds

Connective planning requires two strategies for weed control. The first is mechanical weed control, which uses data gathered by the AutoPath system on the seed drill to guide a hoe or cultivator between the emerging rows to remove weeds and volunteers competing with the growing crop. Using two GPS receivers, this can involve steering the tractor, the implement or both. Integrated active implement guidance operates a hydraulic steering ram on a mounted hoe and because it knows exactly where the seeds are, it can steer the implement between the crop rows at up to 16kph.

The second strategy is controlled chemical pesticide application using spot or precision spraying. Utilising precision GPS-controlled systems, including AutoTrac in combination with existing section and single nozzle control, John Deere demonstrated the accuracy of its precision spot spraying technology using a trailed 36m R952i sprayer equipped with a PowrSpray pump.

Chemicals remain a necessity for modern crop production and are required to support mechanical weeding solutions. However, by adopting simple changes such as drone mapping for weeds, utilising precision band



By using the tanker to push the tractor you literally have eight-wheel drive on demand

two rear axles. With a 2800TRS Euroliner tanker filled with water, the eAutoPwr 8R 410 tractor pulled the heavily laden slurry spreader up a gradient. Once the tractor's tyres started to spin, the off-board electric system was applied, which immediately powered-up the electric motors on the tanker axles. The tractor's wheels stopped spinning and it surged forward, cresting the gradient without breaking a sweat.

By using the tanker to push the tractor, the weight of the trailed implement is used to increase traction without the need to add ballast to the tractor. That means less weight on the tractor and you literally have eight-wheel drive on demand.

Coolers keep the electric motors cool and the tanker employs an anti-jack-knife system in the drawbar to keep everything in line. Also, because it's the chassis that contains the motors, the Joskin design is now available to other manufacturers. The uses for this system are colossal.

MultiFuel

Even though you will not find MultiFuel as an option on any John Deere price list, the fact that John Deere has taken steps to produce an engine capable of running on bio-fuel is worth a mention. Basically, the tractor hardware is very similar to a standard oil burner. The main differences include the addition of larger diameter fuel pipes, pre-heating systems to keep the plant oil fluid and significantly more powerful fuel pumps.

When Rudolph Diesel invented the compression ignition engine in 1893 his strategy had been to develop an engine that could run on peanut oil. Almost 130 years later we're now re-exploring the feasibility of his original ideas. These are unquestionably interesting times. **EMJ**

and/or spot spraying technology, the reduction in chemical use will not only serve to protect the environment but also significantly reduce chemical costs.

The most important aspect of John Deere's sustainable farming formula is that it utilises equipment and technology that farmers have been using for years. The goal is to have complete connectivity between its agricultural machines by 2026.

eAutoPwr

John Deere's new eAutoPwr electric transmission is arguably one of the most practical and usable innovations for real-world farming we've seen to date. According to John Deere, eAutoPwr is the world's first continuously variable transmission (CVT) with an electro-mechanical power split. This means electric generators within the transmission are used in place of hydrostatics. In other words, the eAutoPwr uses brushless liquid-cooled electric motors to drive four mechanical gear ranges. There are no hydraulic components in the transmission, which means the design is simpler and the transmission provides real-time diagnostics.

John Deere has conducted more than 100,000 hours of testing with eAutoPwr, which as of November 2022 will be available exclusively as an option on the 8R 410 wheeled tractor. Described as being marginally more efficient than the current AutoPwr transmission, the new electric box actually reverses its motors to provide instant forward-reverse shuttling. And that's not all. As an option, the tractor can be specified with off-board electric power, which enables it to supply 100kW (136hp) of electric power to an implement.

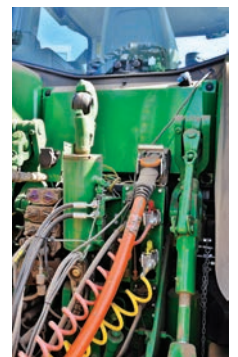
John Deere has been working closely with Belgian manufacturer Joskin, which has developed a tri-axle chassis platform that integrates electric motors on the

Left: The introduction of HarvestLab 3000 on the S700/T-Series combines now offers crop nutrient analysis in threshed crops

Below: Look closely at this 8R 410 and you can just see a pre-production version of John Deere's long-awaited central tyre inflation system

Below right: The new eAutoPwr 8R 410 was demonstrated pulling a heavily laden Joskin 2800TRS Euroliner tanker up a gradient

Bottom: As the tractor's tyres started to spin, the off-board electrical system applied power to the electric motors on the tanker axles. Off-board power is supplied at 480v AC or 700v DC via a cable from the tractor (bottom right)





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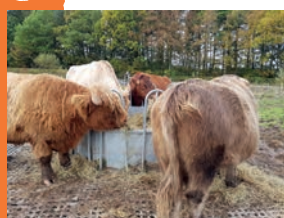
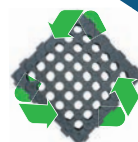


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Grove Farm and Pasture House Holiday Cottages is a family-run business whose main enterprise is farming free-range poultry, arable and renewable energy, plus recent diversification into holiday cottages. James Dean and his eldest daughter Sarah are, respectively, fourth and fifth generation farmers on this 300-acre farm, of which 90 acres are rented, located between Brandesburton and Beeford close to the East Yorkshire coast.

Pasture House had been sold by the family in the past but bought back in 2014 as a derelict farmhouse and farmstead, including stables. The holiday cottage project started in 2017 as part of Sarah's agricultural business course at Harper Adams University. It was subsequently recognised in the Pinnacle Awards at the annual Farmers Club rural business awards in London.



Above: Materials from old Pasture House and the adjacent stables were reused to create luxury holiday lets for up to 16 people on the farm

Below right inset: When not behind the wheel of a tractor, Sarah also deals with cottage bookings and routine daily duties for the holiday rental properties

In the early 20th century the farm featured brick and tile buildings to house mixed livestock and heavy horses were used to work the arable land. The old Pasture House was carefully and sympathetically demolished in order to reuse some of the materials to create two luxury holiday cottage lets, which opened in October 2021 for up to 16 guests on the farm.

The farm also hosts two wind turbines (11kW and 50kW output) and a ground-source heat pump system with over 2000m of underground pipes to supply heat and hot water for the farm and nearby holiday cottages. Both these renewable energy sources make the farm self-sufficient and produce a feed-in income.

Harvest time

At the time of our visit James and Sarah were busy bringing in the harvest of wheat and beans with their Claas Lexion 650 combine and mixed fleet of tractors to produce feed for their 26,000 free-range chickens. When not behind the wheel of a John



COTTAGE INDUSTRY

FMJ went to visit Grove Farm and Pasture House Holiday Cottages as the father and daughter team embarked on harvest with their Claas Lexion 650 combine and mixed fleet of tractors to produce feed for their 26,000 free-range chickens

WORDS **DAVID WYLIE** IMAGES **DAVID WYLIE/SARAH DEAN**



"We generally find we get a good crop of wheat after an oilseed rape crop"

Farm Facts

Grove Farm and Pasture House Holiday Cottages

Location Near Beverley, East Yorkshire

Farm type Arable, chickens, holiday cottages

Operators

James and Sarah Dean

Core fleet:

- Claas Lexion 650 combine
- John Deere 6130R
- John Deere 3050
- John Deere 8320
- John Deere 2140
- Claas Axion 820
- JCB 930 forklift
- Merlo TF40.7



Left: The farm is self-sufficient in chicken feed as they mill all their own home-grown grain

Right: An aerial view of the Deans harvesting this summer. James uses the Claas Laser Pilot system to keep the combine in a straight line



Left: Sarah spends most of her time in their newest tractor, a John Deere 6130R, seen here on trailer duties to keep up with the Lexion 650



Far left: Fifth-generation Sarah Dean works alongside her father James, who is the fourth generation to have worked the farm

Left: The current generation's great-grandmother Ena was born in the original Pasture House - seen here during its restoration

"Our 2140 is a great little tractor for getting into the tight spaces"

The John Deere 2140 is also called upon to haul the combine's Vario 770 header between fields



► Deere tractor, Sarah was also dealing with cottage bookings and routine daily duties for Pasture House and the adjacent Stable cottage.

August's exceptionally hot, dry spell of weather meant particular care had to be taken when harvesting their bean crop. Contrary to normal operating practices, James had to start harvesting in the morning while the beans were slightly damp,



Tractor fleet

The farm started out with tractors from International Harvester, however back in 1986 a little John Deere 2140 was their first from the brand and it's still used to haul and tip grain into tight spaces in the storage shed. It's clocked 8000 hours and has been very reliable. They also use it for moving the combine's header around the different fields and farms.



"Our 2140 is the only tractor without air conditioning, but are the beans is our last crop to harvest it's a great little tractor for getting into the tight spaces when our grain shed is nearly at full capacity," Sarah says. However her favourite tractor is the John Deere 8320 due to its size, comfort and performance. That said, Sarah spends much of her time corn carting in their newest tractor, a John Deere 6130R.

The farm also operates a 200hp Claas 820 Axion, which is considered the farm's best all-round and most versatile tractor and is used extensively for cultivating and drilling.

In the combine

This family-run farm started out with Scottish-built Massey Ferguson combine harvesters before investing in Claas combines. The current Claas Lexion 650 machine is their seventh from the brand, each combine being bigger than the last as James increased the acreage harvested.

Apart from a Claas combine bought new in 2013, the Deans generally favour buying good, well-maintained, pre-owned machines from their local Claas dealer. The current Lexion 650 was a pre-owned machine, three seasons old with 600 hours on the clock. James will generally rack up 150 hours on the combine each season.

"We like to buy Claas combines as we enjoy good sales and product support from our local dealer just two miles away," explains James. "And we've grown very familiar on how to get the best out of a Claas

Above inset: James Dean at the helm of the Claas Lexion 650 combine this summer

Left: The 200hp Claas Axion 820 is considered the best all-rounder and most versatile tractor in their fleet, while the John Deere 8320 is the most powerful

Far left: The 650 has a 7.7m-wide Vario 770 header, which provides an extendable table to cope with different crops



otherwise the head would just shatter on the combine table leading to significant losses of crop.

A six-year crop rotation strategy includes beans, wheat, barley and oilseed rape (OSR), followed by two crops of wheat again and then back to beans. "We generally find we get a good crop of wheat after an oilseed rape crop, perhaps because the OSR crop is sown earlier in the year," says James.

The farm is self-sufficient in chicken feed as all their grain is milled, including wheat and barley. They have also started using their beans as part of the feed mix instead of imported soya beans for their 26,000 chickens. Their almost 95 per cent productivity rate yield around 24,000 eggs per day. The oilseed rape crop is not used for feed but is sold off the farm.

Below right inset: 26,000 chickens have a high productivity rate that yields around 24,000 eggs per day

Right: Like all farmers, the Deans work long hours to harvest their crops, aided by the Lexion's work lights

combine and how best to maintain it. Our 650 is one of the bigger straw walker models and we find we obtain very good quality straw from it."

The Lexion 650 has no GPS fitted but does have a laser pilot to provide auto-steering and yield-monitoring technology. It features a 7.7m Vario 770 header, which provides an extendable table to cope with different crops.

Intimate knowledge

James is pleased with the overall performance of his Lexion 650, which will easily do 40t per hour in a good crop of wheat and sips fuel at a rate of around 45 litres per hour. However, with a relatively small acreage he does not use or see the benefit of yield mapping, nor do his contracting customers. They all have an intimate knowledge of how best to manage their soil for each acre.

"Since I drive the combine all the time, and using the yield monitoring, I've got a good handle on which parts of the field need more attention than other areas and soil types etc for variable seed rates and spreading fertiliser," explains James, who does



Below inset: Contrary to the norm, James had to start harvesting early in the morning while the beans were slightly damp, otherwise the head would just shatter on the combine table

Below: The farm uses a Merlo TF40.7 telehandler, seen here filling the Kuhn Megant seed drill

his own drilling using a 4.8m Kuhn Megant time drill.

James and Sarah are clearly satisfied with the performance of the Claas Axion 820 tractor, Claas Lexion 650 combine and their mixed fleet of classic and modern John Deere tractors. Not only have they invested wisely in traditional farming machinery for an arable farm operation, but more interestingly they have made the right strategic decisions to diversify. Their luxurious holiday cottage business, two powerful wind turbines and ground source heat pumps, which in today's climate of rising energy costs have proved to be extremely beneficial

and provide a more stable income stream and a much more sustainable farm for the future.

"While Pasture House and The Stables were a significant investment for the farm, we feel we made the right choice at the right time. Occupancy and income levels are good as a result of people wanting to holiday in the UK. And since we don't have a large arable farm, the cottages are a good way to spread our financial risk," Sarah concludes. **FMJ**

ACKNOWLEDGEMENT Thanks to James and Sarah Dean. Full details on the farm's cottages can be found at www.pasturehouseholidaycottages.co.uk



"Since we don't have a large arable farm, the cottages are a good way to spread our financial risk"





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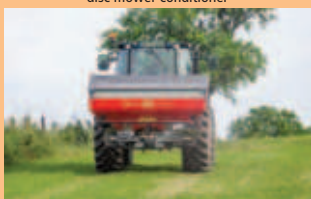
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MACHINE
BUNNING LOWLANDER MK2 175HD HBD

Precision application

The increasing value put on manure and other natural products has meant a significant upgrade to the manure spreading fleet run by Adamson Contractors

WORDS AND IMAGES EDD MOWBRAY

As fertiliser prices continually prompt farmers to look at alternative sources of crop nutrition, the increase in demand for precisely applied organic manure has kept Adamson Contractors' five Bunning Lowlander 175HBD machines and a dedicated team of seven operators busy throughout the year.

Based in North Yorkshire and run by David Adamson alongside sons Steven and Martin, the contracting outfit has always had a keen eye on applying products accurately. This attention to detail, along with investment in the correct machinery, has seen the spreading side of the business grow considerably over the past four years.

A 50,000t-per-year sewage sludge contract was taken on in 2018 and, at the time, the company ran a brace of 12t vertical beater machines, helping local farmers spread their manure after harvest. However, to correctly apply the sludge at the rates required and comply with legislation and regular site inspections from the waste management company, running machines with a greater control over application accuracy was key.

Mr Adamson had three different machines on demo and spoke to a few contractors who used Bunning machines. It was soon clear that the HBD spreaders offered him flexibility to spread all types of manure along with other natural materials such as lime. "We needed machinery to spread precisely to 24m and at a



Above inset: The spreaders all feature an extension guard at the front

Below left: Steven and Martin work alongside their father David Adamson in the contracting firm

Profile Adamson Contractors

Machines Bunning Lowlander MK2 175HD HBD x 5

Purchased 2018 (x2), 2020 (x1), 2022 (x2)

Used for Spreading compost, muck and sludge

Operators David, Steve and Martin Adamson plus team of seven

Location North Yorkshire

"We needed machinery to spread precisely to 24m"



target rate that varied from field to field," says David Adamson.

Spreader investment

The investment in two Bunning Lowlander 175HBD spreaders allowed the sludge to be spread from July to October and meant the spreaders could drop on to jobs with varying products at other times of the year. Part of the reason for choosing Bunning was the consistent application to 24m, as the dynamically balanced horizontal

beaters feature Boron shredding cutters to break down the bulky material to an even consistency.

The 1.1m-diameter spinning discs feature five adjustable blade positions to alter the spreading width and apply the product evenly. The 175HBD machines can carry 17.5t and feature a heavy-duty driveline and fully welded construction.

"Buying two new machines was a significant step up in output, but also accuracy of spread width. During the demo the Lowlander spreaders created a carpet over the field as they applied. The combination of the horizontal beaters and discs offers an accuracy that just wasn't possible with the other equipment," says David Adamson.

One further investment by the contracting business was in a Claas Torion 1814 loading shovel to keep turn-round times to a minimum and increase outputs. Mr Adamson says he was told that 600t a day was achievable by loading the spreaders with a telehandler, whereas with a loading shovel the figure could be 1000t a day.

Farm manure increasing
The two machines handled the



Left: Two of the Bunning HBD spreaders at work behind the Fendt 828s

Below left: The HBD machine is a popular model and the 175 spreaders find favour with large-scale farmers and contractors

Below far left: Hydraulic border spreading is a useful feature when working close to the field edges

sewage spreading works as well as the local farmyard manure applications during other parts of the year. As farmers saw the benefit of increased accuracy, a third 175HBD was added in 2020 to keep up with demand. The three machines could run together if required, but also handle separate jobs from existing customers.

In 2021, the business hired in two vertical beater spreaders to get through the farmyard manure workload, which was increasing year on year. However, customer feedback was less than glowing about the hired machines. "There wasn't a lot of enthusiasm from our customers about having their manure spread by the hired vertical auger machines. It was nothing to do with the brand, but the Bunning HBDs had done such a good job of breaking down the bulky manure and shown farmers the huge benefits of applying a product in this way."

This upturn in demand for the Bunning spreaders on products such as compost, farmyard manure and chicken litter, meant the three existing machines were too stretched at peak times, as the sludge contract was demanding three spreaders to be most effective.

The contractors took delivery of their fourth and fifth Bunning 175HBD machines this summer, to help handle the spreading workload that now stands at around 115,000t per year. "With just three machines, we'd either be reducing output of the sludge team by only running two

Left: A Claas Torion wheeled loader was purchased to boost loading capacity to 1000t a day

Below left: Wide-angle PTO and Scharmuller ball hitches reduce continual wear from shunting

The spreaders have a near-identical high specification, which helps if operators must switch machines



“The value of manure means it must be spread in a way that is accurate”

Right: The 175HBD machines can carry 17.5t and feature a heavy-duty driveline

► machines, or not being in two places at once if they all ran together.”

When he purchased them, David was unsure if his workload would justify keeping all five spreaders, but the advantages of spreading the risk and workload, while allowing the older machines to carry out the smaller jobs, has been really helpful. A Schafer pivot-steer loader was bought to keep the pair of spreaders loaded.

High specification

A mix of German tractors are used to power the spreaders, with two Claas Axion models - a 920 and 950 - along with a Fendt 936 on the sludge spreading team, and two Fendt 828 models handling the bulk of the farmyard manure jobs. All the Lowlander spreaders are ISObus

ready, which makes operation a lot easier through the in-cab terminals.

The spreaders have a near-identical high specification, which helps if operators must switch machines. Accurate tonnage records are logged via the on-board weigh cells and all use on-the-go rate control, which is crucial to comply with the audits carried out on a weekly basis by the waste management company.

The rate control uses the four weigh cells located on the body and recalculates the rate based on forward speed and changes in product density. The rate is then adjusted by altering the speed of the full-width walking floor. However, it

is the option to offer variable rate spreading via the Bunning HBD machines that the contractor believes will be a big part of its work

in the future.

“As manure becomes more valuable, having the ability to target specific areas of the field with the exact nutrients required will allow growers to assess what effect the manure is having on their soil. It makes maximum use of their investment in soil mapping and our investment in the technology to apply it accurately.”

All machines have the adjustable rear canopy that can alter the spread pattern for different products, along with wide-angle PTOs and road lighting packages. Another option on the most recent spreaders was the switch to larger diameter tyres -

Below: Spreading compost with one of the fleet's two Claas Axion tractors

Below right: The contractors took delivery of their fourth and fifth Bunning 175HBD machines last year



Changing trends

Ben Johnson, sales manager at GT Bunning and Sons, says the HBD machine is a popular model and the 175 spreaders find favour with large-scale farmers and contractors.

“There has been a significant increase in farmers using the manure they are producing in a more focused way to benefit the wider business,” says Mr Johnson. “Testing manures to find out the nutrient values and then applying it to fields using variable rate maps based on nutrient deficiencies is changing the perception of farmyard manure and the value it holds in agriculture.

“It used to be viewed as an inconvenient waste product, but there has been an increase in contractors needing extra machines, or farmers buying their own where the option for using a contractor is limited.”

The application technology is now a big factor when buying muck spreaders and having weigh cells to know what quantities are being applied and rate control to change application rates on-the-go through an ISObus screen makes life easier for the operator and helps with record keeping and other office admin.



The machines can run together if required, but also handle separate jobs for different customers



BKT 750/75 R46 - in a bid to raise the angle of the spreading discs. "This means we can now spread evenly into standing crops later in the spring, as the height of discs has been raised by the new tyres," says David.

The latest machines have been purchased through local dealer Rickerby and the back-up from both the dealer and Bunning has ensured any issues are dealt with immediately. "We deal with Rickerby, but the back-up from Bunning is excellent. They can diagnose over the phone and parts are dispatched the same

day. We had a gearbox fail on one of the older machines and Bunning sent someone from Norfolk within hours of the call with all the parts and we were up and running again the next day."

Keeping five spreaders busy throughout the year is a tall order but having multiple reliable machines offers Adamson Contractors the option to keep customers happy and guarantee the spread quality from any of the five machines.

Spring spreading

The benefits to the environment through quicker absorption of manure and nutrients into the soil and an even coverage no matter the product, means the HBD spreaders are now integral to the business.

"The market has changed and there is now a smaller pool of customers that I can take a vertical auger machine to. This has been driven by the price of fertiliser and the value farmers are now attaching to manure means it must be spread in a way that is accurate and accounts for every tonne."

The dry spring in February 2021 saw the spreading workload increase considerably and all three machines they owned at the time were spreading farmyard products on to arable crops for a constant six weeks, which Mr Adamson admits surprised him.

"The demand for spring applications has been growing, and the HBD machines create and spread a consistent product that is top-dressed to growing, hungry crops, so bought-in fertiliser can be scaled back. There are no big lumps of manure that sit in the crop for weeks waiting to be broken down and losing nutrients to the atmosphere, and the canopy of manure helps to retain moisture in the soil," concludes David.

FMJ

Tech specs

Bunning Lowlander MK2 HD HBD
Axle Single
Capacity 17,500kg
Cubic metres 18 level, 23 heaped
Body size 5.82x1.6x1.58m
Floor drive Hydraulic
Chain size 20mm
Mechanism Spinning disc
Spread width Up to 30m
PTO speed 1000
Unladen weight 9500kg

Above inset: All the Lowlander spreaders are ISObus ready, which makes operation a lot easier through the in-cab terminals

Left: Two Fendt 828 models handling the bulk of the farmyard manure jobs

Above far left: Switching to BKT 750/75 R46 tyres has raised the angle of the spreading discs



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MACHINE
CLAAS LEXION 5300

Welsh wonder

North Wales contractors Jones Brothers upgraded from a Claas Tucano to a Lexion in 2021. *FMJ* caught up with operator Steve Parry cutting some very ripe barley to find out how the combine has been performing in the local conditions

WORDS AND IMAGES **KEN TOPHAM**

North Wales isn't one of the UK's best-known arable areas but there is good growing to be had in the lowland areas. Jones Brothers have been running Claas combines since the days of the Senator machines, and Stuart Jones only handed over combine duties to Steve Parry in the last couple of seasons. Despite not being at the wheel, Stuart has been pleased with the Lexion after specifying a machine he thought would best suit their customers.

"Our Tucano was due for replacement and we wanted a little more output without going to a machine that our customers couldn't cope with, both in terms of output but also straw swath volume," Stuart

explains. "The 5300 is ideal while still being easy to move."

The Lexion 5300 has the four-drum APS Synflow system, which provides 2.27m² of primary separation area, and this has been Steve's largest learning curve with the combine. A Claas user for years, like many of us who have driven a single-drum machine, he has worked with drum and concave settings stored in his head. These settings could be called up and tweaked from crop to crop.

Steve admits that he thought the threshing settings must be a misprint and went into his first field with some more familiar settings. "I was not convinced by what the book said," he explains. "It seemed like the drum was way too slow and concave



Above: The 5300 is as close to a Wales-spec Lexion as you can get. It suits the area very well, with high mobility ideal for local field sizes and access

Left: Lifters on, the crop was over ready and needed assistance. The Cerio has mechanical fore and aft adjustment for the knife but it's not as convenient as fitting lifters



Profile

Jones Brothers

Machine 2021 Claas Lexion 5300

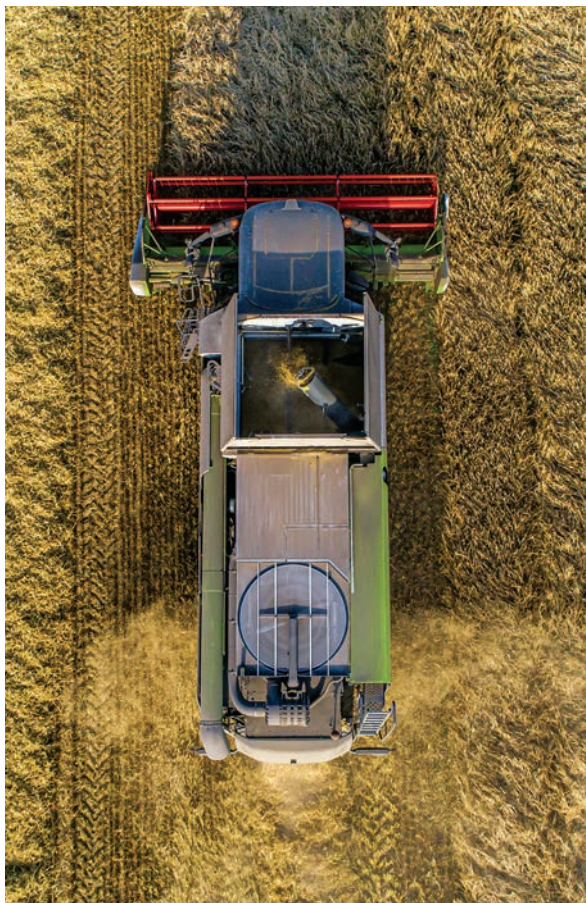
Purchased 2021

Used for Two seasons

Operator Steve Parry

Location Holywell, North Wales

Left: Operator Steve Parry has driven many Claas combines but wouldn't go back from the Lexion



wide. I thought there's no way it'll thrash the crop and would probably block, but it did with minor tweaks."

But after a few rounds and a look at the sample and straw he relented and selected a preset from the CEBIS menu, to which he made only slight tweaks. The typical North Wales customer for Steve puts value on the straw, which is partly why he felt the Claas recommendations wouldn't work. "They like to shave the mole's whiskers," he says of the stubble height his customers like. "With more straw going through you do have to make slight adjustments, but to be fair they are minor."

The five straw walkers on the 5300 provide 6.37m² of secondary separation area, and the Lexion has 18 degrees of side slope correction and six degrees of up and down in the sieves, which have 5.10m² of area. The high value of straw in the livestock-heavy local farming industry means the straw walker combine is ideal.

"The straw quality is very good," Steve says. "The only time I've found it breaking straw was in over-ripe crop, which you'd expect, and on

very hot days of the last harvest, where there was more broken straw, but generally customers are very happy and prefer the straw to that from a rotary machine."

Cutting for crimping

Due to the livestock customers, Steve cuts quite a lot of wheat and barley for crimping, so cut as the grain is still slightly soft, rolled, treated and stored for dairy ration. As a result, the moisture of the grain is higher and often the straw may not be quite fit either, but the 5300 has impressed in that area. "I've been really pleased with how it performs cutting for crimping," Steve says. "You have to slow down but the feed is smooth and separation is excellent. The sample stays clean too."

Grain loss is a touchy subject when it's a customer's crop. They hate to see a green stripe in the back end of the year, but Steve says a combine specialist gave him a good tip: when you put your hand flat on the floor under the swath, if there are five grains in that area you're at about one per cent loss, which is pretty respectable. "The header is only 18ft

Tech specs

Claas Lexion 5300

Engine Mercedes-Benz OM936LA
7.7-litre, 6-cyl

Power 313hp

Transmission
Two-speed, manual

Weight 16.15t
(without header)

Threshing drum width
1.42m

Diameter 755mm

Speed 330-930rpm

Concave wrap angle
132 degrees

Main concave area
1.3m²

Separator drum diameter
600mm

Area 0.97m²

Straw walkers 5, 3.8m

Secondary separation area
6.37m²

Sieve area 5.1m²

Grain tank
9000 litres

Unloading rate 110
litres per second

Fuel tank 950 litres

AdBlue tank 110 litres





Above: Familiar cockpit includes the latest armrest arrangement. After a small learning curve feedback on the interface is good



Left: CMotion levers are now standard in Claas machines. Steve wasn't convinced to start with but is now a convert

"Customers are very happy and prefer the straw to that from a rotary machine"

but people don't realise that the wider the header, the losses will be more concentrated under the swath if the grain is being carried by the straw, so it'll still be within spec."

One of Steve's dislikes with the loss monitors is when the straw is very dry and when you have inconsistent crop he thinks that small pieces of straw trigger the monitors and give a false positive. "I've been caught a couple of times, seeing the monitors go up you get off and have a look but the losses look okay. It also seems to happen if the machine isn't running full," he says, adding that this year's harvest was a good time to learn how the Lexion ticks. "It was nice to be able to cut in ideal conditions and find the limits. It definitely works better when it's full."

Steve found the limit in a 4.5t-per-acre crop of wheat destined for crimping. "It was a cracking crop but the straw was still a bit green," he explains. "Separation was good and the swath of straw was huge, but the combine ran out of power to unload on the move. It wasn't a problem, nice to be cutting such a nice crop, so we just unloaded on the headland."

The Mercedes-Benz OM936LA Stage V motor is rated to 313hp with Dynamic Power as standard. Diesel use is favourable, Steve saying he can cut 140 acres on a full 950-litre tank, which takes him two and a half days on average. AdBlue consumption is very light, with a reduction over the Tucano. The 110-litre tank lasts for a few diesel fills rather than it being a daily chore.

The 5300 is the smallest Lexion on offer but output has been pleasing, topping 55 acres on the best day in North Wales where average field sizes are 15 acres and trailers generally 10t capacity. Cutting width is a factor in output and the Cerio 560 header was specified because of location. "The 560 header is enough for most places, especially getting in and out of tight gates and narrow lanes, and I tow the header behind to the farms so it's usually a customer who's moving it."

Two will do

The Lexion is on wheels as opposed to tracks, with no rear wheel assist required as most customers in the area grow their cereals on their flatter fields. "We do cut on undulating hills but nothing steep enough to need four-wheel drive," Steve explains. "Most have learned that if the year



Left and above left: Chaff load wasn't heavy in this crop but the power spreader distributed the residue well



Above: Access platforms make getting to key parts of the 5300 safe and easy. The engine bay has one panel for maintenance checks (above left inset)



Left: All-round views are boosted by good arrangement of mirrors so there are very few blind spots



Above: In the wake of the Lexion, even in an over-ready crop, the straw is still fairly intact and well presented for the baler

"The 560 header is enough for most places, especially getting in and out of tight gates"

► is bad and they plant on steep ground it ends up in a mess."

The Cerio header does have knife adjustment and 10 fasteners underneath allow +/-100mm forwards and backwards in 50mm increments. Steve says he probably wouldn't adjust it unless he had a very difficult crop to deal with, and at default setting he can usually get a good feed on the header with reel adjustment.

Delicate separation

After a call to cut some beans, Steve took the combine to a farm wanting to try a straw walker machine for a more delicate separation, who made their 25ft Vario header available to try on the 5300. "It was quite the step up from the 18ft header but the 5300 handled it well," Steve says. "It was a

good set-up for flat fields." Only minor adjustments were needed to work with the Vario but the straw chopper and chaff spreader were not set to suit and were left at 5.6m as it was only tens of acres and hardly worth the adjustment.

Daily checks are easy on the 5300. The stone trap can be emptied standing at the side of the feeder housing and the combine stays reasonably clean. However, Steve was blowing the engine down every two to three hours during the hottest days in wheat, as it was extremely dusty and he didn't want to take any chances. He's also found the lubrication routine easy with well-grouped points clustered in intervals.

With only a hint of automation compared to some current combines,



Top: The cooling pack stayed clean, tested by the 2022 harvest, although Steve did blow the combine down every two to three hours to reduce fire risk

Above: Cerio models have the simplicity of a fixed header and the drives and sensors of their larger Vario and Convio stablemates

Below: Unloading on the move takes more ponies but the 5300 only ran out in a heavy crop of wheat cut early for crimping

the 5300's biggest in-cab differences over the Tucano are the screen and CMotion controls. The screen has been well received, is easy to use and read, while the lever is said to "look like a bread roll or something". As a first impression from an operator who has used many Claas machines, it probably wasn't the reaction the designers were looking for, but Steve adds: "After a few hours I got used to the CMotion and wouldn't go back. It's hard to imagine it would be comfortable to use but it really is."

With 730 acres cut in 2022 the Lexion has performed well, resulting in happy owners, operator and customers. As straw quality is higher in value in this part of the world, the straw walker combine is still a firm favourite for livestock customers to get good life out of the straw in loose housing, and with crimping part of the workload Steve has been pleased with his machine choice. The Lexion has ticked all of his boxes.

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► **Martin Ross**

Reflecting on 50 years in business



This year marked a significant milestone for Fendt dealer Ross Agri Services Ltd. Its managing director reflects on the changes during his 22 years of service in the 50-year-old company

“Farming has changed, machinery has changed and technology has brought the biggest fundamental changes to agriculture in the 50 years we have been in business. I have had to adapt the service we offer our customers to react to the way technology is influencing the way they farm.”

Working with Fendt, Martin has had to adjust to the speed of change faster than most. The AGCO brand has been at the forefront of pioneering agricultural technology and has expected its dealers to keep pace.

“When I started, there were three questions I would ask a customer to specify on a new tractor: do you want front linkage; how many spool valves do you need; and what tyres would you like? Now I may as well be speaking a foreign language to some customers, if I were to list off all the various options,” he says.

There is no doubt in his mind that the development of new technology is helping agriculture to be more sustainable and productive. However, he also recognises the impact this has had on the business and how it has challenged it to deliver an ever-diversifying range of services.

“Our customers are having to run tractors for longer hours to see the return on the ever-increasing investments they are expected to make. It is our job to make sure these

Managing director Martin Ross joined the family business Ross Agri Services Ltd to work with his parents in 2000.

Right: The service level expectation has seen Ross Agri Services invest in staff who specialise in modern farming technology

Below: Ross Agri Services have skilled engineers who offer welding and fabrication at St Cyrus base

hours are as stress-free as possible. We are fortunate to have the Fendt franchise that offers 8000-hour warranties but, with the cost of tractors almost doubling in 20 years, many are looking for fixed costs to help manage their farming enterprises.”

Used Fendt tractors with as many as 10,000 hours are supplied with 12-month warranties, which Martin

suggests represents a shared commitment between manufacturer and dealer to deliver on their promises.

“Selling premium brands is one thing. We are never going to be the cheapest and we are often unapologetic about being the most expensive. The value is in the after-sales service. We pride ourselves on being able to offer our customers a one-stop shop, everything from manufacturer-trained diagnostics to CNC precision engineering. It is a challenge to move at the speed that technology is pushing agriculture, but we have made it our mission to work with the best brands and give our customers the support they need,” Martin concludes.

FMJ



“We are often unapologetic about being the most expensive. The value is in the after-sales service”

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View from the seat

Machinery cabs have become offices, canteens and a social space for buddy-seat dates, and many operators spend serious hours behind the wheel. Here's how Andrew Orme has customised a Valtra N154 to suit his needs during long stints at the controls

WORDS AND IMAGES **KEN TOPHAM**

The previous owner of Andrew Orme's stunning Valtra N154 went to town in the Valtra Unlimited shop. As a result, it sports a mega spec for a tractor of its size, ideal for Andrew's first commercial workhorse not from the classic era.

The Valtra is Andrew's first nearly-new tractor in his contracting business, which caters to hedge-cutting and flail mowing for local industrial sites, as well as working with farmer Olly Harrison, where the Valtra was flat out this harvest shifting bales and hauling cereals.

There is usually a big list of add-ons with these features, but as this tractor went through Valtra's Unlimited studio when ordered through dealer John Bownes, Andrew hasn't had to add much at all.

Orange Crush

The metallic Candy Orange paint job is the most noticeable feature and catches the eye, ideal for Andrew's autumn chores of hedge-cutting and flail mowing. He has also added some reflective tape to the wheels, which is another aid to being seen at night. The N154 was kitted out with LED work lights from new but the cab-top road lights were a little lacklustre so Andrew sourced the correct pairs of main beam and dip units from UTV Products, which he says make a massive difference.

Inside the cab were only a couple of things to add - a TTI CB radio and an official Valtra floor mat, which goes all the way round the seat. A camera mounted in the cab displays through the screen and is a factory fit, while the tractor also features Valtra guidance with RTK accuracy.

Andrew has put 600 hours on the tractor in six months and although he drives some larger Fendt and 900 tractors for Olly Harrison, he says the Valtra stands up for comfort with axle and cab suspension. In fact, his only gripes are the forward-reverse switch and, like everything else on the market, a lack of tool storage.



Machine
2019 Valtra N154
Operator
Andrew Orme
Location Prescot,
Merseyside

KEY UPGRADES

• **TTi TCB 1100 CB** £130
truckstuff.co.uk
• **Whistle horn** £25, ebay.co.uk
• **UTV Products low-beam replacement** £75
each, ledlightsforsale.co.uk
• **UTV Products high-beam replacement** £75
each, ledlightsforsale.co.uk
• **Valtra carpet** £40, johnbownes.co.uk
• **XFXIA orange reflective tape** £12.99,
amazon.co.uk

The N154 offers a pleasant workspace, with plenty of storage and an opening sunroof



Above inset: Owner-operator Andrew Orme bought his second-hand Valtra N154 from John Bownes in Cheshire





Cab up close

1 The CB slots neatly into one of the spare ISO locations alongside the climate control switches.

2 The factory-fit camera displays on the screen. It's a feature that should be standard on all new tractors.

3 Reflective orange tape round the wheels increases visibility at night - it's a brilliant safety addition.

4 UTV Products LED high and low beam replacements go straight into the OEM mount to give brighter lights.

5 Adding some volume to the rather tame factory-fit roof horns is this Wolf Whistle!

6 Valtra mat goes right round the seat, which would be a bonus for reverse-drive machines.

7 A well-stocked tote tray with cleaning products fits perfectly behind the seat.

8 The armrest is the same as the larger T series so everything is at your fingertips.

9 The control lever has gone down well; the forward-reverse set-up is the only niggle.

10 As well as a front linkage and PTO, the Valtra has five SCVs and mid-mount outlets.

11 The Quicke G5 loader is a very useful addition. It uses a quick-hitch attachment block so it can be installed quickly.

12 The Beam horns are road legal spec but the reduced decibels don't always have the desired effect.

Andrew's Candy Orange Valtra N154 stands out from the crowd in its custom factory livery



10 QUESTIONS WITH...



Calum Smalley works for large-scale contractor A.J. Long, carrying out a multitude of silage and slurry operations with big machines from a Krone BiG M to Liebherr loaders

IMAGES KEN TOPHAM/CALUM SMALLEY



Calum Smalley took charge of A.J. Long's Krone BiG M for the 2022 mowing season

“Every accident, or every time you bend or break something, it's a learning curve”

and moving from one field straight into another without even having to fold up, with nice big open fields and minimal obstacles. Worst day - buckraking a heavy first cut for two Claas 970s in big open fields. Two of us were buckraking but the other man was new to the job and was

thrown in at the deep end. We were under pressure all day, then I backed into the last trailer of the day. Fortunately, it only smashed the trailer light.

FMJ: What don't you climb into the cab without?

CS: Tool box, mobile phone and charger, and cold drink. We usually get fed by the customer so rarely bring food in the summer.

FMJ: What tools are essential to keep on the tractor?

CS: Full set of spanners and sockets 10mm-32mm will do most field adjustments.

FMJ: What development do you think has really transformed farming?

CS: Technology. We use guidance quite a lot, which increases efficiency. And flow meters for slurry, to improve spreading rate accuracy.

FMJ: What machine would you like to get your hands on?

CS: A Claas Jaguar 970. We have two in the fleet but I haven't got my hands on one yet. A swap with the forager driver when you're buckraking would be ideal.

FMJ: What's playing in the cab?

CS: BBC Radio 1, Heart or music from my phone.

FMJ: What advice would you give to young and aspiring operators?

CS: Every accident, or every time you bend or break something, it's a learning curve. Be prepared not to get the best jobs but stick at it. *FMJ*

FMJ (Farm Machinery Journal):

What was the first tractor you operated?

CS (Calum Smalley): I passed my tractor test on a new Holland TL 100.

FMJ: What is your current tractor?

CS: A 2019 Fendt 724 Profi+ and the Krone BiG M.

FMJ: What's your favourite machine you've operated?

CS: The Krone BiG M. I've been driving it a lot in the last season and it's a nice job in the grass season.

FMJ: What's your best and worst day?

CS: Best day - mowing at a customer who cuts 450 acres, or thereabouts,

Below: A 550 wheeled loader is one of two Liebherr machines in the buckraking fleet



When he's not mowing or on the clamp, Calum gets behind the wheel of a Fendt 724 Profi+





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Corvus Terrain EX4



Quadzilla E-UTV

Charging ahead

Electric vehicles are rapidly gaining popularity on British farms, with a wide range of quad bikes, side-by-side UTVs and pick-ups to choose from

IMAGES MANUFACTURERS

Electric cars are widespread and battery-powered machines are slowly joining farm fleets too, so it's only logical that farm transport should follow. Electric quad bikes, UTVs and pick-ups offer zero emissions, huge amounts of torque and claim to be cheaper to run than diesels.

The technology employed in electric vehicles is developing at pace, as ever-increasing ranges and power outputs allow vehicle manufacturers to develop lighter, more powerful vehicles. In some instances there are even battery conversion kits available to replace petrol and diesel engines.

Polaris Ranger

One of the first true electric utility vehicles came from Polaris. The Ranger EV was originally launched in 2010 and has been continually developed ever since. The latest version uses a 48v AC induction motor with a variable transmission with high and low ranges and four-wheel drive. MacPherson

strut suspension up front and dual A-arm independent rear suspension give 9in of travel and 10in ground clearance, making this a capable off-roader. Payload is 453kg with a 680kg towing capacity. Prices start at £14,699 plus VAT.

Corvus Terrain EX4

Boss Off-road Vehicles has launched the Terrain EX4 electric UTV. It achieves 40kph (25mph) and is approved to EU T1a standards and equipped with automotive safety windshield glass, three-point belts, indicators, headlamps and brake lights, horn, mirrors and windshield wipers. The electric battery is 15kWh lithium ion and a dual-power selector gives a choice of Range and Power modes. Load capacity is up to 300kg. Three versions are available, with prices starting at £25,499 for the EX4 Base EPS, £26,499 for the EX4 Pro EPS and £28,499 for the EX4 CAB EPS.

Fering Pioneer

A new British company has launched an

electrified pick-up that is available to pre-order now. The Fering Pioneer is powered by two electric motors, one on each axle. They provide a total of 600Nm of torque. A battery provides an electric-only range of around 50 miles, and a 70kW multi-fuel range extender generator is available to extend this up to 7000km between refuelling or charging – yes, you read that right.

Dry kerbweight is around 1500kg using an aluminium space frame with composite elements, while the exterior panels are made of tough fabric. Payload is claimed to be 1500kg.

The Pioneer is built with off-roading in mind. It can climb 60 per cent inclines, traverse 50-degree slopes and wade water 1.4m deep.

Maxus T90EV

Chinese brand Maxus offers the first all-electric pick-up in the UK. The T90EV is available to order now, and deliveries are set to commence in 2023. Essentially, it's a large



Emotive



Polaris Ranger



Nipper utility vehicle

double-cab pick-up with an 88.55kWh battery pack that powers a 150kW electric motor, which is equivalent to 204hp. Range is said to be up to 220 miles per charge for a combined driving cycle. The T90EV is rear-wheel drive only and payload is 1000kg. Prices start from £49,950 plus VAT.

Eco Charger ATVs

Devon-based Eco Charger has doubled its working capital facility from HSBC UK to £350,000 thanks to the UK Export Finance's General Export Facility (GEF). This flexible funding allows the business to import its electric quad bike frames in much larger and regular quantities, speeding up production to meet the increasing global demand for its range of five electric ATVs.

Eco Charger was set up in 2011 when founder Fred Chugg recognised a gap in the market for electric powered ATVs. The business has now been able to expand into America, Europe and Australasia, more than tripling its exports in the last year and enabling the company to double its workforce across the UK.



Eco Charger ATVs

Emotive

A zero-emissions all-terrain vehicle is in development by Devon-based Emotive, dubbed an eco alternative to vehicles like the Unimog. A crowd funding campaign will allow the company to take the vehicle to the next stage of development ready for demonstration and mass production. The aim of the electric vehicle is to address the gap in the 6-12t market using a bespoke chassis and electric drive to each wheel, whether two-, four- or six-wheel drive.

Quadzilla E-UTV

Quadzilla's new electric UTV is a two-seat, road-legal vehicle with a 9.7kW electric motor that offers 15Nm of torque and a range of up to 100km when unladen and travelling at 30kph. The simple transmission offers forward and reverse, with power or economy modes, and top speed is 40kph.

The E-UTV uses MacPherson front suspension with double A-arm independent rear suspension, hydraulic brakes and has a 400kg capacity metal rear tipping body. Towing capacity is 680kg.

Low maintenance costs come from not needing fuel, engine oil or filter changes. In the cab are a digital dash with speedo, odometer, trip counter and clock. LED headlights and tail lights also feature.

Nipper utility vehicle

The Nipper is a nimble, fully road-legal 4WD UTV, complete with electric rear tipper and powerful 5kW motor giving a top speed of 28mph. Supplied with a lithium-ion battery, it has a range of up to 75 miles on a single



Maxus T90EV

charge and comes with a smart on-board charger fitted as standard. The vehicle is fitted with a high and low range and diff lock, gas-assisted adjustable shocks, power steering and a front winch. The UTV has a cargo bed capacity of 200kg and a towing capacity of 750kg. The Nipper is exclusively available from Electric Wheels and prices start from £13,495 plus VAT. It is also available to hire from the company at £275 plus VAT per week and can be supplied road-registered.

Electrogenic Land Rover kit

British EV technology company Electrogenic is expanding its Powered by Electrogenic division, which offers EV powertrain

conversion technology as drop-in kits to replace traditional engines in vehicles.

A Land Rover Defender EV conversion kit developed in partnership with Innovate UK and tested at Worthy Farm, host of Glastonbury Festival, was launched this year.

Three 'drop-in' kits for the Land Rover Defender are suitable for Ninety, One Ten and Defender models pre-2016 and include a 120kW or 150kW water-cooled motor. The 310Nm motor delivers 900Nm directly into the transfer box via a bespoke helical ground gear set. The kit retains the Land Rover's transfer case and permanent four-wheel drive. 62 to 93kWh batteries are located under the bonnet and behind the rear axle and can use rapid charging. *EMJ*



Fering Pioneer



Electrogenic Land Rover kit



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Compact Bavarian

Compact wheeled loaders have always been popular on UK farms, especially where space is an issue, and the Kramer 750 has gained an impressive reputation for reliability

WORDS HOWARD SHERREN IMAGES LANDINI/HOWARD SHERREN



Kramer started life building tractors back in 1925. However, as the leaders of the agricultural industry continued to dominate the tractor market they decided to leave this sector and excelled elsewhere. It was a wise move, as other manufacturers in Germany unfortunately faded into history.

Building wheeled loaders has been Kramer's core business since 1973,

Below: The 750 was one of the smaller models in Kramer's range but boasts an impressive 3t lift capacity and almost 3m loading height

when it ceased production of tractors and concentrated on the construction market. The four-wheel steer market was deemed the main area for investment and in 1987 the Kramer 312 became the key focus and one of the company's best sellers.

Taking the lead

Development saw the 312 evolve and eventually the 750 model was revealed in 2004 to take the lead in the compact wheeled loader market.

Launched as the smallest model in the 50-series, the 750 was joined by the 850, 950 and 1150 units, while 780 models and upwards gave more specification and greater road speed.

The 750 made its way to the UK in good numbers following its launch in 2004, when it competed in the 60hp sector. This new machine was a jump forward in terms of operator comfort and machine efficiency. Not only was it compact enough to fit into small buildings and tight passageways, it

"Wheeled loaders have been the core business of Kramer since 1973"



► could also lift up to 3t, more than most leading standard 5-6m telehandlers at the time.

The key to the design was a heavy-duty rigid frame that could take the load and give stability, while steering axles front and rear have the benefits of a normal telehandler, combined with good visibility and the central mounted boom of a wheeled loader.

As operators began demanding more, Kramer felt the need to introduce a telescopic machine, which saw the launch of the 750T in 2009. Featuring a telescopic boom that helps increase loading height to 4m, it became the more popular model. Production came to an end in 2015 when Kramer moved away from the yellow paint scheme to the new green and grey livery.

Deutz to the rear

The Kramer utilises a rear-mounted engine, as you would expect for a central boom machine. The Deutz D2011 L04 W unit is a four-cylinder, 3.61-litre engine pumping out 61hp at 2300rpm and torque hitting a maximum of 210Nm. The engine is mounted across the machine, while the radiator and fan sit to the right and the air intake and hydraulic

pumps to the left as you open the bonnet.

Oil and fuel filters are all easily accessible from the back, but the starter motor will be trickier to replace if a failure occurs. Check the coolant pipes and fittings for condition and leaks, also the pump and radiator itself for signs of coolant loss. Also check the exhaust silencer for cracks and broken mounts.

Smooth CVT

The transmission in a Kramer is a continuously variable (CVT) unit that offers speeds from zero to 30kph, which means the loader will only move when engine revs increase, unlike torque amplifier competitors. This can be an advantage as it leaves less pressure on the braking system.

The 750 and other models in the series offer up to 30kph road speed, while a 40kph version is available on the 80 series models, meaning the smaller units are more at home in the yard rather than on the road.

Underneath the 750 are planetary steering axles with hydraulic disc brakes. They can steer through 40 degrees to achieve a 2.55m turning radius. A mechanical handbrake on the prop shaft is a basic disc and calliper unit but it is exposed to muck and debris in the centre of the machine. As you would expect, the cable can seize from lack of use and debris on the disc accelerates pad wear. However, assessment is easy and replacement not too difficult.

Fitted with 12.5-18 wheels and



Kramer 750

Engine Deutz D2011 L04W four-cylinder

Power 61hp

Transmission Hydrostatic

Top speed 30kph

Hydraulics 50L/min

Max lift capacity 3100kg

Max lift height 2.92m

Fuel tank capacity 60 litres

WxLxH (m) 1.72x4.84x2.48

Weight 4200kg

Tyres 12.5-18



Right: Kramer offered a T version from 2009 that used a telescopic boom to offer greater versatility and lift height to 4m

"Smaller units are more at home in the yard rather than on the road"

THINGS TO LOOK OUT FOR...

The Deutz engine is a 3.6-litre, four-cylinder unit and all vital filters and service points are easy to access. Check for coolant leaks and signs of cracks on the manifold.



The engine housing hides the battery and some of the electrics. This small fuse box has some of the larger fuses and relays. Check for overheating and that the box itself is well sealed.



The hydraulic system uses a gear pump to produce 50 litres per minute of capacity at 210bar and features a combined suction return filter. Hydraulic problems aren't common.





KRAMER HISTORY

1925 | Kramer begins manufacturing tractors in Gutmadingen, Germany, specialising in mowing machines.

1952 | Company headquarters moved to Überlingen, Germany.

1958 | Special department introduced for industrial and construction machines.

1963 | First manufacturer to launch a hydraulic quick-hitch mechanism.

1968 | First equal-wheel, four-wheel drive loader produced in Germany.

1973 | Tractor division closed to focus on the construction side of the business.

1987 | The 312 is launched, the first all-wheel steering wheel loader on the market.

1992 New wheeled loader with telescopic boom to achieve greater height and reach.

2000 | Kramer-Werke and Neuson Baumaschinen GmbH merge.

2003 | First wheeled loader with stepless high-speed drive and highway-certified trailer coupling.

2004 | New 750, 850, 950 and 1150 models offer lift capacity up to 4t with four-wheel steering.

2005 | Kramer manufactures telehandlers under licence for Claas.

2007 | Merger of Wacker and Kramer Baumaschinen GmbH to produce the Wacker Neuson branding.

2008 | Kramer builds a new factory from scratch in Pfullendorf.

2009 | Telescopic version of the 750 loader launched, increasing versatility.

2015 | Production of 750 ceases.

All-wheel steering gives a 40-degree angle. The hydraulic disc brakes and mechanical handbrake need checking for efficiency and wear, and also assess the tyres for damage.

The mechanical handbrake is visible on the main prop shafts. Pad and disc condition is easy to review, as are signs of play in the universal joints of the prop shafts.

This particular Grammar air seat has a hard-wearing leather/vinyl cover that helps to prolong its life. Also check the condition of the seat's suspension unit.



THINGS TO LOOK OUT FOR...



The side console is clean and simple. Rocker switches operate fans, lights and boom suspension, with a basic mechanical handbrake lever. Check the heater controls function.



The gauge to the front has an analogue fuel display and small LCD hour meter, plus a number of warning lights. Ensure the warnings for oil pressure and charging go out when started.



The joystick has LED lights to indicate direction and a thumb roll switch to make the selection. The LED lights can fail so check them - third service is operated by a push button here.

► tyres as standard, the 750 could also be offered with tyres as large as 405/70R20. Apart from wear, check sidewalls and rims for damage.

Ample hydraulics

The 750 utilises a gear pump hydraulic system to achieve 50 litres per minute of output at 210bar. Kramer promotes a combined suction return filter that keeps the system in good shape and avoids any contamination problems. Lift capacity is a very respectable 2900kg, which can be raised to full height in 5.5 seconds and lowered in 3.3 seconds.

KRAMER 750 - TYPICAL USED PRICE GUIDE

Year	Model	Hours	Specification	Price
2005	750	8500	Pallet forks, 20% tyres, rough	£12,000
2007	750	300	Pallet forks, 70% tyres, good	£21,500
2008	750	5000	Bucket, pallet forks, 70% tyres	£19,500
2009	750T	6500	Pin and cone headstock, 50% tyres	£21,000
2009	750T	6000	Bucket, tyres 10%, good	£26,500
2010	750T	4500	Pallet forks, 50% tyres, good	£22,750
2012	750T	1500	Pallet forks, 80% tyres, VG	£26,500
2014	750	3500	Bucket, 30% tyres, good	£23,500

“Loading height might be a concern, however the telescopic will dismiss this”

The 2.4m dumping height and 2.91m loading height might be a concern for users looking to fill trailers or feeders, however the telescopic model will dismiss this issue. Attachments are locked on using the third service, the clever idea allowing the pipes to operate both the ram and third service on the attachment, which also ensures attachments aren't unlocked by mistake.

The 750 predominantly used the Kramer headstock, however it is common to see a number of different



Above: Against competition from JCB, Schaefer and Weidemann, the Kramer has remained a popular brand

conversions such as pin and cone, for example. This might be a consideration when choosing a machine. Check the hydraulics on the machine when hot and cycle through the lifting range, ideally with a load on.

Look over the pipes for perishing or crushing, and also the ram pins for wear or damage. Assess the amount of greasing pivot pins have received and budget in replacements as this can be a costly procedure if seized tight. **EMJ**



Often mistaken for the shuttle, the left-hand indicator stalk also controls the horn, windscreen wipers and washers, plus full and dipped beam. Check it works as it's not cheap to replace.



It's a good idea to keep pivot pins in good shape. Many will have been replaced by now but assess the area and budget in replacements for peace of mind. Also check the hoses.



The third service operates the locking ram, where the pipes can be removed once locked to operate a hydraulic service. Check the flat face fittings are in good shape and ram pins aren't worn.



Kramer machines will often demand a premium due to a strong reputation for reliability



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The workshop

Gear, upgrades & top tips to keep your machines running

Makita launches 36v backpack blower

The UB002C 36v battery backpack blower offers the performance of a 50cc petrol machine and delivers long run-times but with minimal noise and vibration. It provides a simple variable speed control to provide an air velocity of up to 76m per second. Power is supplied by the PDC1200 portable

backpack battery, which can also be used with other Makita tools.

The PDC1200 includes a 33Ah solid-state battery that provides approximately 45 minutes continuous run-time at maximum power for the blower with an LED battery gauge indicator. As the weight of the machine and battery is transferred to the user's back, plus a cruise control feature and adjustable control grip position, the UB002C can be operated more comfortably for longer.

The UB002C is available as a body only (UB002CZ) option or supplied with the PDC1200A02 portable battery pack (UB002CX3).



Fuel additives aim to boost efficiency

Research carried out by Aberdeenshire-based fuel additives developer Fueltone Pro suggests that additive chemistry can deliver up to a five per cent increase in the fuel efficiency of passenger vehicles - but this technology is cascading to the agricultural industry where the increase over higher fuel usage is delivering larger gains in efficiency.

Treating a farm's bulk supply tank means each and every fill of a machine can access any benefits. Additive technology is said to deliver significant savings by improving machinery fuel consumption, and make tractors and other self-propelled machinery run smoother by preventing carbon build up both on fuel injectors and on the diesel particulate filter (DPF).

Treated fuel is also claimed to improve fuel combustion, preventing soot-loaded engine oil and excessive fuel injection system wear. Incorporating a fuel additive to the tank can also improve cold weather performance.

Additive formulations will keep an engine clean, meaning it will burn the fuel for longer and at a higher temperature, resulting in an increase in power for every millilitre of fuel that the vehicle consumes.

Fueltone's range of fuel additive and engine flush products sit alongside DPF solutions that in independent and field tests yielded up to a 14 per cent increase in fuel efficiency and up to an 86 per cent reduction in particulate emissions.



Get chainsaws ready for action

Machine Mart has added the Clarke ECSS2 electric chainsaw sharpener to its wide range of products. This chain sharpener is said to be easy to use, with full adjustment to achieve fast, accurate sharpening on all common chain types and sizes. The sharpener weighs almost 3kg but can be mounted on to workbenches and includes a safety guard and 108mm grinding disc. The 85W motor runs off 230v electrics and is available now for just £47.98.



Simple welding from Lincoln

Lincoln Electric has introduced the POWER MIG 211i MIG welder, a straightforward 200-amp machine for MIG, flux-cored and spool gun welding, ideal for farms maintenance, repair work and more.

The 18.5kg POWER MIG 211i is portable thanks to a sleek design with multiple lift points and inverter technology that reduces weight while maximising power. The simple user interface includes a seven-segment display and basic knob controls to start welding quickly in a simple three-step process: select welding process, wire diameter and material thickness. The machine then automatically provides the optimal voltage and wire feed settings.

The POWER MIG 211i has a duty cycle of 175 at 30 per cent and can operate on 120v or 230v input voltage.





Some simple modifications have made this Kodiak an efficient tool for collecting soil samples

Custom quad

A modified Yamaha Kodiak quad bike has proved to be the perfect tool for a nationwide soil sampling service based in Shropshire, as *FMJ* discovered

IMAGES YAMAHA

Agricultural contractor and soil specialist Andrew Dutton of Dutton Agri Services works in partnership with his father David to offer nationwide soil testing, plus fertiliser application in a 50-mile radius from the business's base in Baschurch, Shropshire.

Established in 1992, the business began by offering a consultative approach to lime application, helping farmers understand more about the health of the soil and nutrient management. To cover thousands of acres throughout the year the business uses two Yamaha ATVs with some unusual modifications.

"We used to walk the fields taking and recording soil samples. We soon realised it would be much quicker using an ATV and we adapted one to fit our requirements," recalls Andrew.

While subtle, the modifications have made the ATV a remarkably efficient tool for collecting soil samples. The lightweight Yamaha Kodiak 450, with independent suspension and wide tyres, minimises compaction and provides the perfect seating position to cover the ground comfortably.

"My father designed a rack for the front with 10 holes

that match the compartments of a sample box. A second frame was added to secure a large box on the rear rack to store the boxes of samples, and two holders were attached to the left and right of the seat for the operator to store soil sampling augers," he explains.

Tracking device

The latest ATV replaces an identical model that was stolen from the farm. As a result, the new Kodiak 450 has been fitted with a GPS tracking device to help prevent a similar theft. "Our local dealer, Hughes Bros, offers excellent support and when we had the ATV stolen they were quick to source a replacement. They also explained that Yamaha offered a free tracker so we took advantage after our unfortunate experience."

The Kodiak is equipped with heated grips and throttle thumb control, electric power steering (EPS) and a diff-lock that helps with the varied work the business fulfils.

"The EPS is a big help because we can manage the ATV more easily on rough ground and operate it with one hand when we are taking samples. This enables the operator to slow



Above: Dutton Agri Services is run by contractor and soil specialist Andrew Dutton and his father David



“We realised it would be quicker using an ATV and adapted one to our requirements”

Left: A frame on the rear rack secures a large box to store the boxes of samples



Left: Independent suspension and wide tyres minimise compaction when travelling across fields

Above: A rack at the front has 10 holes that match the compartments of a sample box

to a stop, steady the ATV and take a sample before scraping it through the rack into a collection box. We rarely have to get off the ATV and this has saved so much time that we have been able to take on work all over the UK.”

Using a GPS system, Andrew is able to show where samples have been taken and label each accordingly. One operator with the Kodiak can cover 800 acres a day and collect 400 samples, each being recorded using the GPS. “We offer soil pH analysis, soil nutrient tests and organic matter tests. We believe it is important to understand the baseline from which we are working and to help farmers better understand which inputs will improve the soil for different crops.”

Finding traction

The Yamaha Kodiak 450 ATV has been updated with a diff-lock as standard on all EPS models and includes a safer, utility focused rear braking system throughout the range. The addition of a diff-lock to the Kodiak enables independent power transfer to all four wheels for better off road traction. “It really helps in wet and muddy conditions. The locking differential forces all wheels to spin at the same speed, regardless of traction, helping the ATV to maintain drive momentum. If the ground is hilly or very uneven it is a real help.”

All Kodiak models are specified with Ultramatic® transmission, which maintains tension on the drive belt to provide a consistent throttle response. The transmission

provides the correct gear ratio as the ATV speeds up and also acts to provide engine braking when the ATV is going downhill. The rider is also able to automatically switch between two-wheel drive, four-wheel drive, and diff-lock settings with the push of a button.

“I would always have automatic transmission because we are constantly starting and stopping, so it reduces the fatigue of constantly changing gear. I particularly like the versatility of the Yamaha transmission and the option to select two- and four-wheel drive easily. We have a very busy schedule of soil sampling and I know I can rely on the Kodiak to cover the ground and help us deliver for our customers,” Andrew concludes.

FMJ






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Winter wish list

With Christmas fast approaching, here's *FMJ's* annual round-up of stocking fillers and gifts for friends and family – or even as a treat to yourself!

Massey Ferguson Black umbrella

A quick-opening, flexible umbrella designed to be stable in windy conditions. It has glass fibre ribs, wooden tips, a straight wooden handle and a galvanised steel shaft.

£25.24 • shop.masseyferguson.com



Lego Technic John Deere 9620R tractor set

This Lego Technic John Deere 9620R tractor with articulated steering and tipping trailer provides an ideal project for children aged eight and up. All-terrain wheels can navigate any surface.

£26.90 • www.johndeereshop.com



John Deere Hooded sweatshirt

Green fleece sweatshirt with pullover hood and a trademark screen-printed John Deere logo on the front. It's 60% cotton and 40% polyester and available in sizes suitable for children aged six to 14.

£30.21 • www.johndeereshop.com



New Holland T7 HD Bluetooth earphones

These T7 HD wireless Bluetooth 5.0 earphones are equipped with True Wireless Stereo technology for a stable signal over a 10m range. The case has a magnetic induction charging base providing a charge for up to five hours non-stop phone calls and listening to music.

£34.71 • www.newhollandstyle.com



Case IH Knitted hat

A multi-coloured striped, knitted hat with pompom, embroidered Case IH logo and a cosy fleece lining.

£6.94
• www.caseihshop.com



Massey Ferguson Flask

Supplied in a gift box and with Massey Ferguson's latest branding, this 175ml satin-finish flask comes with two small cups and a small funnel for easy filling.

£25.24 • shop.masseyferguson.com



Claas Flannel shirt

A good-looking 100% cotton, multi-coloured shirt with button-down collar and patch breast pocket. An embroidered Claas logo features on the front and back.

£47.15 • www.claas-group.com



Valtra Multi-tool

This high-quality multi-tool has nine different functions and a ten-bit set. Made from stainless steel, it comes in a belt pouch with a Valtra Unlimited logo.

£36.64 • shop.valtra.com



Fendt Storage box set

Two Fendt foldable boxes with lids will help children to keep their room tidy. Each box measures 30x30x30cm and is made from Oxford fabric.

£27.34

• shop.fendt.com

Claas Winter jacket

Insulated, breathable jacket with water-repellent surface and taped seams. It has a stand-up collar, removable hood, Claas logo, zipped side pockets, chest pocket and adjustable cuffs. This 100 per cent polyester jacket is machine washable.

£235.38 • www.claas-group.com



Kuhn Straw hat

As seen on the heads of show visitors across Europe, this Kuhn straw hat has a stitched and printed band.

£6.95 • www.kuhn.co.uk/kuhn-shop

New Holland Ladies' fluffy ball beanie

A one-size-fits-all blue fluffy ball beanie in soft heavy yarn with New Holland patch logo. The faux-fur fluffy ball detaches for easy washing.

£12.15 • www.newhollandstyle.com



Case IH Puma 240 CVX pedal tractor

Suitable for children aged between three and seven years old, this pedal tractor comes with an adjustable seat and an opening bonnet.

£162.65 • www.caseihshop.com



Fendt Portable BBQ

This compact, space-saving and portable charcoal barbecue is perfect for outdoor picnics, travel and camping trips. It's made of high-quality stainless steel with a Fendt logo.
£110.21 ● shop.fendt.com

Valtra Baking set

For those who enjoy baking and like Valtra tractors, this baking mould and brush is for you. It's dishwasher safe and made from heat resistant silicone with a temperature range from minus-40 to plus-230C.
£22.40 ● shop.valtra.com



Krone Men's watch

Black brushed stainless steel analogue watch with date display. There's a Krone logo on the face and it's supplied in a presentation box.
£110 ● kroneukltd-merchandise

Claas Axion 960 soft toy

Approximately 36x22x25cm, this washable, 100% polyester, big soft tractor is ideal for younger tractor fans.
£23.54
● www.claas-group.com



Massey Ferguson Unisex black hoodie

Sporting Massey Ferguson's new logo on the front and back, this black unisex hoodie is part of a collection that also includes a polo and t-shirt.
£46.27
● shop.masseyferguson.com



Claas Weekend bag

Measuring 52x31x25cm, this classic canvas weekend bag has two carrying handles and a detachable shoulder strap. There's a two-way zip, a zipped internal compartment and another zipped compartment with embossed Claas logo on a gunmetal silver pendant on the front. It has a dirt-resistant, water-repellent base.
£31.40 ● www.claas-group.com



Krone BiG X jigsaw puzzle

You won't be bored on Christmas Day with this 1000-piece boxed jigsaw featuring Krone's BiG X forage harvester and pick-up. **£25** ● kroneukltd-merchandise



New Holland Padded jacket

Ultra-light, padded and foldable, this blue navy jacket also has two front zipped pockets. A New Holland logo is embroidered on the left chest plus a distinctive label on the front bottom right side. It's available in S, M, L, XL, XXL, XXXL and XXXXL sizes. **£69.41** ● www.newhollandstyle.com

Claas Children's cycle helmet

Conforming to safety standard EN1078, this smart helmet has a polycarbonate outer shell and EPS inner layer for impact resistance, plus eight ventilation openings to keep the head cool. The strap can be easily and continuously adjusted, while the helmet is suitable for head circumferences of 46-52cm. **£31.40** ● www.claas-group.com



Kuhn Pocket knife

This compact stainless steel knife has laser engraved beechwood handles. It has a knife, corkscrew, file/file cleaner, key ring, flat screwdriver, bottle/can opener and scissors. The knife is packed in a recycled cardboard gift box. **£14.26** ● www.kuhn.co.uk/kuhn-shop



Valtra Fleece blanket

Soft, plush, 100% polyester fleece blanket measures 1.3x1.5m and features a tyre tread design on one side and is plain white on the reverse. **£23.62** ● shop.valtra.com



Valtra Flat cap

A soft wool-blend (50% wool, 50% polyester) dark grey flat cap will keep you warm in the cold. It has a comfortable feel and leather Valtra logo on the right-hand side. **£30.12** ● shop.valtra.com



John Deere Ladies' field fleece half-zip jacket

Lightweight, 100% polyester stretchy fleece half-zip jacket brushed outside and smooth inside with green panels. Available in six sizes from S to XXL. **£34.95** ● www.johndeereshop.com



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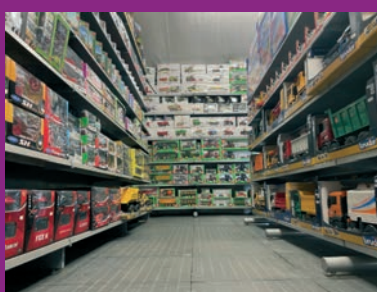
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Making memories

Christopher Thorp and Kayleigh Rudd completed their first harvest together this summer, aided by an original 1975 New Holland Clayson 1530.

FMJ went to North Yorkshire to find out more

WORDS AND IMAGES **DAVID LALEY**

Late last year Christopher Thorp purchased his first combine harvester. With the assistance of his partner's brother, Tom Dundon, he bought a tidy 1975 New Holland Clayson 1530 for just £1250. Christopher bought the combine to harvest 20 acres of Costello feed wheat established the previous autumn on the 40 acres he currently farms with his partner Kayleigh Rudd and their two young children Ruby and Freddie.

"In between looking after our 40 acres, half of which is down to grass and supports a flock of sheep, I drive a coach full-time for a company near



Left: The chance to make memories with his young children Freddie (pictured) and Ruby was one of the main reasons Christopher bought the 1530

York," explains Christopher. "We both come from farming backgrounds and have fond memories growing up on farms in North Yorkshire. Harvest was always one of our favourite times of the year when we were younger. This inspired us to farm ourselves so we could share those memories and make lots of new ones with our children."

Profile

Machine New Holland Clayson 1530

Year 1975

Owner Christopher Thorp

Owned since 2021

Hours N/A

Used for One season

"Up until this year we relied on a contractor to harvest our small acreage of cereals, however I was always keen to relive my childhood and really wanted to own a tidy classic era combine to harvest our cereals with. That ultimately led me to the New Holland Clayson I purchased last winter."

“I set about finding a similar size combine from the 1960s or 1970s”

Christopher can trace his family's farming history back to the 19th century, when his Great Grandfather saved up enough money to purchase a 125-acre farm at Stittenham near York that supported a herd of Hereford cattle, a flock of sheep and a few pigs.

"My Dad joined the farm in 1959 on the day he graduated from Askham Bryan

► Agricultural College, and went on to take over the running of West Mill House Farm following the death of my Great Grandfather," says Chris. "Back then around 55 acres of oats, barley and rye were grown to support the livestock.

"My Great Grandfather, his brothers and my father originally harvested their crops with an Albion 3A binder before the sheaves were threshed by a threshing machine powered by a Field Marshall tractor. My Dad bought his first combine, a 1949 Massey Harris 726, in 1967 for £130 to replace the binder, which was a significant step up in technology at the time. Originally it was fitted with a four-cylinder Austin engine but it failed so my dad replaced it with a larger six-cylinder petrol/paraffin engine.

"After paraffin became too expensive he swapped the old 726 in 1977 with a Perkins D270-powered Claas Matador with a 10ft header. The Matador ran faultlessly and produced a superb sample for the next 22 years, until some niggling issues with the threshing mechanism's flat belt forced it into retirement.

"In 2000, not long after I'd turned 10 years old, my dad purchased a 1968 Claas Protector powered by a Perkins A4.236 engine for £400. I fell in love with it immediately but although it had power steering and a larger grain tank, my dad reckons it never performed quite as well as the Matador. In 2005 it was sold to a local farm where I ended up working for many years and I often found myself in the operator's seat.

Combine control

Keen to rekindle memories from his childhood, Christopher decided to bring harvesting back in-house late last year and originally set out to purchase his father's Claas Protector.

"The farmer had sadly passed away but I hoped I might be able to buy it back," Christopher explains. "Unfortunately it didn't happen so I set about finding a similar size combine from

the 1960s or 1970s. I'd never had anything to do with Clayson combines but was impressed with their design and simplicity compared to the Claas and Massey Ferguson combines of the same era. My mind was made up: I was

going to look for a New Holland Clayson combine from the 1970s.

"Not long after I spotted an advert on social media for a 1975 New Holland Clayson 1530 that was for sale on a farm near Boroughbridge. It looked to be in excellent order, so Tom and I arranged to go and see it. It hadn't been moved for two years but the battery was still connected and the key was still in the cab! I pushed the key in and the dashboard lit up so there was power!

"I checked the oil, water and fuel levels, which appeared fine, and after a bit of tinkering the six-cylinder Ford engine roared into life and sounded very healthy. I then slowly engaged the threshing unit and the header drive and both ran really well. We did the deal on 19 December last year and a week later, with the help of Tom, Kayleigh, a new lift pump and some new fuel filters, we were able to road the 1530 home, as Tom guided us down the lanes with his Ford 6610 that transported the 12ft header."

Christopher believes his 1530 was originally sold new by Harris Agricultural Engineers from their Selby branch. It then ended up in Lincolnshire for some time before travelling north to Boroughbridge seven years ago, where it cut 40 acres per year until 2019.

Powered by Ford

New Holland's Clayson 1530 combine was in production for nine years between 1971 and 1979. It is powered by a 105hp naturally aspirated Ford 2713E engine matched to a mechanical three-forward, one-reverse transmission capable of a top speed of 11.7mph. Up front, the 1530 could be specified with a choice of headers between 2.59m (8.5ft) and 4.57m (15ft) in width. They are fitted with 107cm-diameter reels equipped with 120-degree

1975 New Holland Clayson 1530

Engine Ford 2713E six-cylinder
Power 105hp
Fuel tank 250 litres
Transmission Mechanical, 3 forward 1 reverse
Top speed 11.7mph
Steering Hydrostatic
Header width 3.65m (12ft)
Cutting height 19.5cm-101cm
Threshing drum
Diameter 60cm
Width 100cm
Rasp bars 8
Drum speed 445-1035rpm
Concave bars 14
Wrap angle 110 degrees
Concave area 62cm²
Straw walkers
Number 4
Length 3.6m
Area 3.71m²
Total threshing area 4.14m²
Cleaning fan speed 540-964rpm
Total sieve area 2.65m²
Grain tank 2400 litres
Length 8.36m
Height 3.15m
Front tyres Goodyear Torque Grip 18.4-26
Rear tyres Dunlop 8.50-12



Above: The four straw walker 1530 produced an excellent straw swath this year during a summer of unprecedented dry weather



Above and top: The Cabcraft cab is easy to access, is equipped with a comfortable seat and the main controls and levers are simple to use

Below: A decent set of steps extend out and over the left-hand front wheel to provide safe access to the cab





This picture: The 1530 is very manoeuvrable on the headlands thanks to its hydrostatic steering and is very relaxing to drive for such an old combine

Left inset: Christopher Thorp, with the assistance of Tom Dundon, has been delighted with the performance of his 1975 New Holland 1530



Above: The header is equipped with a 107cm-diameter reel fitted with 120-degree curved tines



Left: This 1530 rides on Dunlop 8.50-12 tyres on its rear axle and a pair of Goodyear Torque Grip 18.4-26 tyres up front

Below: The 1530 is equipped with a 3.65m (12ft) header, which worked very well this summer



Above: Access to the engine bay and grain tank is aided by a ladder in front of the 250-litre diesel tank

curved tines, while a high-speed knife drive enables the cutter bar to achieve up to 1060 strokes per minute. Cutting height can also be adjusted between 19.5cm and 101cm. A free-floating hydro-pneumatic suspension system maintains a consistent stubble height.

Cut crops are transferred to the threshing unit via a wide diameter auger with 15 retractable fingers and an elevator made up of 42 heavy-duty slats. The threshing unit comprises a 100cm-wide, 60cm-diameter threshing drum fitted with eight rasp bars.

Variable speed control allows the drum to run between 445 and 1035rpm, depending on crop type and conditions. The drum is matched to a 14-bar concave featuring 110

“After a bit of tinkering the six-cylinder Ford engine roared into life”

degrees of wrap angle, providing a total surface area of 62cm².

From there, four steeply angled 3.6m-long straw walkers provide 4.14m² of threshing

before an extra-long grain pan begins the cleaning process. This is completed via upper and lower sieves totalling 2.65m² matched to a six-blade fan. Grain is then transferred to the 2400-litre tank via two top-driven elevators.

Pre-harvest TLC

Following a thorough mechanical overhaul, Christopher says the 1530 performed impeccably and had little trouble harvesting the Costello feed wheat over a couple of

This picture: Christopher is assisted by fellow machinery enthusiast Tom Dundon with his smart 1994 Ford 7840SLE

Right inset: It doesn't take long to unload the 1530's 2400-litre grain tank into a 7t twin-axle Triffitt trailer



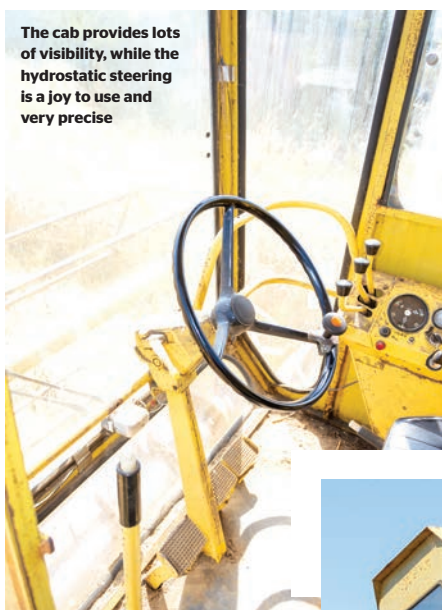
► days in August. "The wheat was initially harvested at 13.5 per cent moisture although this dropped to 11.2 per cent on our first afternoon so we decided to stop and complete the remainder the following day. Our wheat achieved 3.5t to the acre with bushel weight 82.6kg, which was particularly pleasing given how early we harvested it due to the unprecedented warm weather," he continues.

"Prior to harvest, I carefully went through the 1530, repairing a bent rasp bar and rectifying some holes that had worn through in the centre of the returns elevator, while also replacing the joining links of the elevator chain in the process. The tension of every belt was checked, and only the variator drive belts required adjustment. The feeder house and grain elevator chains were also tensioned back to specification, while all of the header's knife sections were replaced with genuine CNH examples.

“The tension of every belt was checked, and only the variator drive belts required adjustment”

"I also changed the oils and repaired and painted the engine's cracked silencer. Just before harvest all of the chains were oiled and greased too. After a slightly nervous start watching all of the gauges I was soon into the swing of things and was delighted with how

The cab provides lots of visibility, while the hydrostatic steering is a joy to use and very precise



Below: The 1530 is powered by a normally aspirated Ford 2713E engine rated at 105hp. It was overhauled prior to this year's harvest



the fan and sieves worked. The threshing and cleaning system produced a fantastic sample, while I was very impressed with the quality of the straw given how dry it was.

"Overall, it's been an amazing experience operating the 1530, made all the more rewarding by having the support and assistance of Kayleigh and Tom. It's been great to relive our own childhood memories and make lots of new ones with our young children during our first harvest. Hopefully they will have the chance to operate our 1530, the Yellow Rose, in the future."

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This aftermarket cab by Cabcraft back in the 1970s provides decent visibility and protection from harvest dust



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Amazona fertilizer/salt spreader, 2009, 1,700 litre hopper, will hold approx 2 x 600kg bags, twin disc, 540rpm PTO, hydraulic open/close, hopper cover, will also spread salt and small/grass seeds, great working order. Immaculate, £1,795 + VAT. Tel: 01823 429431. Somerset. **[LW245]**



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Honda TRX450 quad, 4x4, 2002, petrol, good working order, good tyres, electric shift, ready for work, £1,500. Tel: 07870 559146. Ludlow. **[LAW63R]**



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Kverneland LD85 plough, manual vari width, 4 plus 1 furrow, £3,950. Tel: 07774 112211. Gloucestershire. [LAW106R]

RAKES & TEDDERS



PZ 300 Haybob, used, 3m working width, spreads and rakes, good wide tyres, good gates, good working order, £795 + VAT. Tel: 01823 429431. Somerset. [LW248]



Sitrex Haybob, 2007, 3m working width, spreads and rakes, all new tines, good wide tyres, good gates, good working order, would benefit from a few new springs, £1,095 + VAT. Tel: 01823 429431. Somerset. [LW249]

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LOADS OF MACHINERY FOR SALE IN FMJ'S

TRAILERS



Steel trailer, 8t, twin axle, sprung bogies, 4-wheel hydraulic brakes, grain gate in tail board, £3,250. Tel: 07921 480130 or 01744 895393. Email: gfhalsall@gmail.com. Near Wigan. **[LAW14]**



JPM 11t trailer, multi drop side, new, ramps, £9,350 + VAT. Tel: 01603 712222. Norfolk. **[LW221]**



Portequip flatbed trailer, 24ft, 2021, sprung axles, super single tyres, head board, front and back lades, £POA. Tel: 01579 370246. Cornwall. **[LW205]**



Easterby horse muck trailer, 6t, 2009, good condition for the year, needs new brake hose and tidying, £3,000 no VAT, buyer collects. Tel: 01775 821277. Nr Boston. **[KLP3R]**



Larrington trailer, 14t, roll over sheet, vgc, £15,000 + VAT. Tel: 01603 712222. Norfolk. **[LW223]**



JPM 16t corn/silage trailer, new, 20t axles and suspension air/oil brakes, £POA. Tel: 07976 702858. Powys. **[JKW57R]**



JPM 16t silage trailer, flotation tyres, oil and air brakes, £POA. Tel: 07976 702858. Powys. **[LW218]**



Dragon tipping trailer, 10t, twin axle, c/w grain shute, £2,450 + VAT ono. Tel: 07976 794383. Shropshire. **[LAW85R]**



JPM low loaders for sale, call for more info, £POA. Tel: 07976 702858. Powys. **[LW219]**



Ifor Williams HB505R Hunter horse trailer, double (2 x 16.2hh) Horse model, twin axle, deep chassis, aluminium floor, centre partitions, c/w full width breast and breeching bars, lockable drawbar coupling c/w key, tyres: 165R13C, brand new spare wheel, £2,800 + VAT. Tel: 07855 356468. Carmarthenshire. **[JKW34R]**



JPM 20t dump trailers available, choice of colours, £POA. Tel: 07976 702858. Powys. **[LW220]**



Bailey root trailer, 14t, 500/45R22.5 flotations, 10 stud axles, sprung draw bar, ROS, £7,400 + VAT. Tel: 01603 712222. Norwich, Norfolk. **[KLW104R]**



Graham Edwards trailer, super little general purpose trailer, owned from new, full lighting kit and road legal, light use only so it is still in excellent all-round condition, £795 ono. Tel: 07836 541514. Whitstable. **[KLW82R]**



Ifor Williams GX 106 plant trailer, full back, good condition. Tel: 07976 702858. Powys. **[JKW59R]**

TYRES & WHEELS



BKT Agrimax tyres, RT 855 420/85R34 (16.9R34) 90% (approx) tread remaining, excellent pair of tyres. £900. Tel: 07855 356468. Carmarthenshire. **[LAW69R]**

EMPLOYMENT OPPORTUNITIES

Key arable operator in Hampshire. Are you looking for an exciting new position? An opportunity has arisen for an enthusiastic and dedicated individual to work as part of a team on a progressive, high achieving, family owned, 3,500 acre arable unit. The position requires a self-motivated person with good communication skills to fulfil an important role and be actively involved in all operations including: combining, cultivations and drilling of combinable crops, fertiliser and spray applications, maintenance of farm machinery and estate improvement. An attractive salary with a good quality house is available. For more information please call 07836 217174 on a strictly confidential basis; or to apply please send full CV and covering letter to Mr P. White, Chidden Farms, Hambledon, Hants PO7 4TD; or to chidden@supanet.com

Product Manager required for Krone UK, full time, 8am-5pm Monday - Friday plus additional hours where necessary. Travel nationwide and to Germany. We are looking for an experienced Product Manager to join the Krone UK team. The product manager will be responsible to understand the needs of UK farmers and contractors and work closely with product management in our HQ in Germany to meet those needs. You will provide the product vision working with many other roles in developing, supporting and selling the product in line with the company's strategy and goals. Responsibilities include gaining a deep understanding of customer experience; create buy-in for the product vision; develop product pricing and positioning strategies; drive product launches; evaluate promotional plans. To be successful you will be a strong team player, with excellent communication skills and the confidence to make decisions autonomously, and in line with company policies and strategic direction. You will have proven success of product management in an Agricultural or Land Based business, with the skills to challenge

FARM MACHINERY TRADER

and lead as well as working effectively with cross functional teams in a matrix organization. You will have a proven track record of managing all aspects of a successful product throughout its lifecycle. For more information please call Jim Holmes on 0113 287 8800. To apply, please send a copy of your CV along with a covering letter stating your current salary to sales@krone-uk.com

Agricultural Sales.

Agricultural Sales roles available with leading dealer Scot Agri. We provide machinery sales, service, and parts from JCB, Massey Ferguson, HORSCH, KTWO, Berthoud and more across our nine agricultural depots. We are currently looking for driven Sales Representatives to join our teams in Huntly, Glenrothes and Forfar. We would welcome applications from those with a background in or passion for agriculture, sales experience, or engineers who want to move in to sales. In return we offer a competitive salary and overtime rates, private healthcare, generous annual leave entitlements, and a company car. For more information and to apply visit www.scotagri.com/careers or send your cv to hr@scot-jcb.co.uk

Experienced tractor driver /plant operator, mechanic and labourer, looking for regular contractual or seasonal opportunities in Leicestershire.NPTC/ NPORS. Call 07794 467215

Parts advisor. We are a leading five star AGCO machinery dealer, and we currently have a vacancy for a full-time Parts Advisor at our Southam dealership in Warwickshire. The successful candidate will be involved in the sale, stock control and computer input of parts and goods for a wide range of premium brand agricultural and horticultural machinery. Applicants will preferably have previous experience in a parts department and strong communication skills. For further information please refer to our website www.chandlers.co.uk/careers, or forward your CV to hr@chandlersfe.co.uk or call 07970 121095 for an informal discussion. All enquiries are treated in strictest confidence.

Topping grass services available, I have the tractor and cutter. Based Perthshire area. Tel: 07760 151294

Technical Service Support

Engineer required for Krone UK, full time, 8am-5pm Monday - Friday plus additional hours where necessary. Occasional travel to Germany. Based at our workshops near York, we are looking for a dynamic, hardworking Technical Service Support engineer to join our dedicated workshop team. You will support the KRONE aftersales and sales team on service issues working closely with our field staff. Responsible for the maintenance of our demonstration fleet. You will be confident with computer systems and willing to learn the KRONE parts and service systems. Out of season, your day to day duties will consist of machine servicing and maintenance, upkeep of machine records and reporting any faults back to the appropriate people. In season, you will be willing to travel throughout the UK to support both our demonstration programmes and customer machines as appropriate. Experience of this type of role would be an advantage as it is important that you can service and maintain machines to a very high standard. Further service training on KRONE products can be provided for the right candidate. In return, KRONE will offer a competitive remuneration package, healthcare and company pension scheme. To apply: Please email covering letter stating your current salary, and CV to service@krone-uk.com or comco.uk/careers



Job opportunity in Australia. JCB Gippsland is part of the largest JCB dealer group in Australia, we currently have vacancies in parts and service. Free air return air travel, accommodation and visa sponsorship available for the right candidates. For more information contact Jon. jon@michaelagroup.net.au +61 (0) 499957007 Phone 0499957007 Advert Town VIC Australia.



Agricultural engineer, looking for experienced Agricultural engineer to work on all Claas, Massey Ferguson, Fendt, Manitou, Kiota and more. Must have a minimum of 5 years' experience on above brands and be prepared to relocate to beautiful North Queensland - Australia. Contact me for more information with a CV and cover letter. 0061 407 417546. Cairns.

[LAW202]

Agricultural Service Engineers.

Agricultural Engineer roles available with leading dealer Scot Agri. We provide machinery sales, service, and parts from JCB, Massey Ferguson, HORSCH, KTWO, Berthoud and more across our nine agricultural depots. We are currently looking for engineers to join our teams in Forfar, Fraserburgh and Kelso. We would welcome applications from engineers with plant or agricultural experience. In return we offer a competitive salary and overtime rates, generous annual leave entitlements, a company van and training opportunities. For more information and to apply visit www.scotagri.com/careers or send your cv to hr@scot-jcb.co.uk



Service technician. Russells is one of the leading agricultural machinery dealers in the UK. Due to continued growth, we are seeking an experienced service technician to join the team at our Boroughbridge and Rothwell branches. Russells holds franchises for New Holland, Manitou, Vaderstad, Kubota,

Pottinger, Mchale and McConnel. Responsibilities required: provide an excellent level of customer care, deal with fault diagnosis both on site and in the workshop, carry out repairs to a high standard in both a timely and professional manner, have an excellent knowledge of modern agricultural practices, be able to follow manufactures warranty procedures, hold a full UK driving licence, and other licences such as PA1/PA2 and telehandler/ forklift are preferred but not essential. Benefits include: competitive remuneration package, enrolment into the NEST pension scheme, modern company van, company mobile phone/laptop, company overalls, uniform and PPE is provided, regular manufacturer led training, structured programme of development. If you would be interested and would like to find out more then please contact: careers@russells.uk.com - russells.uk.com

Magazine Editor Wanted. Sundial Magazines the specialist publisher of off-road machinery publications is seeking an editor for its market leading monthly Farm Machinery Journal. Applicants will have a background in agricultural machinery journalism or associated fields. Consideration will be given to those in similar related roles who are looking to develop their careers. The position is fast paced requiring organizational skills in both a practical and management sense with the ability to plan and direct freelance writers and designers. The successful applicant will be capable of producing original copy. The role will be home based with office visits as required. There will be the opportunity to incorporate an element of overseas travel. To apply contact Paul Cosgrove, Publishing Director at paul@sundialmagazines.co.uk

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World of Farm Machinery

Photos of iconic tractors and machinery from manufacturers' collections

1



2



1 Deutz-Fahr opened its new factory in Lauingen, Germany, in 2017 for tractors over 130hp. The Deutz-Fahr Land facility includes the Arena, a visitor centre and museum where current and former tractors can be seen, including the MTH 222 from 1927.

2 Ford began manufacturing tractors at Basildon, Essex, in 1965, starting with the 6X range, which included the 3000 seen in this photo. In 2012 New Holland opened a visitor centre at the plant, where guests can tour the factory and see historic tractors.

3 The Zetor Gallery in Brno, Czech Republic, shows a wide range of the company's tractors since 1946. The iconic Crystal models, first introduced in 1969, are well represented.

4 This Lindner JW20 takes pride of the place in the Austrian tractor firm's entrance hall at the Kundl factory. The 20hp tractor from 1955 sits alongside other vintage tractors in the company's collection, plus the range of current models.

5 Twenty-five years after the first Fastrac rolled off JCB's production line, in 2006 the company assembled this line-up of tractors at its Staffordshire factory to mark the occasion. The visitor centre at JCB also includes the Story of JCB that charts the company's evolution.



3



4



5



Email us your pics

For a chance to see your machinery photos on this page, send a high-res photo to peter@farmmachineryjournal.co.uk. Please include a brief description of the machine, where the photo was taken and the names of anyone in the picture.



418 Rogator
2008, 3500 Hrs
24m (4 Sections)
3500ltr
£42,000.00



MT755B
2006, 11880 Hrs, 320 HP
Speed: 40Km/h
Track: 25 Track %: 30
£36,750.00



MT765C
2009, 9326 Hrs, 360 HP
Speed: 40Km/h
Track: 30 Track %: 60
£55,000.00



MT765D
2013, 7651 Hrs
Speed: 40Km/h
Track: 25
£67,750.00



MT765D
2013, 3815 Hrs
Speed: 40Km/h
Track: 30
£65,000.00



MT775E
2015, 6677 Hrs, 400 HP
Speed: 40Km/h
Track: 25 Track %: 50
£77,500.00



718
2021, 1236 Hrs, 180 HP
Tyres: 540/65R30 (95%)
650/65R42 (95%)
£118,000.00



720
2015, 5055 Hrs, 210 HP
Tyres: 540/65R30 (65%)
650/65R42 (70%)
£77,500.00



724
2018, 6500 Hrs, 240 HP
Tyres: 600/65R28 (40%)
650/75R38 (40%)
£85,000.00



828
2019, 4230 Hrs, 280 HP
Tyres: IF600/70R30
IF650/85R38
£123,000.00



828
2017, 5150 Hrs, 280 HP
Tyres: 600/70R30 (70%)
650/85R38 (70%)
£98,000.00



MT943 MT
2018, 2500 Hrs
Speed: 40Km/h
Track: 30
£180,000.00



MF 1740M
40 HP, ROPS
26X12.00-12 TYRES
13.6X13 TYRES
£22,950.00



MF 7720 S
2019, 1448 Hrs, 210 HP
Tyres: 600/65R28 WA (95%)
650/65R42 WS (95%)
£86,500.00



MF 7724 EFD6
2017, 4175 Hrs, 235 HP
Tyres: 600/65R28 (80%)
650/65R42 (80%)
£65,995.00



MF 7726 EXDV
2020, 2677 Hrs, 280 HP
Tyres: 600/65R28 (70%)
650/65R42 (70%)
£97,500.00



MF 8740 S EXDV
2018, 2049 Hrs, 400 HP
Tyres: VF650/60R34 (90%)
VF710/75R42 (90%)
£117,000.00



MF 8S.265 EXDE
2021, 700 Hrs, 265 HP
Tyres: 600/65R38 (90%)
650/75R42 (90%)
£116,500.00



T202
2011, 5104 Hrs, 200 HP
Tyres: 540/65R30 (30%)
650/65R42 (40%)
£38,000.00



T214A
2019, 5338 Hrs
Tyres: 600/65R28 (20%)
650/75R38 (40%)
£79,500.00



T234D ST
2020, 1500 Hrs, 245 HP
Tyres: 600/60R30 (75%)
710/60R42 (85%)
£107,500.00



T234D
2018, 6450 Hrs, 230 HP
Tyres: 600/65R30 (30%)
650/75R38 (40%)
£62,250.00



T254V ST
2021, 575 Hrs, 235 HP
Tyres: 600/65R30 (100%)
710/60R42 (100%)
£121,500.00



T254V ST
2017, 4800 Hrs, 255 HP
Tyres: 600/65R28 (50%)
710/70R38 (60%)
£75,500.00



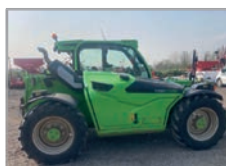
MANITOU 735-120PS
2014, 7200 Hrs, 120HP
4 Wheel Steer Crab
Tyres: 460/70R24 (10%)
£29,950.00



MANITOU MLT 735
2009, 5000 Hrs
7m Reach, 3500kg Lift
Tyres: 460/70R24 (40%)
£45,900.00



MANITOU MLT 741
2019, 1750 Hrs
7m Reach, 4100kg Lift
Tyres: 500/70R24 (40%)
£71,495.00



MERLO 35.7CS 4WD
2018, 4739 Hrs
7m Reach, 3500kg lift
Tyres: 405/24 Mitas (10%)
£42,000.00



MERLO 42.7 4WD
2017, 4422 Hrs
7m Reach, 4200kg lift
Michelin Tyres: (50%)
£42,000.00



MERLO TF33.7-115
2019, 2500 Hrs
7m Reach, 3300kg Lift
405/70R24 (70%)
£49,950.00



FORD RANGER
2018 (18) 3.2 Wildtrack
Auto Double Cab
53,290 Miles
£23,990.00



MITSUBISHI L200
2016 2.4 Barbarian
Auto Double Cab
57,672 Miles
£17,990.00



NISSAN NAVARA
2017 (17) 2.3 Tekna
Auto Double Cab
96,627 Miles
£16,490.00



TOYOTA HILUX
2015 (64) 2.5 ICON
Manual Double Cab
44,729 Miles
£21,590.00 (NO VAT)



VW AMAROK
2014 (14) 2.0 Highline
Manual Double Cab
55,553 Miles
£20,490.00 (NO VAT)

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