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FARM MACHINERY

JOURNAL

February 2022 // Issue 94

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February 2022
Issue 94

COVER IMAGE
David Laley



Welcome

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

With the biannual Agritechnica event looming, the jury of
the Farm Machine 2022 awards has been busy selecting
their candidates for the shortlist. This year we are proud
to have been asked to join the international panel of
judges, which includes machinery experts and journalists
from some of Europe's most significant farming press.

Farm Machine was previously known as Machine of the
Year and has been one of the most coveted awards in the
agricultural engineering industry since 1997. It's common
to see the bosses of the biggest manufacturers present
at the awards ceremony, such is the importance of being
presented with one of the awards. Last time, at the 2019
event, Claas scooped the combine award for its Lexion
8000 and 7000 and the forage harvester category for
the Jaguar 900. Fendt's 900 Vario won the large tractor
category, while New Holland's Big Baler 1290 HD (which
we've been working with on p32) took the baler award.

The last 12 months have seen a flurry of innovations,
bringing plenty of candidates for the 14 award categories,
which include tractors from 80-170hp, 180-400hp, and
400hp-plus. That last category alone has given us plenty

to think about. Then there are the
harvesters, grassland equipment, tillage
machinery, drills, sprayers, loaders
and so on to think about. There's
one award the jury can't decide
though, and that's the Audience
Choice award, in which all
shortlisted machines can be
voted for by you. Visit www.farmmachine.eu to place your
vote by 27 February and be in
with the chance to win great prizes.



Peter Skilton, Editor

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NEWSDESK

The latest machinery developments, launches and updates



Case IH reveals revised tractor ranges for 2022

Case IH has continued its product updates by introducing changes to the Farmall C, short-wheelbase Puma and Maxxum tractors. Available this spring, the four-model Farmall C range now meets Stage V emissions regulations using a new FPT F5 3.6-litre, four-cylinder engine, with four valves per cylinder as opposed to two on the previous 3.4-litre engine. It also uses common rail fuel injection to increase power and provide higher torque at lower engine speeds. FPT's maintenance-free HI-eSCR2 after-treatment system handles emissions.

A 'Selection Pack' of specific options includes the 24F/24R Active Drive 2 transmission with optional cruise control and creep speeds, front and rear differential locks, electronic draft control, a 64-litre/minute hydraulic pump, three-speed PTO and optional front linkage.

Modern Maxxum

The Maxxum 115-150 tractors are now available with three specification packages: Selection for Maxxum and Maxxum Multicontroller models; Advance on Maxxum, Multicontroller and CVXDrive specs; or Professional on Multicontroller or CVXDrive machines. All offer a range of common options and technology features.

The cab entrance has been redesigned with Magnum-style steps, while inside are a new phone mount, USB power points and



The Farmall C offers more power and torque from its new four-cylinder diesel engine

a tablet mount. The windscreen wiper has been revised to optimise screen coverage, while drivers can specify a premium leather steering wheel and advanced joysticks from the factory. The interior trim now matches Case IH's larger tractors. Externally there are new LED marker lights, plus a new air-line connection for inflation and cleaning.

Improved Puma

Puma 140-175 tractors build on the recently revised long-wheelbase Puma 185-240 tractors. Like the Maxxum, they receive a

redesigned entrance with new steps and the same in-cab upgrades to improve refinement and compatibility with mobile devices.

For loader users there is a new joystick with integrated forward/reverse shuttle and gear-changing features. CVXDrive models have received transmission upgrades to improve the shuttle and acceleration/deceleration and enhance the drive pedal sensitivity. The Pumas also receive Selection, Advance and Professional option packages. Professional focuses on AFS technology and is guidance-ready.



The four-cylinder Maxxum 145 is just 5hp shy of the six-cylinder Maxxum 150



The Puma 175 CVXDrive is the most powerful of the short-wheelbase Puma range

AGRITECHNICA 2022 CANCELLED

Organisers of Agritechnica have announced that the event will not take place in 2022 as a result of the current pandemic situation and official regulations in place in Germany. The show had already been postponed from its November 2021 date to February 2022, however the next edition will now take place from 12 to 18 November 2023, as the event reverts to its normal biannual cycle.





CNH PARTNERS WITH MACDON

Case IH and New Holland have announced a strategic partnership with MacDon Industries to manufacture co-branded draper headers. The new line of headers will be available to order through Case IH and New Holland dealers early in 2022. They will complement the combine manufacturers' existing offering of combine headers, including New Holland's Varifeed, to give a wider header selection. MacDon will continue to manufacture and distribute its full line of combine draper headers under the MacDon brand to all its dealers and customers for all major combine brands.

MF INTRODUCES NEW LOGO

Massey Ferguson has launched a fresh new look for its Triple Triangle logo as it celebrates its 175-year anniversary in 2022. The triple triangle shape has embodied Massey Ferguson since 1957 and the most recent version is the fifth iteration of the design.

The new logo will be progressively implemented across the globe, on digital channels and marketing material moving forward, including in MF dealers. New machines will also adopt the new branding.



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Väderstad Proceed opens the future of drilling



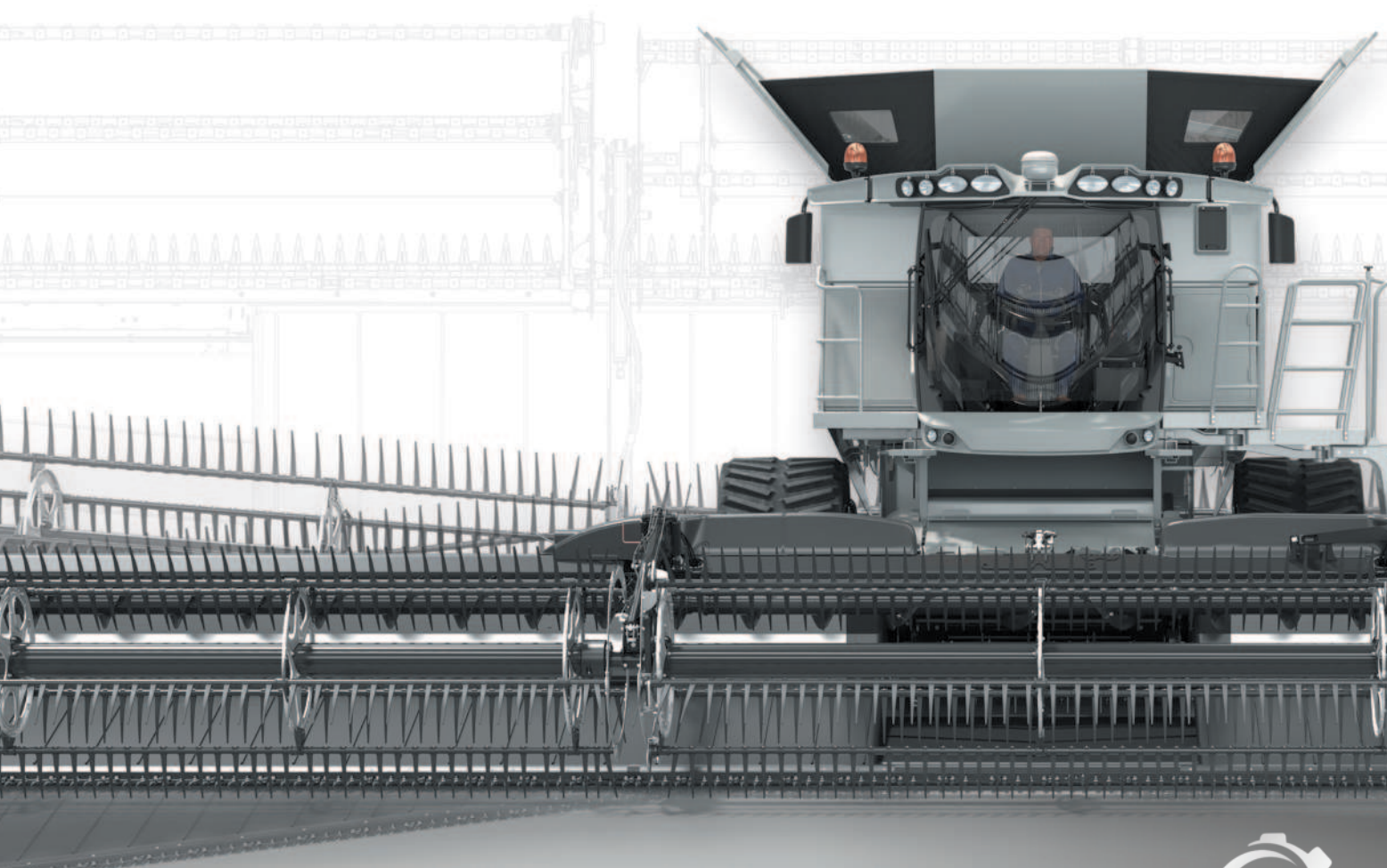
Väderstad has made an unprecedented and huge leap from current seeding technology with a new drill concept called Väderstad Proceed, which could fundamentally change the way farmers operate. The principle is based on one single machine that is capable of increasing the yield potential of a full range of crops, including wheat, barley, oilseed rape, sugar beet, peas, maize and sunflower.

At the heart of Proceed are its high-precision row units, which can place small

seeds at the perfect depth with millimetre precision. Prior to seed placement, individual pre-drilling wheels consolidate the field to ensure the same conditions for each seed. When the seeds reach the row units from the central hopper, an adapted version of the Väderstad PowerShoot singulation system takes full control of each single seed all the way down to the soil. Each seed is received by a stop wheel, which optimises seed-to-soil contact at selected depth across the full working width of the machine.

To provide the driver with full control, each row unit is electrically driven and controlled via the iPad-based control system Väderstad E-Control. Functions include row-by-row shut-off and variable rate, dynamic tramlining, individual calibration, as well as real-time precision monitoring and control.

Proceed has a row spacing of either 225 or 250mm. Easy calibration and a quick change of seed discs allow the drill to switch to 450 or 500mm for crops such as sugar beet or oilseed rape, and to 750mm for crops such as maize, sunflower or cotton.



Hall: 10 Stand: 10.220





FastBale gets film-on-film ability

Vicon's FastBale non-stop round baler-wraper combination is now available with film-on-film capability, in addition to traditional net tying. Film tying is exactly the same as net tying - only the material used to

secure the bale is different. The revised process sees film used to tie the bale before it leaves the chamber, and with it come several advantages.

Thanks to film's pre-stretch capabilities, the film-on-film process reduces bale

expansion as it leaves the chamber, creating a denser bale than the net-wrapped equivalent. And with it, less oxygen is trapped inside the bale, contributing to an improvement in forage quality. The film option adds £4170 to the cost of FastBale.

KRONE LAUNCHES EASYWRAP 165 T BALE WRAPPER

Krone has launched the new double-arm EasyWrap 165 T round bale wrapper, which follows on from the EasyWrap 150 that was launched last year. Wrapping 1.00-1.65m diameter bales, the EasyWrap 165 T lifts up to 1650kg bales and wraps them at speeds of up to 40rpm, controlled from a cab-based ISObus or Krone terminal.

The wrapper couples to the tractor linkage with the help of a headstock that swings into position and couples to the lower link arms.

The hydraulic drawbar can swing to the side for optimum bale collection. Equally convenient is the changeover from road to work position by a touch of a button. An optional version of the drawbar provides stowage for ten spare film rolls. In addition, the wrapper is also available with LED work lights and three extra lights for night work.



FENDT WAGONS RELOCATE

Fendt has relocated the production and development of its loading wagons in Germany from the Waldstetten site to Wolfenbüttel to help expand the forage technology offering. The move will take effect from September. "We want to ensure outstanding quality of the Fendt Tigos in design and workmanship over the long term," says Christoph Gröblinhoff, vice president & managing director of AGCO/Fendt. "In the coming years we will invest in the development of forage technology as well as in the production of Fendt products. Our location in Wolfenbüttel is perfect in size and structure for further expansion."

KÖCKERLING ULTIMA CS NOW WITH SPEEDDRILL

Köckerling is now offering the Ultima CS tine seed drill with an additional small seed drill, called Speeddrill. This means that catch crops or fertiliser can be applied at the same time as regular seeds.

The Speeddrill has a tank volume of 400 litres and a hydraulically driven metering device. A comfortable control is integrated into the machine display of the Ultima CS and is also ISObus capable. The Ultima CS uses the single-shot method, which places fertiliser and seeds in the soil with the same outlets.

The Speeddrill is available as an option for the Ultima CS 300, 400 and 600 machines and does not affect transport width and height.



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Claas UK takes apprentice training in-house

In an industry first, Claas UK will take its apprentice training in-house in a new dedicated Apprenticeship Academy adjacent to the Claas Academy at Saxham, Suffolk. The new academy makes Claas the only UK agricultural machinery



manufacturer to offer and deliver an in-house apprenticeship scheme all under one roof. It is also a first for the Claas Group and the €3m investment will provide a blueprint for the development of similar schemes within the company's global operation.



CESAR GETS TO HALF-MILLION LANDMARK

The CESAR (Construction Equipment Security and Registration) scheme has reached a major milestone in its rollout across the construction plant and agricultural machinery industry. In November, the 500,000th machine fitted with the security marking system rolled off the production line.

CESAR, powered by Datatag and owned by the CEA (Construction Equipment Association) and the AEA (Agricultural Engineers Association) was launched in 2007 to combat machinery theft across the industry. Over 85 per cent of new construction and agricultural machinery in the UK is now fitted with the system as standard.

FUTURISTIC NEW HOLLAND REVEALED

New Holland has offered a glimpse into the future with its innovative Straddle Tractor Concept, designed for narrow vineyards. New Holland partnered with Pininfarina for the futuristic design, based around a high-comfort, high-safety cab, which is tapered and uses wrap-around glass for optimum visibility, while the overall exterior utilises flowing and dynamic automotive-inspired lines. The interior is easy to access thanks to the large single door and rotating seat.



ENTRY-LEVEL TOPCONS NOW ISOBUS ACCREDITED



Topcon's entry-level XD and XD+ touch-screen consoles are now fully ISOBus accredited, having been awarded official AEF (Agricultural Industry Electronics Foundation) certification. As such, in addition to being compatible with the full range of Topcon precision farming systems, including auto-steer and implement guidance, automatic headland turns, crop sensing, yield monitoring, variable rate and auto section control and Norac boom height control, the consoles have also passed the AEF's tests for ISOBus functionalities.

Topcon XD and XD+ start from £1120 and £2140 respectively from LH Agro (www.lh-agro.co.uk).

NEWSINBRIEF

New Claydon dealer announced

Claydon Yield-o-Meter Limited has appointed Turney Group to sell and support Claydon Opti-Till crop establishment products in Oxfordshire, Buckinghamshire and south Northamptonshire.



Stihl moves to new Surrey HQ

Stihl GB has unveiled plans to build a new headquarters and warehouse in Camberley, Surrey, to improve logistics to its 700 dealers. It is due for completion in December 2022.



New Holland dealer expansion

Haynes Agricultural Ltd has completed the acquisition of neighbouring dealer Oakes Bros Ltd. It takes Haynes to six depots in Kent, Sussex, Hampshire, Wiltshire, Berkshire and Surrey.



Kubota acquires guidance firm

Advanced guidance and auto-steering manufacturer AgJunction has been acquired by Kubota, bringing specialisation in hardware and software for automated machine control.



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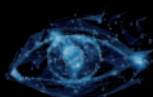


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HEDGE-CUTTING KIT

“We’ve had a pretty decent season, good grass harvest and a bumper maize season, and managed to get all of our fieldwork done easily this year, it has to come wet at some point,” says Robin Williams of R.E. Williams, farmers and contractors from Chester.

Our visit to Robin coincided with the job of facing up a customer’s roadside hedges. Though the weather at the time was fairly horrible following a prolonged spell of wet conditions, Robin retained his measured attitude to the winter jobs after a good year, which included the delivery of his John Deere 6175R Command Pro that was new in March and now has 1900 hours on the clock.

The 6175R has a quieter time after maize harvest so gets assigned to trimming duties, providing a solid base for the 2018 McConnell 6565T, which is a three-point mounted unit running T flails. Robin likes the convenience of dropping the trimmer off quickly if autumn fieldwork collides with hedge-cutting duties. The controls are via the McConnell Motion box, which Robin thinks is the best iteration of controls he has had to date.

IMAGE KEN TOPHAM



One L of a loader

The L85 wheeled loader has been developed to complement Bobcat's existing line-up of skid-steer and compact loading machines. *FMJ* joined LandPower TV to put the first UK model to the test in Lancashire

WORDS AND IMAGES **SIMON HENLEY**





Above: Cab interior is thoughtfully laid out and features an air seat. Adjustable steering allows the driving position to be set for tall drivers (inset left) without compromising leg space

“The design of the cab is arguably the crowning glory of this machine”

braking, automatic boom suspension, an oscillating centre pivot and automatic park-brake activation. What you don't get is a pick-up hitch or a telescopic boom option.

Closer look

Now we've covered the basics, let's take a closer look at the L85, starting with the 2.4-litre Doosan D24 Stage V engine located at the rear of the machine. Rated at 68hp, the engine is positioned for ease of maintenance. The dipstick and oil filter sit side-by-side, right where you can reach them, and there's a large fuel filter to extend the service intervals.

At this point, we should mention the engine cover, which Bobcat claims has been designed to provide maximum rearward visibility while retaining a signature Bobcat look. Hinged behind the cab, it elevates to provide generous service access to both the engine and the key hydraulic components, including the pump.

Power to the wheels is provided by an electronically regulated hydrostatic gearbox, which features two speed modes (work and travel), controlled by a hare/tortoise button on top of the joystick. Maximum speeds are 9.0kph in work mode and 30kph in travel mode.

A key feature of the L85 is the cab, which is a fully enclosed and pressurised unit. Roof height is less than 2.5m, albeit only just, to allow the machine to access confined areas with low door or roof heights. The design of the cab is arguably the crowning glory of this machine. There are two large glass doors on either side, which provide excellent visibility from floor to ceiling. The doors are mounted on the B-pillar, which sits right over the centre of the rear axle so there's plenty of room for climbing in and out.

The doors on the L85 can be folded right back and locked into position on latch arms extending behind the cab frame. To make unlatching the doors (to close them) more convenient, Bobcat has thoughtfully placed a pull-type release into the door grab rail, which can be easily reached from the driver's seat. Once inside ▶

Spicer axles and a Zettlemeyer headstock.

In terms of how it's specified, the L85 has a bucket capacity rating of 0.8m³ and features a fixed Z-linkage boom, with a max lift height of 3.25m to the pivot point. The wheelbase measures 2.1m, its outside width is 1.9m and it tips the scales at a shade over five tonnes with the bucket attached. The hydraulic pump is rated at 75 litres per minute, although a high-output 100-litre pump is available as an option. Constant pumping for the auxiliary hydraulics comes as standard. In terms of lifting performance, the maximum lift is 2.3t, with a straight-tip load rating of 3.8t, which decreases to 3.2t when turned at full lock (40 degrees). Tear-out force is an impressive 4978kg.

Standard features include permanent four-wheel drive with differential locking, four-wheel

The Bobcat product portfolio now contains more loaders than any other manufacturer on the planet. The all-new L85 compact wheeled loader is built at Bobcat's manufacturing facility in the Czech Republic, where demand for the company's products has recently seen the addition of a fourth production line capable of building an additional 1000 machines per year.

The L85 is a brand-new pivot-steer loader that Bobcat has developed from the ground up. It's the company's first proper crack at the compact wheel loader market and they've done it by using an assortment of well-proven components, including a Bosch-Rexroth transmission,



This picture: The L85 is available with a wide range of attachments but can only be specified with a Zettlemeyer headstock. Switch activated headstock locking mechanism (above inset) can be operated with one hand



“What makes the L85 stand out is the overall design and the thought put into it”



TECHSPECS

Bobcat L85

Engine Doosan D24
2.4-litre Stage V

Power 68hp @
2600rpm

Transmission
Bosch-Rexroth
hydrostatic

Top speed 30kph

Boom type Z-Linkage

Hydraulics 75 L/min
(100 L/min
optional)

Lift capacity 2.3t

Max lift height 3.25m

Max pivot 40
degrees

Height 2.49m (to
top of cab)

Weight 5091kg
(operating)

Price £45,000
(MRP)

and seated, the suspension seat and hand controls can be easily adjusted to fit the operator's requirements. The steering column is adjustable both horizontally and vertically. There's plenty of lateral seat adjustment and the joystick, which is integrated into the seat armrest console, can also be adjusted horizontally.

Mounted on the right-hand A-pillar is a 5in LED monitor. Display options for setting up monitoring vital statistics and machine performance are controlled using a small dial on a button pad positioned in front of the joystick. One of the screen settings is for the optional integrated reversing camera, which can either be selected as a permanent display or left to automatically come on when reverse is selected.

The right-hand control console adjacent to the seat contains soft switches that control the main functions of the L85, including the

lights, windscreen wipers, seat heater and so on. There is also plenty of storage space for water bottles and cups, in addition to a 12v charger outlet and USB ports.

Start-stop operation

The engine is started by a key, however for general start and stop operations during the day Bobcat has added a neat feature that allows the driver to start and stop the engine using two soft-touch buttons (coloured red and green) located on the right-hand console. It's another good idea that makes the L85 very easy to live with.

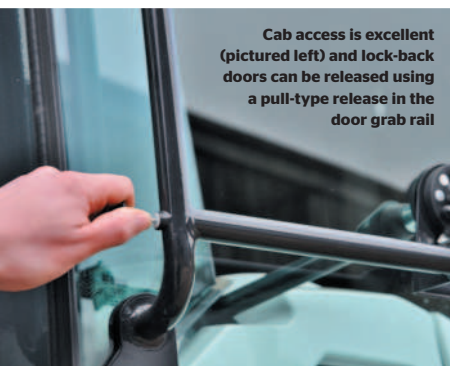
The joystick falls easily to hand and integrates buttons for activating the diff-lock, boom-float and auxiliary hydraulics. Direction changes are controlled using a switch on the front of the joystick for convenient index-finger operation. At work, proportional control of the boom

and bucket is very good. There's plenty of hydraulic power and excellent response, but an initial period of adjustment is required while getting used to the sensitivity of the joystick action.

Another neat feature on the L85 is the headstock locking mechanism. It is a simple one-handed system activated by a rocker switch on the steering console, which pulls in the locking pins when you detach the implement. The pins are spring loaded so they pop straight back into place, however if required you can also hydraulically lock them out using the same switch.

Down and dirty

FMJ's introduction to the L85 presented us with the opportunity to use the new machine on our Lancashire host's dairy farm. The Bobcat was used for a variety of tasks including muck loading,



Cab access is excellent (pictured left) and lock-back doors can be released using a pull-type release in the door grab rail



Driving position is well laid out with excellent visibility. The seat armrest console integrates the joystick

straw handling and filling the diet feeder, which, if we are being honest, it could only just manage due to its limited lift height.

In terms of overall usability the L85 is very easy to live with. Forward visibility is very good, whether working at ground level or at maximum lift height. We've already mentioned the hydraulics, but we should add there is a surprising amount of tear-out force, with the power to dig out compacted muck in the cowsheds using the standard bucket.

What does take some getting used to is the transmission. During close-quarter work the throttle pedal needs a firm shove to get the transmission to respond, making it hard to control at low speeds. You subconsciously find yourself waiting for the gearbox to catch up with the hydraulics, which isn't necessarily a

good thing when you're manoeuvring between stanchions or working up against a feed barrier.

For chasing round the yard as a jump-on/jump-off materials handler the L85 is great little truck. Operational stability is excellent, the engine produces plenty of power and once you get the feel of it you can thread it round tight corners and between buildings with confidence. The ability of the centre pivot to oscillate (as opposed to the rear axle pivoting) keeps all four wheels on the ground and, with permanent four-wheel drive and a diff lock, this little loader has an astonishing amount of grip both on and off the concrete.

Bobcat is the first to admit the L85 has not yet been specced for agricultural applications. And they're right. Fitted with a telescopic boom this would be a great little loader. Unfortunately, in its current form, it has limited scope as a purely agricultural materials handler for the UK market. But that doesn't mean we don't like it.

What makes the L85 stand out is the overall design and the thought put into designing it. We love the cab design, the quick-detach carriage locking system and the overall performance of the loader. But, most of all, we like the fact Bobcat has built a simple to use compact loader with plenty of useful features but no unnecessary driver aids or electronic gadgets.

FMJ



Above: LED screen settings are controlled using this pad with a scroll and selection buttons. Screen settings can identify vital operating statistics, machine performance or the integrated reversing camera

Below: Wide-opening engine cover reveals an engine bay designed for service access. All filters and check points are easily reached. Service intervals are 500 hours





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Anniversary special

COVER STORY

In 2021 New Holland dealer Russells celebrated 100 years as a limited company. To honour this historic milestone the company commissioned a special edition New Holland T6.180 Dynamic Command, which *FMJ* got to see up close

WORDS DAVID LALEY IMAGES DAVID LALEY/RUSSELLS

For many, the name Russells is synonymous with two brands: Ford and New Holland. The family-run company currently headed by Paul Russell first began selling Ford tractors and New Holland machinery in 1983 after being a main dealer for David Brown for more than 30 years. Russells also sold Fordson and Ferguson tractors in the 1940s, along with Allis Chalmers and Nuffield tractors in the 1950s and 1960s.

Long before they began selling Ford and New Holland machinery Russells was also a prominent British manufacturer of agricultural

equipment in its own right. Between the mid-1800s and the early 1980s they would develop, manufacture and market a huge array of award-winning machinery from ploughs, cultivators, seed drills and bale handling kit, plus many other products including their own tractor, a tool carrier called the 3-D.

With profit margins tightening and the cost of raw materials on the rise, Russells ceased manufacturing its own products at the end of 1986, going on to hold a complete sale of their foundry equipment. Thereafter the company focused its attention

exclusively on sales, building up an extensive portfolio of well-known machinery franchises.

Today Russells comprises nine agricultural and two groundcare depots spread across the north of England, Derbyshire and Northamptonshire. They are home to more than 50 machinery brands including New Holland, Vaderstad, Manitou, Pottinger, McHale, Shelbourne Reynolds, Nugent and Lynx to name a few.

Where it all began

The Russells story began all the way back in 1849, when three brothers

“Russells were also a prominent British manufacturer of agricultural equipment”

TECH SPECS

New Holland T6.180 Dynamic Command

Engine NEF 6.7-litre, six-cylinder, turbocharged

Max power 175hp at 2200rpm

Fuel tank 330 litres

Transmission 24x24 Dynamic Command

Hydraulics 150 litres per minute

Remote valves 5

Rear linkage 7.9t

Front linkage 3.2t

Cab Four-pillar Horizon

Lighting 16 LED, 360-degree pack

Front tyres Michelin Multibib 540/65 R28

Rear tyres Michelin Multibib 650/65 R38

Length 5.2m

Wheelbase 2.7m

Weight 6.5t

Paintwork Truck Technics, Leyburn

Graphics Big Boolies Ltd, Malton





► who grew up on farms surrounding Kirkbymoorside in North Yorkshire set up a blacksmith shop in the village of Great Edstone.

George Russell was the most forward-thinking and talented engineer of the three and was the driving force behind the new company. His improved 11-coulter drill scooped a major design award at the inaugural Ryedale Show in 1855. Following this success Russells continued to expand their range of bespoke horse-drawn cultivators, ploughs and seed drills, moving to new facilities in Kirkbymoorside in 1890.

In 1919 the Russell family gave up farming completely to focus on manufacturing machinery, and with significant investment from the Shaw and Slingsby families developed new products. After World War 2 ended, the company was renamed from Slingsby, Russell and Brown Ltd to Russells (Kirkbymoorside Ltd) and from the 1950s through to the mid-1980s it continued to launch new products.

One standout machine was Russells' own tractor, introduced in 1978 and called the 3-D. It was a tool carrier based on the David Brown 2D. It featured a rear-mounted 20hp

Above left: AdBlue and diesel tanks are situated alongside the T6.180's cab access steps

Above: The Sidewinder II armrest comes with the CommandGrip multi-function joystick

two-cylinder air-cooled Lombardini diesel engine that powered hydrostatic drive motors fitted to each rear wheel. It was compatible with a whole host of mid-mounted

"I can recall a row of 7810 Silver Jubilees in Russells' yard waiting to be delivered"





Far left: The T6.180 is equipped with a 7.9t category III rear linkage and five remote rear spool valves

Left: The Dynamic Comfort fully suspended operator's seat features pneumatic lumbar support and two-stage heating

Right: The Horizon cab features a comprehensive climate control centre



Above: Russells after-sales manager Adam Robinson was inspired by the 7810 Jubilee for the Russells 100 Year Anniversary tractor

equipment for specialist inter-row cultivation, hoeing and spraying work. Around 30 were built in a six-year production run.

Dealer expansion

After becoming Ford and New Holland agents in 1983 Russells expanded its trading area by taking over dealers Croft and Blackburn and Neasham Tractors. By 1986 they had opened up another depot at Burneston near Bedale. In 1988 Russells was trading from four

branches including Kirkbymoorside, Darlington, Burneston and Stokesley.

In April 1999 Russells acquired Platts-Harris' Northallerton depot, before purchasing its Selby and Epworth branches in 2004. In 2021 Russells acquired Platts Harris' remaining depots at Tuxford and Darley Dale. In between this, in June 2003, it took over Malton-based Ford, Fiat and New Holland dealer R. Yates & Sons Agri.

Paul Russell joined the business in 2001 and when his father John retired, he took over as managing

director in March 2003. In 2008 Russells historic Kirkbymoorside depot closed its doors for the final time and the company moved to a new purpose-built headquarters situated near Malton.

In January 2016 Russells began trading in Derbyshire following its acquisition of New Holland dealer Hallmark tractors. This was followed by the establishment of a new depot at Rothwell in Northamptonshire in July 2017. A new depot at Leyburn in October 2018, a facility at Cubley in Derbyshire in October 2019 and more recently a parts drop-off and pick up ▶



Replica for sale

A 1:32 scale model of the tractor, manufactured by Universal Hobbies, is available, priced at £50 each and all proceeds will be donated to the Yorkshire Air Ambulance. For further details please email charlotte@russells.uk.com or visit Russells website russells.uk.com.



Above: The anniversary T6 was inspired by Ford's 7810 Silver Jubilee, launched in 1989 to commemorate 25 years of tractor production at Basildon

Left: The Horizon cab is equipped with the 360-degree LED lighting pack, matching silver mirror covers and exhaust guard

Right: The T6.180 emerged from the Leyburn workshop in June 21

► centre near Darlington conclude the expansion to date.

Anniversary celebrations

Keen to showcase its history, Russells went all out to honour its 100-year anniversary since becoming a limited company. At the centre of the celebrations and displays was a fully restored example of what's believed to be the last Russell 3-D tool carrier produced, and a specially commissioned New Holland T6.180 decked out in a bespoke silver livery.

The T6 livery pays homage to the Ford 7810 Silver Jubilee, a high-specification special edition tractor based on Ford's best-selling 7810 launched in 1989 to honour 25 years of tractor production at its Basildon plant. Only 150 were produced, as farmers at the time were unconvinced that an expensive

tractor equipped with unnecessary extras and one-off livery would hold its value. Originally Ford agents were promised one Jubilee each, however because they were taking longer to shift dealers like Russells found themselves being offered discounted Silver Jubilees to free up forecourt space. It's believed they sold six 7810 Silver Jubilees from new.

Since then the 7810 Silver Jubilee has become a cult classic, two of which achieved over £40,000 at auction recently. Combined with childhood memories, this inspired after-sales manager Adam Robinson to come up with a silver livery for their anniversary tractor.

"I was brought up surrounded by Ford tractors on my step-father's farm and the first tractor I drove was his standard 7810," says Adam. "I can also recall a row of 7810 Silver Jubilees in

"Both tractors drew a huge amount of attention"



Below: After-sales manager Adam Robinson unveiled the T6 on the opening day of the 2021 Great Yorkshire Show

Russells' Kirkbymoorside yard waiting to be delivered and have always been fascinated by the Silver Jubilee's history. Three that Russells sold new still remain with farmers and contractors close to existing depots in North Yorkshire."

Special tractor

New Holland's flagship mid-range 175hp T6.180 equipped with the



24x24 Dynamic Command eight-step semi-powershift transmission was chosen as the basis for Russells' 100 Year Anniversary tractor. It is equipped with a Terraglide suspended front axle, 3.2t front linkage and a set of chunky Michelin Multibib tyres.

The T6.180's four-post Horizon cab is fitted with 360-degree lighting featuring 16 LEDs, while inside the Dynamic Comfort seat features pneumatic lumbar support, a swivelling backrest and two-stage heating controls. A leather buddy seat is also fitted. The T6.180 is powered by an NEF 6.7-litre, six-cylinder turbocharged engine equipped with an engine power management (EPM) boost system. Oil flow is 150 litres per minute, with a 7.9t category III rear linkage.

Once New Holland had signed off Adam's proposed silver and blue livery, the T6.180 was taken to body repair and paint spraying specialist Truck Technics at Leyburn, who applied the paint that includes subtle gold flecks in the silver. Vehicle graphics and printing specialists Big Boolies Ltd from Malton then headed to Leyburn to apply the new decals and finishing touches. The tractor was completed in June before being publicly unveiled by Adam on the opening day of the Great Yorkshire Show in July 2021. It was displayed alongside contractor Sandy Kidson's restored Russells-supplied Ford 7810 Silver Jubilee.

"Both tractors drew a huge amount of attention so we thought it would be great to have them both working together," explains Adam. The special edition T6.180 made its working debut with Adam at the controls in November, rather poignantly on his stepfather David Thompson's farm, with David at the controls of Sandy Kidson's Ford 7810 Silver Jubilee.

"It's been great to have been involved with this project from the very start, having worked for Russells since 2003," says Adam. "I'm immensely proud of the work that went into creating the livery, having the opportunity to unveil the tractor at the Great Yorkshire Show and being able to operate the tractor alongside my step-dad this November. It's been a historic year for Russells, one I'm massively grateful to have been a part of."

FMJ

Russells – an illustrated history

The machinery that took Russells from a village blacksmith to a successful agricultural dealership



1 Russells was formed in 1849 by three brothers including talented blacksmith George Russell. He specialised in designing and building seed drills. Russells became a limited company in March 1921.
2 Either side of the Second World War, Russells developed and manufactured labour-saving products including this crop loader fitted to a Fordson Standard.
3 From their Kirkbymoorside based facilities Russells specialised in designing and building root crop machinery including a vast range of thinners, steerage hoes and precision drills in the 50s and 60s.

4 As their manufacturing expanded, in 1890 Russells moved from Great Edstone to a foundry located in Kirkbymoorside, which would remain their headquarters until 2008.
5 From the 1940s until the company's takeover by Tenneco in the early 1980s Russells were main dealers for David Brown tractors. They became Ford and New Holland dealers in 1983.
6 During the 1950s and 1960s Russells also sold Nuffield tractors, like this Universal Four seen on their stand at the 1960 Malton Show.

7 Russells were dealers for Allis Chalmers tractors up until the company ceased manufacturing its products in the UK in 1964.
8 Until they chose to cease manufacturing to focus on sales, Russells produced a successful range of elevators and bale-handling equipment from 1987.
9 Russells launched their own tractor, a 20hp tool carrier called the 3-D in 1978. Around 30 were made until 1984.
10 The T6.180 made its working debut with Adam at the controls, working alongside his stepfather David Thompson at the controls of Sandy Kidson's 7810.

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Grain giants

In John Deere's 75th year of making combine harvesters, *FMJ* visited J Haig Hamilton & Son to see two of the company's latest models - an S790i and X9 - in action

WORDS AND IMAGES DAVID WYLIE

J. Haig Hamilton & Son's farming operation is run as a family partnership between Haig Hamilton (Jnr), his two brothers and his mother and father. It employs seven full-time staff plus additional part-time assistance at peak harvest times. Haig also has a long-standing and close working relationship with his local John Deere dealer, Haddington-based Thomas Sherriff & Co Ltd, which supplies the farming operation with equipment, service and a range of precision farming support to aid in farming 3500 acres of arable crops.

Like any dealer, Sherriff & Co would like a greater share of the market for combine harvester sales,

and with that in mind they have ambitious plans for five different models of combine to demonstrate in 2022. For 2021 they started off the season demonstrating the popular mid-range S790i.

The S-Series is offered as a 75 tonnes-per-hour combine. It's JD's largest single-rotor machine and has four engine power options. Simple design features include only three drive chains on the whole machine and no daily greasing points. The S790i is the most powerful at 625hp, and is said to have advanced systems to obtain consistent grain quality and low losses in all conditions thanks to its Integrated



Above: It takes just over 90 seconds to unload the S790's 14,100-litre grain tank at 135 litres per second

Below: The X9 cutting a wheat crop for Haig Hamilton, as it puts forward its argument for being the sole combine in his fleet

Combine Adjust (ICA2) feature that is designed to eliminate the need for regular manual adjustments.

At work to receive some fine-tuning ahead of a longer demonstration tour, Sherriff & Co's S790i had a 35ft (10.7m)

header fitted when we saw it in action with Haig Hamilton.

"The S790 performed really well harvesting our OSR crop and our driver felt it was a quiet and comfortable machine to operate," says Haig.

"It would be an option for us if we were going down the route of operating

two machines to cover our acreage, and any expansion in arable crops we may be thinking about for the future."

One big machine

For Haig, John Deere's latest big combine has more appeal. For many years he has successfully run Claas harvesters, happy with the performance of his current range-topping Claas Lexion 780 and 40ft header, plus the service support he receives from his local Claas dealer. But as he considers investing in a new combine within the next 12 to 18 months, he couldn't refuse the offer to test the mighty X9.

"The starting point of ▶



"The table performance of this X9 combine is simply awesome"

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► any good combine is the way the crop is presented into the machine, and in that respect, the table performance of this X9 combine is simply awesome,” Haig comments. “And with its flex-head design, and the 10 degrees of angulation, its ability to follow contours in all ground conditions is quite outstanding. The design of the combine from the front to the back impresses very much and overall I feel it’s simply a beast of a machine.

“The space, visibility, controls, comfort and very low noise levels of the new X9 cab are among the very best John Deere cabs I’ve experienced,” he continues. “The noise levels are lower than the S790 model - it’s just a super quiet space to work in. The twin-rotor design and output of this X9 are quite phenomenal at over 100 tonnes per hour in wheat, and to achieve this with just 700hp is quite remarkable.

At the heart of the John Deere X9 1100 model is a new PowerTech PSS 13.6-litre Stage V engine rated at 700hp. With HarvestMotion, it is said to use optimised components for substantially more throughput at lower rpm for significant fuel savings of around 20 per cent.

During our visit the X9 motored along at 7kph, performing so well in wheat that the demo team were already planning to bring their biggest header for next year’s demonstration,

which would add 5ft to the already impressive 40ft head fitted.

The belt design of the header is said to offer farmers an extra hour starting time in the morning and another hour later in the evening. When this added benefit is accumulated over a period of six days, it adds up to an extra 12 hours of productivity, which could amount to 150 to 200 acres cut per week as the head belt system copes well in damp conditions to extend the working day.

This is aided by the header wings behaving like two independent cutter bars by flexing up to 10 degrees up or down on undulating ground.

Operations Center

“The quality of information and the level of automation from modern John Deere equipment is simply mind-blowing, as this combine is constantly and automatically adjusting itself for the optimum performance. Information received

Right: The 735D header on the S790 promotes head-first feeding for smooth crop flow. Side knives are an option

Below: Haig would consider two mid-range combines like the S790i instead of one larger machine, purely because one machine can’t be in two places at once



John Deere S790i combine on a test run before a farm demonstration tour



Right inset: Haig Hamilton enjoys being behind the wheel of the John Deere X9 1100



Left: The header belt system copes well in damp conditions to extend the working day

Right: New X9 cab design gives low noise and comfort, and even has a massage function in the operator's seat



Left: Carrying the weight of this large head is a new track design, which provides an extra 30 per cent larger footprint to help reduce soil compaction and a comfortable and smoother ride

A folding auger is standard. It swings up to 106 degrees and can be fitted with a wireless camera to see inside trailers from inside the cab

“Small gains and clever innovations resulted in the performance we see in the X9”



Right inset: Once set up, the X9 constantly and automatically adjusts for optimum performance

from John Deere Operations Center helps us to maximise our efficiencies,” says Haig.

With his current acreage, one large combine works well for him. However, he's mindful that should his acreage increase, either from buying more arable land or enjoying greater contracting opportunities, he will have a dilemma on his hands. Switching from one large combine to two mid-range machines like the

S790 is one possibility. However, computer modelling by John Deere shows that one large combine is the most cost-effective route when you factor in staff and fuel costs.

Magnus Bell is the harvest territory manager for John Deere. He explained to us that the top-of-the-range X9 can be best described by three numbers: 100, 10 and 1. Over 100 tonnes per hour performance in wheat, 10 per cent more capacity than any other combine currently on the market and just one per cent ▶

TECHSPECS

John Deere X9 1100 and S790i

Model	X9 1100	S790i
Engine	PowerTech PSS 13.6-litre, 6-cyl	PowerTech PSS 13.5-litre 6-cyl
Rated power	603hp	543hp
Max power	700hp	625hp
Rated speed	1900rpm	2100rpm
Rotor	Twin	Single
Rotor length/dia	3.51m/61cm	3.12m/76.2cm
Threshing area	4.0m ²	2.75m ²
Separating area	3.6m ²	1.54m ²
Cleaning shoe area	7.0m ²	5.2m ²
Grain tank	16,200 litres	14,100 litres
Unloading rate	186 L/sec	135 L/sec
Fuel tank	1250 litres	1250 litres

► of losses. These critical figures were the key criteria when it came to designing and building the new X9.

John Deere also wanted to get the maximum output with the minimum horsepower, so when the prototype was built they discovered that it was consuming too much energy. Each engineer responsible for the individual elements that make up the whole machine was asked to go back and find energy savings for their section of the combine, resulting in removing 115hp of energy consumption to operate the combine.

As an example, the 124 knives on the straw chopper unit have little dimples on them, which make them move through the air more efficiently. This saves 27hp alone. "A combination of small efficiency gains right across the machine and some very clever innovations has resulted in the high efficiency performance we see in the X9 today," adds Magnus.

The front feeder house is massive at 1720mm wide, the widest on the market. A 4.0m² effective threshing area and the huge separation area of 22.5m² from the twin rotors and large sieve area all help to process the crop efficiently. The X9 is designed for the global market and tested in different environments, including a pre-production machine operating in Scotland, which offers one of the most challenging areas in Europe



Above: The X9 has over 100 tonnes per hour performance in wheat and 10 per cent more capacity than any other combine currently on the market



Right: John Deere X9 1100 is powered by a 700hp PowerTech PSS 13.6-litre engine

Below: John Deere's Operations Center data can be viewed on your smartphone



The X9 has a huge grain tank of 16,200 litres, and a high-performance unloading rate of 186 litres per second

with damper conditions and higher yields of grain to contend with.

One unique feature of the John Deere combine is the active weigh cells mounted in the grain tank to provide real time accurate information as the combine is harvesting. The X9 has a huge 16,200-litre grain tank, which has an unloading rate of 186 litres per second, resulting in just 90 seconds to unload.

In addition to the ICA2 automation control system to make the operator's life easier, the X9 also comes with

artificial intelligence, whereby once all the settings have been dialled in and the automation is making the combine work efficiently, it is designed to self-learn. As the automatic changes are made, another programme looks to see if it has improved machine performance or not and learns what works well and what does not. That said, the operator still has full control if they desire a specific area of output from the combine.

Good fit for Scottish farmers

"I feel this X9 combine would normally be aimed at farmers with around 4000 acres. That said, growing arable crops in Scotland is different as we have a shorter window of opportunity and often catchy weather to contend with," explains Haig. "With that in mind, I feel this X9 would be a good fit for our acreage, along with other Scottish farmers of around 2500 to 3000 acres running a single high-output combine.

"In Scotland we can be combining with moisture levels between 14 to 29 per cent, as when the crop's ready we need to get on quickly and get it harvested, and ideally with the lowest moisture levels possible so we really need a combine that can perform well in all conditions and I feel this X9 will do that just fine. I feel John Deere has really upped its game with the new X9 and it will certainly be a consideration when we have to think about changing our current combine."

EMJ

"We need a combine that can perform in all conditions and I feel this X9 will do that"

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"It will sit comfortably at our target weight of 480kg and produce an excellent bale"



Right: Operator Tom Lambert has been impressed with the New Holland Big Baler 1290HD during its first season



Below right: A knife rotor rather than a packer has helped the Wades increase baling efficiency and feeds material to the pre-compression chamber more evenly



Far right: A two-speed SmartShift gearbox engages the baler's drive once the tractor's PTO has reached 850rpm, then changes into second gear to bring the baler's flywheel up to maximum rpm

Heavy duty baling

C&I Wade has run New Holland big square balers since the 1980s, last year taking delivery of the latest Big Baler 1290HD. *FMJ* caught up with operator Tom Lambert to find out how it's performed

WORDS AND IMAGES DAVID LALEY



Left: Tom Lambert used the 1290HD baler behind this John Deere 6250R for much of the summer

Below: Performance and configuration are monitored through the Intellivue IV screen that works through the 6250R's ISObus terminal



Their commitment and loyalty to New Holland's big square balers meant they were given the chance to run and evaluate pre-production versions of the latest 120x90cm 1290 Big Balers across 2012 and 2013. Around this time an 80x90cm New Holland Big Baler 890 also joined their fleet. They were also given the opportunity to test and evaluate one of the first Big Baler 1290 Plus models, which was joined by a second production model not long afterwards.

Following C&I Wade's switch to John Deere tractors in 2018 their 2012 890 Big Baler was swapped for a John Deere L1533 80x90cm in a deal that was too good to miss out on, but earlier this year a Big Baler 1290 Plus was swapped for one of New Holland's very latest 1290HD balers.

New Holland launched the Big Baler 1290HD at the 2019 Agritechnica Show in Hanover where it scooped a silver medal, closely followed by a Machine of the Year award in 2020. The 1290HD was designed to produce a bale 22 per cent denser than standard large square balers, making handling and transport much more efficient. In February 2021 New Holland announced a new packer version of the 1290HD equipped with three sets of three-tine packers to join the existing CropCutter version.

Hectic workload

C&I Wade's 1290HD arrived in late May in readiness for baling customers' silage and haylage prior to a hectic workload across harvest

with three different operators. Tom Lambert, who has worked for C&I Wade for almost a decade and is one their most experienced baler operators, was tasked with running the 1290HD behind the John Deere 6250R he operates for the Wades.

"While we were never going to set any records with the 1290HD on the Yorkshire Wolds this summer, largely due to the lack of sun, we've still been very pleased with its performance," says Tom. "While the 1290HD could produce a much heavier and denser bale, we've found that in all the crops it's handled it will sit comfortably at our target weight of 480kg and produce an excellent well-formed bale at a reduced pressure compared to the 1290 Big Baler Plus.

"It's done this faster with less bale flakes in crops from wet silage at the start of the season to thick straw swaths, and we know had conditions been better it would have outperformed our other balers to an even greater degree."

Up front the 1290HD comes equipped with a 2.35m MaxiSweep

TECHSPECS

New Holland Big Baler 1290HD

Bale size 120x90

Minimum hp 230hp

Main drive SmartShift two-speed powershift

Main gearbox rpm 1440rpm

Pick-up width 2.35m

Tine bars 5

Double tines 85

CropCutter knives 29

Cut length 39mm

Feeder rotor width 1.2m

Stuffer Fork type with six tines

Plunger speed 48 strokes per minute

Length of stroke 75cm

Knotters 6

Knotter type LoopMaster double knot

Twine ball capacity 36

Tyres Vredestein 600/55R 26.5

Weight empty 14.6t



One of the first high-density New Holland Big Baler 1290HD square balers to go to work in Yorkshire is currently being run on a three-year hire deal by contractor Ian Wade of C&I Wade Ltd, based at Carnaby near Bridlington. Supplied through New Holland dealer Russells, the baler took over from an older 1290 Big Baler Plus in May, and in turn became the flagship baler in his fleet, joining a 2020 New Holland Big Baler 1290 Plus and a smaller John Deere L1533 80x90cm square baler.

Back in the late 1980s C&I Wade began running an 80x90cm New Holland D1000, which was New Holland's entry into the large square baler market and the first to be built at its Zedelgem plant in Belgium back in 1987. From there the Wades would go on to run various Hesston-based New Holland square balers, including a D1010 before their first 1290 arrived.

Thanks to its auto-steer rear axle and narrow profile drawbar, the 1290HD is very manoeuvrable for its size and weight



► pick-up that comprises five tine bars fitted with 85 double tines measuring 5.5mm in diameter. This is capable of handling swaths from the largest straw walker and rotary combines, helped by a pair of top rollers above the pick-up reel, while a pair of heavy-duty guide wheels are designed to run smoothly over the roughest terrain. Swaths are then fed into the CropCutter chopping unit, which features 29 knives equipped with individual knife spring protection and paired rotor fingers per knife.

"Moving to a baler with a knife feed rotor rather than a packer certainly has its benefits," says Tom. "We've found silage and straw feed in much more evenly, leading to an excellent consistent bale shape. It's also easier to maintain because the knife cartridge slides out so you can safely and efficiently replace knives or rotor fingers without any hassle."

Chopped material is then distributed evenly from the knife rotor into the 1290HD's adjustable pre-compression chamber where it is held until the desired density is reached. Bale flakes are then moved to the chamber by an improved stuffer fork featuring six re-designed tines and shear bolt protection.

Huge chamber

Bales are formed in the 1290HD's huge 4.05m-long chamber by an improved

plunger that works at 48 strokes per minute and provides a stroke length of 75cm. This enables the plunger to exert 58 per cent more force than the 1290 Plus to create much higher density bales with less flakes. The plunger is also equipped with a SmartFill II system, a series of load cell sensors to fill the chamber evenly left to right relative to the position of the swath.

"While we've always been impressed with the plunger system fitted to the 1290 Plus balers we've run, the 1290HD's plunger allows you to achieve consistently higher bale densities," says Tom. "SmartFill II also ensures you're filling the chamber evenly and accurately."

The high-density bales are held together by New Holland's patented LoopMaster double knotting system, an advanced evolution of the knotters fitted to the first D1000 balers. The second knot is formed as a loop designed to be 37 per cent stronger than standard to reduce twine breakages. The LoopMaster system also eliminates any twine offcuts so bedding and fodder are not unnecessarily contaminated with twine.

The six knotters fitted to the 1290HD are kept clean from debris by three electric fans, while lubrication to maintain their reliability is provided by the baler's auto-lube greasing system. The performance of the knotters is monitored through the



Above: The 1290HD comes with an improved pre-compression chamber with an updated six-tine stuffer fork

1290HD's IntelliView terminal inside the tractor cab. This also immediately flags up any issues with the knotters.

"It's one of the most reliable knotter systems on the market," says Tom. "Because it's an evolution of a tried and tested system we're accustomed to using and setting up, we've never had any issues from the moment the 1290HD arrived. We were able to go straight to work with the baler and the LoopMaster system performed faultlessly without any niggling set-up issues, which was very reassuring."

Heavy-duty components

Large high-density square balers capable of producing a 120x90cm bale upwards of 550kg in weight require heavier-duty driveline and flywheel components. They demand



Right: The 1290HD is equipped with New Holland's 2.35m MaxiSweep pick-up with five tine bars



Left: The 14.6t 1290HD floats effortlessly over the Yorkshire Wolds thanks to four Vredestein 600/55R 26.5 flotation tyres



Above: Tom Lambert likes the LoopMaster double knotting system. The second knot forms a loop to eliminate twine offcuts



Left: A sturdy set of steps makes access to the 1290HD's density ring and knotters a simple and safe task

more power to operate efficiently and the 1290HD is no exception. To counter this and put as little strain on the tractor as possible, New Holland has equipped the 1290HD with a two-speed gearbox called SmartShift.

When PTO speed reaches 850rpm SmartShift engages the baler's drive, automatically changing into second gear in the process. This allows the flywheel to reach its maximum operating speed of 1440rpm at the same time as the tractor's PTO reaches its full speed. The flywheel itself is 16 per cent larger in diameter than on New Holland's Big Baler Plus range, and provides a whopping 230 per cent more energy. The 1290HD's main gearbox is also equipped with two gears on the output shaft for increased longevity and better power loading distribution.

"Thanks to the 1290HD's slim drawbar you get a great view of the pick-up reel, while the steering rear axle and suspension matched to the Vredestein tyres provide us with excellent stability on the undulating steep fields we often encounter on the Yorkshire Wolds," adds Tom. "The John Deere 6250R's maximum 300hp is sufficient for most of the steep land we've baled, while operators John Stubbs and James Shipley have also

"It's one of the most reliable knotter systems on the market"

successfully run the baler behind John Deere 6215Rs on the flatter ground this summer."

Inside the 6250R's cab Tom relies on New Holland's IntelliView IV terminal run through the tractor's ISObus screen to assess the performance of the baler, make adjustments to bale length and density, and configure the baler's two operational modes that are part of the 1290HD's IntelliCruise system. Charge Control regulates how full the pre-compression chamber is kept before release and Slice Control determines the number of slices or flakes per bale.

"While it wasn't the easiest of summers for baling, the 1290HD impressed us immensely with its potential. Any minor niggling issues have also been dealt with efficiently by Russells who know these balers exceptionally well. If the 1290HD fulfils its credentials reliably over the next two seasons then I can definitely see us running another one." **EMJ**

C&I Wade took delivery of this 1290HD last May on a three-year hire deal to replace a 1290 Plus





Push grain, not luck

Grain pushers are a simple attachment, but while some people choose to build their own, and others don't consider using one at all, there are plenty of options from well-known attachment manufacturers

WORDS **KENTOPHAM** IMAGES **MANUFACTURERS**

Why would you want to use a grain pusher, we asked go-to safety consultant Dr Andy Scarlett from Scarlett Research Ltd. Why would you consider a pusher over a bucket? "Reaching further into the store is fairly obvious, but doing so in a controlled way with greater visibility, and not driving on the crop that you've just harvested make pushers worth having," he explains.

Protecting the grain store is another factor Andy suggests for having a grain or materials pusher. If you have a drying floor, a pusher with a rubber or plastic strip under the edge will be more friendly on the surface, and you can see that edge entirely. Above your head, the lights and store roof will be easier to avoid if you have better visibility, as a bucket gives a couple of metres worth of blind spot on the opposite corner from the cab of a telehandler.

Many pushers are built to minimise material trapping, compared to a bucket that can inadvertently trap enough grain that when the boom is at full reach it may become an overload risk. Another factor in buying a grain pusher is to future-proof your investment by buying a modular version that can easily be extended.



Agriweld

Six grain pushers to consider

Agriweld

This firm manufactures a wide range of pushers from box frame models to large beam pushers, and even offers a telescopic option. These materials pushers can be used to push a wide variety of free flowing bulk material. Agriweld makes a fixed beam pusher (other than the telescopic version) so identifying the length you need will have to be done at ordering. They can fit any telehandler or shovel brackets desired at the headstock end, and can be painted in black or yellow. The blade is equipped with a rubber flap.

Albutt

A modular twin-beam format that come in three sizes: 10ft, 12ft and 14ft

lengths, with optional 3ft and 6ft extensions to increase reach. Albutt offers a plastic wear strip to protect store floors, which can also be retrofitted. The design minimises trapping areas and the headstock can be fitted with any loader bracket, attached via U-bolts. The blade is 2.3m wide, 1.0m high on all models. Yellow paintwork aids visibility in low light situations.

Ceres

These pushers extend into the larger end of the sector, their most popular model being the 6m Barnstormer 6, but they go as small as 3.5m and up to 8m, with an extension that can make 12m. The X model version allows 0.5, 1.0 and 2.0m extensions to be added. The single tube construction reduces trapping and increases manoeuvrability round corners. A rubber blade is standard on the

***Not driving
on the crop
that you've just
harvested
makes pushers
worth having***



Cherry Products

Concept-engineer



Ceres

bottom of the 2.5m-wide blade and any mounting brackets can be specified. The carriage end has feet to prevent headstocks running on the floor.

Cherry Products

This firm employs a twin beam, modular construction for its pushers. Offering base units in 8, 10, 12, 14, 16ft lengths, behind an 8ft-wide blade that is 3ft 4in high and comes as standard with a nylon strip on the bottom for floor protection. The bolt-on

extensions are round to reduce trapping and come in 2ft increments up to 8ft. Any brackets can be fitted to suit your brand of loader. The headstock is angled so that it is vertical when pushing up the face of grain.

Concept-engineer

Four length options of fixed pushers from 3.5 to 5.0m. The standard blade is 1.2m x 2.41m and has a steel edge with an optional double rubber strip. The beam is a sectional construction, with similar benefits of a tubular beam in manoeuvring terms, and the design is aimed at reducing trapping areas. The blade is bolted to the beam so the pusher can be taken apart for transport or storage. The headstock can be fitted with any hitch system at point of order.

JCB

A 3m or 4m pusher with a 2.44m-wide blade. The construction is a carriage width tubular frame and is approved for use with JCB loaders. Naturally, the JCB headstock options are catered for, but Manitou compatibility is also on the options list. JCB's pusher is fabricated with an angled headstock frame so the pusher is angled upwards with the headstock in a vertical position. The smaller pushers are probably best suited to machines with long telescopic reach, where you only need a bit extra to utilise the store well. **FMJ**

JCB





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The future starts now

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We knew it was going to happen eventually. And yet the AgXeed Agbot, the first ever machine doing the work without us, cultivated a field so convincingly we could hardly believe it

Quite a few tractor concepts have been presented over the years. There were two kinds: one-off helpers for special crops or big visions for a distant future. But when the Agbot is at work that distant future is suddenly here now. Some large-scale crop farmers who were around during the demo were just as impressed as we were.

AgXeed is a start-up from the Netherlands, founded in 2018. There are currently eight people in the core team, mostly working on R&D. The Agbot is only part of their work and in a way an end to a means. The Dutch want to come up with an autonomous, all-in-one package, eventually supporting farmers with their ever-growing economic, ecological and even social challenges. The answer to all of them is more autonomy, says AgXeed.

The Agbot, which first worked some fields only two years after the company was founded, is only the first application of that autonomy. It is not aimed at ousting the tractor as

we know it. The Dutch believe tractors and robots will coexist in peace, in a mix of autonomous and human-driven machines working a field together.

Crawler with teeth

This first real-life incarnation of the Agbot comes with a 4.1-litre four-cylinder Deutz engine. It generates a maximum of 156hp and 610Nm of torque. The engine delivers its power to a generator, which in turn distributes electricity to a number of consumers, most notably the two tracks. They will accelerate the Agbot via planetary gears up to 13.5kph (8.4mph). That's not particularly quick but a good speed for most autonomous applications.

You can opt for an electric PTO delivering up to 100kW. Or you plug electrically-driven implements into the 100kW sockets. Because the Deutz engine came with hydraulic outlets as standard, AgXeed uses them in the Agbot as well. The pump delivers 85 litres per minute at 180bar, supplying four proportional double-acting valves, optionally load-sensing. The front linkage will lift up to three tonnes, the rear linkage up to eight.

The Agbot is built in modules so you can choose between a wide range of track and overall machine

AgXeed has taken just three years to go from first sketch to working prototype

The Dutch believe tractors and robots will coexist in peace



widths. The prototype comes with almost original sugar beet harvester tracks by Zuidberg, which are too large and heavy for the six-tonne Agbot. But, this being the only prototype to date, AgXeed did not want to invest in custom built components just yet.

Have you wondered why this futuristic robot comes with a diesel-electric drivetrain rather than battery power? So have we, and the Dutch had a quick answer: the battery

Below: Zuidberg track units are considered too big and heavy for the production model but as an off-the-shelf item they've made development of this prototype quicker and more affordable

alone would weigh six tonnes. They are open to alternative power sources such as hydrogen, but currently maintain their focus on ready availability.

Easy set-up

While you can't just tell your Agbot which field to work, setting it up is surprisingly straightforward. You use a browser-based platform that somewhat resembles a field map with an additional fleet management plug-in.

To be fair, there are some more tedious one-off tasks to complete before the first robot mission, in particular measuring both your fields and your implements rather precisely. We got to work with the Kockerling Rebell disc harrow with a working width of 4.2m. We had to feed the system with its exact length, width, turning circle etc. But you only have to do this once. Next time you select the harrow for the Agbot it entirely relies on the numbers you have already dialled in. You configure the front linkage in the same way, choosing a previously registered implement from your fleet.

You then choose the field to work on and your start and end points for that. Based on those, you set the direction of the A-B lines. Then the robot wants to have more orders such as working speed and depths.

Once you're done feeding in data the system will provide you with the Agbot's planned route. The algorithm minimises the route for distance and avoids overlaps. The robot generally reaches the endpoint without having to do an 'empty leg' across the headland.

One thing we particularly liked is the estimate of the required time. It makes planning your tasks so much easier. If you don't agree with the algorithm about the route, you can change it very simply by choosing a different A-B line. As of now, the Agbot cannot choose its own optimal direction of work in order to minimise the required time. But that's only a matter of a future software update.

Sit back and relax

Finally, we hooked up the disc harrow and brought the robot to the start point. Kick back, relax and watch it work



Left: Rear end is much the same as a normal tractor, with a three-point linkage and hydraulic spools

Above inset: The front linkage has a capacity of 3t but is currently used mostly for holding a weight block



You guide the robot as you would a model car, just with extra buttons



- but that's only half true. There is a remote control for manual transport that reminded us of a game controller. You guide the robot as you would a model car, just with extra buttons for hydraulics and linkages. Once in action, you can readjust your previous settings for speed and depth via the remote.

Getting the robot from the farm next to the field currently involves a flatbed lorry. Autonomous road travel is obviously not an option (yet), but AgXeed are working on a solution with plug-in wheels that might allow you to pull the robot like a trailer - even on roads.

One of the machine's biggest disadvantages is one of its safety features. Should the sensors all round the machine detect an obstacle it keeps slowing down until the object walks (or lollops) away. However, if it doesn't before the robot has entirely stopped you have to physically put it back to work. Releasing the brakes from your office won't do. Hopefully, the software will soon be able to distinguish real danger from animals passing by. And if it doesn't, high-resolution cameras may soon enable the farmer to make that decision from further away.

More to come

While the Agbot left us quite impressed, it is only a small hint of what is to come. AgXeed so far has concentrated on easy-to-programme tasks such as tillage, seeding grain or corn, mulching or hoeing.

A next step could be pulling a transfer trailer to move grain between a moving combine and roadside trailers. AgXeed also sees particular potential in the robot communicating with its implements, such as having a baler with Tractor Implement Management (TIM) control the Agbot.

What AgXeed has achieved in just three years is quite impressive. It presented a robot that got its job done correctly and safely. Crop farmers present were fascinated by the machine. We particularly like the idea of using the robot with any implement you already have.

To really get the robots going, it would now be up to governments to make them road legal and for manufacturers of implements to make them 'talk' to the Agbot.

Right: The simple remote control features buttons for direction of travel and hydraulics with a screen for key info



Right: Setting up the Agbot is easy. Once you've paired an implement the settings are remembered for each subsequent use, whether that's the next day or in a year's time

Below right: Claas front weight block balances the 6t Agbot when the harrow is lifted on the linkage



TECH SPECS
AgXeed Agbot Engine
 Deutz 4.1-litre, 4-cyl diesel
Power 156hp
Torque 610Nm
Top speed 13.5kph
Tracks Zuidberg
Weight 6t
PTO Electric, 100kW
Hydraulics 85L/min, 4 valves
Front linkage 3t
Rear linkage 8t

FMJ



Main image: Paired with a Kockerling Rebell cultivator, the Agbot travelled around the field in a pre-determined route without any intervention

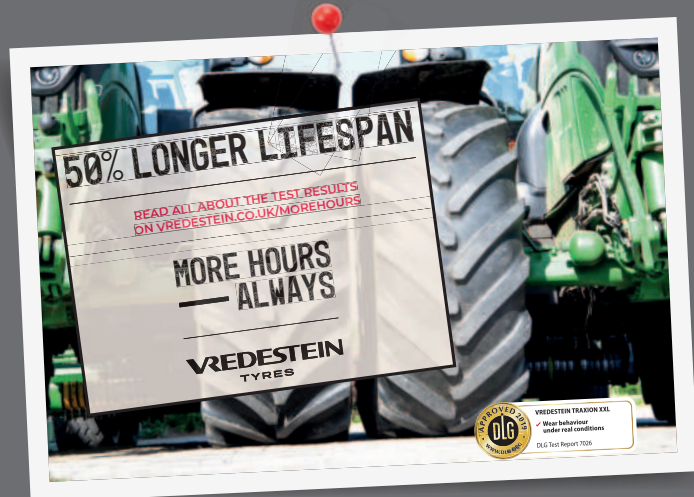


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Below: LAMMA moved out of Lincolnshire and spent 19 years at Newark before moving to Peterborough
Image: Michael Trolove

Below: LAMMA grew from local manufacturers to global manufacturers such as MF, seen here in 2015
Image: AGCO/MF



LAMMA celebrates 40 years

This year marks 40 years since the first LAMMA show at the Lincolnshire Showground. *FMJ* looks back on the event to find out how it's changed

WORDS **SIMON HENLEY** IMAGES **FMJ** (UNLESS STATED OTHERWISE)

LAMMA is the UK's leading agricultural machinery and equipment event and this year the show celebrates its 40th anniversary. The Lincolnshire Agricultural Machinery Manufacturers Association event, now known by its acronym, was originally established as a show for Lincolnshire-based agricultural equipment manufacturers, which could not afford to exhibit on the national circuit.

The first show was held in January 1982 at the Lincolnshire Showground. Despite poor weather, it was a surprising success with some 50 exhibitors and 2500 visitors. So, having made a small profit, the organisers decided to form a committee.

The men credited for establishing the LAMMA show are Roland Marshall, Bob Barber, Ray Larrington and Geoff Bottom. Each man represented a significant force within the Lincolnshire agricultural community and their mantra was to establish an affordable annual local show, where businesses could showcase their products to local farmers and contractors.

From day one, the show was developed as a cheap day out for farmers and their families. It offered free parking and free entry, but no alcohol. And these rules still apply today.



Above: The NEC provided a venue for LAMMA organisers to pursue a reputation like SIMA and Agritechnica

At Newark the show had become an event for exhibitors outside of Lincolnshire

Above right: British brand JCB has been a visitor favourite at LAMMA for years, always boasting an extensive display

Following the demise of the Royal Smithfield Show in 2004, LAMMA became a go-to venue for many major manufacturers, outgrowing the Lincolnshire Showground and moving to Newark Showground in 1997.

'Nationwide acclaim'

"As the show got bigger, it attracted more media attention," remembers former LAMMA commercial director Cliff Preston. "This promoted the show to readers of the farming press on a wider scale. At Newark the show had become an event for exhibitors outside of Lincolnshire. From 2005 onwards, it would achieve nationwide acclaim."

In 2012 the LAMMA event was sold to Briefing Media Ltd. Under its management LAMMA would now attract more exhibitors and more visitors than ever before. By 2015, more than 40,000 people and some 900 exhibitors attended the event.

Traffic congestion issues at Newark and a lack of local amenities to cope with the volume of people prompted Briefing Media to move LAMMA to the East of England Showground in 2016. It would remain at the Peterborough site

until the decision was made to host the event indoors at the NEC in Birmingham in 2019.

Today, as LAMMA celebrates its 40th anniversary, the show is once again under new ownership. Following the 2021 purchase of the event by AgriConnect Ltd the show continues to grow and evolve. Covid-19 may have caused unwanted disruption to the show's schedule, however the 2022 edition remains set to be the best yet. **FMJ**

Below: The cold, wet, windy shows were a distant memory when LAMMA went inside at the NEC in Birmingham



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BACK TO THE ROOTS

Shropshire contractor CR Bowen has come full circle, from a family farm, through contracting, manufacturer demonstration drivers and back to building a progressive farming business. *FMJ* caught up with them

WORDS AND IMAGES **KEN TOPHAM**

Going back three generations, the Bowen family farm would have been a traditional mid-Shropshire enterprise with some milk cows and a few acres of crops. One son, Colin Bowen, had a great interest in engineering and mechanised farming, which needed more input than the family farm could offer. After working in agriculture around home, Colin studied engineering, which led him to Rabe tillage equipment as a demonstration driver through Deutz-Fahr importer Watveare.

The SDF amalgamation led to Watveare's demise and, with a young family to feed, Colin was placed with the Benson Group, which was building the last County tractors while he cemented his own plans.

Ford to Fendt

In 1993 Colin started a contracting business with a fleet of Ford 40-Series tractors that evolved in to a Deutz Agtron and Same-based line-up. Specialising in big baling with Massey Ferguson balers, Colin scaled things back in the early 2000s to a manageable level for himself. His passion for ploughing

flourished in 2009, winning the British reversible class three years on the trot and competing at world level.

Steve Bowen, Colin's eldest son, followed a similar path to his dad. He worked with Pottinger as a demonstrator after college and lent a hand with product support. After a stint touring the UK with Pottinger, he decided to return home and help Colin with contracting. It had kicked up a gear when one customer decided to go down the wagon silage avenue, which presented the opportunity to scale up the Bowen operation. With enough work to justify

"We needed to add organic matter so the logical step was to produce manure ourselves"

Fendt 700s have proved winning all-round machines in the rolling hills of Shropshire



Right: A Valtra N121 is used in the fencing side of the business, but is useful if the pressure is on during harvest

Far right: Laumetris trailers are newcomers in the UK but the Lithuanian brand has gone down well with the Bowens

▶ one wagon, things soon escalated and a second wagon arrived.

Dramatic change

The business has grown and changed dramatically over the last six years, as the family took on the tenancy of a farm and Colin's father's land was farmed as part of the enterprise. Contracting is still a large part of the workload, which the family team share. Steve, like his dad, is a machinery man, while brother Alan favours livestock and is the farm's shepherd, with a sheep-shearing round to factor in as well. Nearly 300 sheep are utilised in weed control and break-crop management, while Alan also looks after the spraying on the farm. Colin's wife Jenny is the backstop in the business, stepping in to help out when needed, and daughter Susie helps with the books and documentation work.

The Bowens are currently split 50/50 between contracting and farming, and have around 500 acres of cereals, 50-60 acres of grass, sheep and 1000 pigs to look after. Labour is a challenge, as for everyone else, but the farming side of the enterprise has helped with that issue, being able to keep someone



"The Fendt 700s work really well for us, they're a good size and have plenty of power"

Above: Though a 120x90 baler was hired in there is still demand for conventional bales, hay in particular. This John Deere 456A is a solid baler

Above right: Steve Bowen (left) and Colin have both been machinery demonstrators in the past

busy when contracting has its quiet spells. Farming has escalated somewhat from taking on a farm and growing cereals. Steve Bowen is working towards a zero-till cereals model, but after they took on the farm it became obvious the investment in soil health had been very low.

Addressing the arable land around the farm has been tackled by a serious hedge-thinning and tree-

pruning campaign, while manure has been important in taking tired pastures into arable production. "We knew we needed to add some good organic matter to the land when we took the farm out of grass, but didn't want to import a black grass issue," explains Steve.

"The logical step was to produce manure ourselves, so we built a pig unit, which holds 1000 pigs on a B&B arrangement. We are self-sufficient



CR Bowen Contractors

Location

Church Stretton, Shropshire

Business type

Contracting and farming

Core fleet

- 2015 Fendt 720
- 2016 Fendt 724
- 2017 Fendt 720
- 2019 Fendt 720
- 2008 Valtra N121
- 1997 New Holland 8340
- 1994 New Holland 6640
- 1996 Massey Ferguson 38 combine harvester
- 2011 Pottinger Torro 5100
- 2018 Pottinger Torro 6010

When the pressure is on the classics roll. Steve has a mint New Holland 8340, an appreciating classic and economical runner

with straw and hired a Fendt 1290 baler for the 2020 harvest, which was another risk point for black grass. The baler turned out to be a good decision: due to the catchy harvest, we were able to keep up with the work and not have straw laying out for days.”

The cereals operation is still plough-based, but Steve aims to introduce a low disturbance system once he feels the fields are in shape, not only from a soil health

perspective but also after extensive drainage and getting hedges and trees back to where they should be. The yard has also undergone some infrastructure changes, taking an outdated stock farm and adding a 1000t grain store to make it work for arable operations.

Blue and green

The machinery line-up at the Bowens is split into a classic-era fleet and



Main image: Turning over some old grass while the customer cracked on with the fertiliser application

Above: One of the classics, this 6640 is more than capable for chemical application, with GPS for accuracy



“From a power and fuel perspective, slatted boards definitely make a difference”

► modern equipment with a Ford/New Holland undercurrent. Colin's dad ran Fords, so naturally Colin was influenced down the blue route and some 40-Series Fords are still in the fleet. But, as Steve says, “it's alright having older gear, using it in our own farming, but when you have a breakdown is when problems arise. If we have a Fendt breakdown we call Pughs and they get it sorted. You can't get that kind of back-up with older machines.”

Green and red tractors came to the Bowen business when they bought their first forage wagon in 2011 and a Fendt 718 was hired in. “We haven't looked back,” says Steve. “The 700 Fendts work really well for us – they're a good size and have plenty of power.” The tractors are supplied by RVW Pugh and, with the exception of the 2019 720, are on long-term hire, which gives the flexibility of being able to adjust the fleet as each year goes. “We may buy another 720, but at the moment it suits us to hire the modern tractors, plus the back-up is good with hire tractors.”

A Finn found its way into the Bowen fleet when a Valtra N121 was bought for loader and fencing duties,



Above: After demonstrating with Rabe, Colin was sold on the idea of slatted mouldboards and has been running them since the early 1990s

stepping in for raking if needed.

Steve's own tractor also works at peak times. It's a very late New Holland 8340 on an R-plate and handles 'light' duties. However, Steve is now between the rock and hard place with his appreciating classic: keep clocking hours or park it? However, for tedding grass and similar jobs it sips fuel compared to newer machines.

Pottinger equipment features heavily in the fleet. Steve worked with them for four years and his in-depth product knowledge means it is an understandable choice. Steve and Colin are wagon silage crusaders, as fodder quality and land management

are considered unquestionably better than a self-propelled forager outfit. Reducing compaction and field passes are two claimed benefits, although Steve does admit forage harvesters have a place for maize and whole-crop.

Colin normally handles the buckrake, as wagon silage needs a different approach to achieve a well-consolidated clamp. He usually works with the Fendt 724 and a modest eight-foot buckrake. Both wagons are from Pottinger's Torro range, the Combiline model being the more recent. Steve reckons they'll replace the 5100 with a Jumbo in the next year. An HIT 8.91 tedder from



A well-practised operation: this customer had two clamps running with two buckrakes, so the pressure was on the wagons



the same stable was working in some high-level stewardship grassland when we saw it. It's effectively wild grassland that gets baled up and about 10 per cent is used to reseed the field.

Classic combine

When it comes to harvesting cereals the Bowens opted for a classic-era combine in the form of a Massey Ferguson 38, a simple and solid

performer. "We have done quite a bit of work to get the combine up to a good standard, but we have been looking at the Claas Montanas," explains Steve. "There are a few second-hand ones around and it would suit our farm, but we'll get another couple of years done with the 38. We've invested quite a lot in grain storage in the last couple of years and are taking it step by step."

Above left: The Combilene wagon has shone in the fleet, with a noticeable improvement over the 5100 in cutting quality

Above: The mix of customers is wide. This job was turning high-level stewardship hay, of which roughly ten per cent was spread back on the land

There isn't much kit that doesn't bear the Pottinger stamp at Bowens, so the Kuhn 153 Varimaster plough must have passed muster when tested. The Bowens have been running slatted board ploughs since Colin was with Rabe, and on the Pottinger they work well for the medium soil around the farm, with economical wear.

"From a power and fuel perspective, slatted boards definitely make a difference," says Steve, who has also ploughed competitively at UK level. "We've only ever changed the two slats next to the share, never the equivalent of a whole mouldboard, so there is a saving in wearing steel. We've rebuilt the headstock as a precaution, but it's a good plough," he adds, conceding that the plough will still be necessary going forward despite setting his sights on a zero-till system.

Diversifying from a contracting business and adding commercial farming has provided a rollercoaster ride for the Bowen family over the last few years. As a fresh and willing next generation looks for progressive methods to take the business forward, mixed with some traditional work pride and quality, the bumps of growth are getting smoother and allowing better visibility for the future.

FMJ



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"Larger farms surrounding us were successfully using Vaderstad Rapid drills"



MACHINES
CASE IH MAGNUM 310 &
VADERSTAD RAPID 600S

Next size up

The Wardle family swapped a Case IH Maxxum MX170 and 4m Vaderstad Rapid drill for a larger Magnum 310 and 6m Rapid. *FMJ* went to see how the upgrade has worked out

WORDS AND IMAGES DAVID LALEY



Above: Tim Wardle bought this impressive 2009 Case IH Magnum 310 last year to pull the 6m Vaderstad Rapid A 600S

Left: The depth of the System Disc and press wheel parallel linkage is set using a series of hydraulic rams

The Wardle family love spending time operating an impressive fleet of high-horsepower tractors on their 400-acre mixed farm situated above Garrowby Hill on the highest point of the Yorkshire Wolds. High-power Case IH tractors have formed the backbone of the fleet of Tim, his wife Caroline and their daughter Kelly for more than 20 years. When the Wardles were last carrying out contract work they relied on a succession of Case IH Magnums including a 7140, 7220 Pro and an MX200 to complete all of their ploughing, heavy cultivation work and drilling.

The Wardles' main drilling tractor had been a Case IH Maxxum MX170 matched to a 4m Vaderstad Rapid 400

F to establish crops into a seedbed created by a 3m mounted Terra-Tech cultivator and a 6.6m Knight Triple Press. However, prior to last autumn, Tim decided to refine and overhaul his crop establishment system to improve efficiency and make the most of shorter weather windows, enabling him to complete some contract oilseed-rape drilling too.

Upgraded fleet

The mounted Terra-Tech cultivator was replaced with a bespoke trailed 3.5m version designed specifically for use with a Case IH Steiger 9370, while the MX170 and 4m Vaderstad Rapid made way for a 2009 Case IH Magnum 310 and a 2006 Vaderstad Rapid A 600S.



Profile

South Wold Farm
Machines 2009 Case IH Magnum 310 & 2006 Vaderstad Rapid A 600S
Purchased 2020
Used for Two seasons
Location York, North Yorkshire
Operator Tim Wardle

Left: A 15-year-old 6m Vaderstad Rapid has improved efficiency and reduced costs for Tim Wardle

RUNNINGREPORT

CASE IH MAGNUM 310 & VADERSTAD RAPID 600S

Tech specs

2009 Case IH Magnum 310

Hours 4800

Engine 8.7-litre, six-cylinder, turbocharged

Power 310hp

Transmission

19-speed powershift

Rear linkage

Category III, 7.2t

Wheelbase 3.05m

Weight 13t

Fuel tank 678 litres

Tyres Michelin

Mach-X-Bib

800mm

2006 Vaderstad Rapid A 600 S

Width 6m

Transport width 3m

Transport height 3.1m

Cultivation system

Disc and levelling board

Coulters 48 single

disc, 41cm

diameter

Coulter pressure 115kg

Seed channel width

12.5cm

Packer roll

24 x 740mm

staggered

treaded tyres

Metering system

Pneumatic Fenix

twin metering

system

Seed hopper

3000 litres

Power requirement

240hp



Left: A pair of pneumatic Fenix seed metering units accurately distribute seed to the 48 coulters

Right: The Rapid comes with a decent set of access steps and platform for filling the seed hopper



Left: Hydraulic connections are fed through a series of hooks mounted on a stanchion to keep things tidy

Below: Up front, Vaderstad's System Disc comprises two rows of angled and serrated discs to chop and mix surface trash



Below: Tim Wardle's 2009 Magnum 310 and 2006 Vaderstad Rapid A 600S have performed faultlessly since arriving last July





Right inset: Control station is used to monitor performance and alter seed rates on the move

► “We moved away from ploughing in 2013 when we needed to improve our soil structure to maximise the nutritional value of the pig slurry we were applying to our clay loam soils filled with chalk flint,” says Tim. “By using a heavy tractor and tanker to apply the slurry followed by a plough, power harrow and combination drill we unintentionally created a hard pan, which negated the benefits of spreading the slurry in the first place.”

New system

Keen to address this problem to improve crop yields and reduce any unnecessary strain on his machinery fleet, Tim moved away from the plough and combination drill. Instead, he opted for a low-till system centred round a wider disc drill in the shape of Vaderstad’s popular Rapid equipped with single disc coulters.

“Many of the larger farms surrounding us were successfully using Vaderstad Rapid drills to establish their crops quickly and efficiently, so we thought a second-hand 4m version would work well,” says Tim, who sourced a clean 400F model from 2003, ultimately run behind the Case IH Maxxum MX170 to establish winter wheat and winter and spring barley that are grown in rotation with potatoes.



Above: Tim prefers the staggered press wheels on his 6m Rapid compared to the straight-line packer roll on the previous Rapid 400F

“I looked for a Rapid with the staggered packer roll fitted with treaded tyres”

“The four-metre Rapid worked very well and was exceptionally fast and reliable, but on occasions you still needed to work and consolidate the surface a little more with the Knight Triple press to create a finer tilth for the Rapid to perform at its best,” says Tim. “The moment the weather turned damp you were better off leaving the Rapid in the shed too.”

Despite these limitations Tim says the combination of the Terra-Tech cultivator, Knight Triple press and Vaderstad drill enabled him to improve his soil structure, leading to enhanced crop yields. Moving to a low-till crop establishment system also freed up more time for him, Caroline and Kelly to focus on looking after their stock, which at present consists of 1000 beef cattle and 100 sheep.

“While it’s great that we’re able to indulge in our interest and passion for high-power tractors on our farm,

they’re in no way an extravagance and each plays a vital role in enabling us to complete our land work in the most efficient way so we can spend more time rearing our stock,” he says.

This was another reason why he opted to swap the Maxxum and 4m Vaderstad Rapid for the larger Magnum 310 and 6m Rapid A 600S. The opportunity to carry out contract oilseed rape drilling across 150 acres of local land was another deciding factor for the upgrade.

“I also wanted to run a more modern Vaderstad Rapid fitted with the System Disc twin discs in front of the coulters to cut through surface trash better and leave a more uniform seedbed for the coulters to perform in,” he explains. “The old 400F was equipped with tines and while they cleared an adequate path for the coulters they didn’t leave the most consistent tilth, nor was the smooth rubber-tyre packer roll the best at leaving a properly consolidated finish. This is also why I looked for a Rapid with the staggered packer roll fitted with treaded tyres.”

Exceeding expectations

Since purchasing the drill last Autumn Tim says his Vaderstad Rapid A 600S has exceeded expectations yoked to the Magnum. “For a 15-year-old drill it performs very well and other than replacing any necessary wearing parts in readiness for next spring it’s

cost little to run. We’ve also found that our new trailed Terra-Tech cultivator leaves a suitable seedbed in most of our fields to go straight into with the Rapid without needing to use the Triple Press, which has reduced our running costs further too. I’m sure this is down to the bespoke design of the Terra-Tech cultivator and the discs that precede the coulters on the Rapid.”

Up front Tim’s 2006 Rapid A 600S is fitted with Vaderstad’s System Disc for chopping up surface trash and creating the optimum seedbed for the single disc coulters to penetrate and accurately place seed. The System Disc comprises a set of wheel mark eradicators followed by two rows of angled, serrated and rubber-sprung discs measuring 41cm in diameter. The discs can be hydraulically adjusted from the tractor cab. A levelling board situated behind the discs then consolidates the seed bed

RUNNINGREPORT

CASE IH MAGNUM 310 & VADERSTAD RAPID 600S

Right: A finishing harrow does an excellent job of covering the 12.5cm-wide seed channels following the press wheels

Below: Despite the high wearing properties of the Wardles' flint-filled clay loam soil, the Rapid's coulters system is great for establishing crops



in readiness for the coulters to create the seed channel.

Vaderstad's Rapid coulters system relies on the press wheels to actively control the depth of the disc coulters from the parallel linkage they're attached to. The linkage is also sprung with soft tubular rubber bushes providing excellent resistance to stones. One press wheel controls the depth of two discs. On Tim's 6m version there are 48 disc coulters manufactured from hardened V-55 steel that create a 12.5cm slot to place all types of seed.

The disc coulters are equipped with multi-sealed bearings that require little greasing to reduce maintenance time and improve their longevity. The position and height of the coulters can also be manually adjusted to match the height of the seed tubes as the discs progressively

Above: The Magnum 310 is surprisingly manoeuvrable and has power to spare pulling this 6m Vaderstad Rapid

Below inset: Prior to the Rapid A 600S, the Wardles ran this Rapid 400F, seen here at work in 2018

► wear. Up to 115kg of coulters pressure can be applied.

The packer roll comprises 24 74cm-diameter treaded tyres staggered across two axles. The rear-mounted set of wheels operates 19cm behind the front row.

This creates space for trash and surface material to flow through them.

The staggered packer roll also helps prevent blockages in tougher soils or when conditions have become damp. This also means there's less draught requirement in testing conditions.

To reduce soil ridging up between each pass, side boards are fitted along each wing of the drill. They can be adjusted vertically and laterally depending on the amount of surface trash. A following harrow equipped with 12mm-diameter curved tines covers the seed channels and prevents surface crusting in challenging conditions. Tramlines are created by a set of hydraulically operated pre-emergence markers.

The Rapid A 600S is equipped with a 3000-litre seed hopper plus a decent sized set of steps and access platform situated on the front left of the hopper to aid safe filling. A pair of hydraulic Fenix seed metering units are located inside the hopper providing the Rapid A 600S with half-width shut-off as standard, while a cell wheel provides a continuous flow of

seed. A hydraulically powered fan delivers a consistent flow of air to distribute different seed types to the coulters. Seed rates can be varied on the move using an in-cab control station that receives information from a soil radar unit measuring drill speed.

This information is then sent to the metering unit's hydraulic motor to alter the seed rate.

"The entire outfit has vastly improved our crop establishment system"

Magnificent Magnum

Tim is also full of praise for the performance of his 310hp Case IH Magnum 310 he uses to pull the six-metre drill. "It's now clocked 4800 hours and easily pulls the Rapid with power to spare, even on our steepest, most undulating fields," he notes. "The Magnum's cab is a very comfortable place to spend a day in; the powershift transmission is smooth and for a big tractor it's surprisingly manoeuvrable. I've drilled 450 acres with it trouble-free this season and hope to complete more next year.

"While we're not running the tractor or drill with GPS at the moment, the entire outfit has vastly improved our crop establishment system and enabled us to return to contracting too. If we encounter no reliability issues with either the

Magnum tractor or Vaderstad I can see them being an integral part of our fleet for many years to come." **EMJ**



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"Compared to bolt-on points they are easy, you could probably change a set in 10 minutes"

MACHINE
KVERNELAND 150B

The draw of four

The Kverneland 150B is not a revolutionary iteration of the plough, as four-furrow models are seemingly a thing of the past, but for one farmer it hits the spot

WORDS AND IMAGES KEN TOPHAM



Profile

Dan Jackson

Machine
Kverneland 150B

Purchased 2020

Used for One year

Location Arley,
Cheshire

Operator
Dan Jackson

The UK seems to have undergone a horsepower race over the last decade. As tractor powers skyrocket, implements have had to keep up. But some farmers have resisted the urge and Dan Jackson is one of those. Farming in central Cheshire on the Arley Estate, the land is a clay loam and grows cereals and grass very well - when treated correctly. Dan's enterprise is mixed between sheep, cereals and contracting. His yearly ploughing will be 100 acres, rotating grass, barley, oats and wheat in a mix of winter and spring cropping cycles.

The choice to update his plough was made towards the end of 2020 when local dealer Cheshire Farm Machinery

had an ex-demonstration unit for sale. The old Dowdeswell DP8a was moved on and Dan hasn't looked back. For a small (by modern standards) plough, the 150B has the features and adjustability smaller farms need without the complexity and weight of the all-singing and dancing hydraulically operated larger ploughs.

Easy adjustment

The 150B is an in-furrow only plough that can work from a 12 to 18in manually adjusted furrow width. An extra furrow could be added, maxing out the 150mm beam. Skimmers are easy to adjust on a detent leg, which has fore and aft adjustment for varying trash levels. ▶



Top: Once things dried up in spring, Dan was able to get on with cultivating this 11-year grass lay

Above left: A 2008 Deutz-Fahr K120 is an ideal partner for the 150B

Left: Plough on point, the conditions were good and doing a tidy job was effortless, even in an old grass lay

Tech specs

Kverneland 150B

Bodies No 28

Points Knock-off/on

Max power 150hp

Furrow options 12-18in, manual adjustment

Right: The soil was still quite moist and the furrows were lining up nicely at 8-9in depth and 4mph

Below: The knock-on/off points are quick and easy to change. Dan reckons 10 minutes to change a full set

Bottom: The headstock is rated to 150hp, ideal for the K120. The main beam section is 150mm square, hence the plough's designation

"We prefer lighter kit and like to work when the land is ready"



► The legs are protected by shear bolts and feature the knock-on and off point system. Dan has the general-purpose 28 bodies, which for his cereal and grassland operations are ideal. The depth wheel is a fully mechanical system, with no need for a transport wheel on a four-furrow, but the depth wheel can be turned for transport. The only negative Dan has on the plough is the wheel position. "It's very picky, but

when you want to get close to a fence the wheel sticks out at the back by a foot, so you can't get as tight backing up. But it's a minor niggle, overall I'm really pleased with it."

Driven by Deutz

Working on 16in furrows Dan was ploughing for some spring barley when we caught up with him behind the wheel of the farm's 2008 Deutz

K120, which is booted with 18.4 rear tyres. There is a fresh Deutz 6160-4 on the farm but it has 650mm tyres, ideal for drilling with a combination unit. Plus, the plough is rated to 150hp so the K120 is ideal for the job. Dan would rather the tractor give up before the plough.

Dan's usual working method is to use a McConnel Shakaerator on the tramlines in his cereals, and in dry

Below right: Tools are kept on the headstock, along with spare shear bolts





Top: A spring-loaded jack leg means the stand should stay in work position until you need it

Above: The sod was being buried well and Dan praises how easy it is to set the skimmers on the 150B

Top left: The 28 bodies are designed for wide tyres and depths from 6-12in. The 18.4 tyres fit perfectly ploughing at 16in wide

Above left: Furrow width and offset adjusters are easy to access

Far left: The drift has two jobs - knocking the points off and also refitting them. The indentation on the side is used to prevent direct contact with a hammer

Left: The depth wheel is a fully mechanical affair, which can be used for transport if you have a distance to go

Far left: Dan praises the ease of skimmer setting. The detent straight leg means the skimmers can't twist and are easy to set evenly

years the whole field will be loosened. He then ploughs and follows on with a three-metre Kuhn harrow with a Nordsden gravity box drill with Suffolk coulters. "We have a Lemken furrow press that was modified for the front linkage," he explains. "It works really well on our land. We have to time ploughing and drilling right as the clay loam we have can turn into a mess if it's ploughed

and gets wet or too dry, but our outfit works really well."

Set-up for Dan was pretty straightforward, as the plough had been demonstrated in 2020, so it was just a case of fine-tuning. "The plough is easy to adjust; the skimmers are quick and easy, and the detents make it easy to get the depth consistent across the plough," he explains. During our visit the finish was good

coming out of grass that had been down for 11 years and grazed by sheep. There weren't excessive amounts of trash but the sod was buried nicely.

Quick change

The points are a bolt-less arrangement, but they do require a special wedge drift, which is supplied with the plough. It's used for knocking the points off and also has an indentation for knocking the new point on so as not to cause hammer rash on the new wearing steel. It's a feature that Dan really likes. "Compared to bolt-on points they are easy; you could probably change a set in 10 minutes and do it in the field if you wanted," he says. "On the old plough it could take two hours if the bolts were worn and seized."

The 150B is not an output monster, ploughing at eight to nine inches and forward speed of 4mph, but Dan is more concerned with finish than speed. "We would contract if asked, but most people want land turned over quickly with five or six furrows. We prefer lighter kit and like to work when the land is ready rather than go when someone can fit us in."

The Jackson operation is not typical these days, as smaller farms tend to contract out their work. But being self-sufficient has its merits. Dan knows his land won't tolerate being mauled in the wrong conditions and to keep it productive takes care. The Kverneland plough has been a solid upgrade for the farm and maintenance times have been dramatically reduced.

FMJ

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 Charlie Frith has customised his Massey Ferguson 7719S to suit his needs during long stints at the controls

WORDS AND IMAGES **KEN TOPHAM**

RG., D.J. & P.J. Frith run a dairy farm and have branched out into contracting. Charlie Frith being in charge of the contracting side of the business. His 7719S arrived in June 2021 and has clocked almost 1000 hours since. The ex-demo Massey was supplied by RVW Pugh and is nicely specced with the Dyna VT transmission.

The 7719S has a nice cabin, even compared to the latest 8S tractors, so it's no hardship to spend time there. Charlie carries out a range of work on the home farm, as well as subbing out as a tractor and man for mowing and hauling silage and working with a local potato grower at harvest.

Practical upgrades

Charlie has invested most heavily at the back of the MF, fitting a set of AgriGuards linkage-mounted spray guards, not only for aesthetics but practicality. Charlie uses them predominantly for dump trailer work, but they also come in for slurry tanking, with a rubber lower half and pre-shaped plastic stock board at the top. They keep road spray down considerably and reduce damage to the front of trailed implements.

The almost obligatory train horns from CDC truck parts are fitted on the offside step. Charlie had RVW Pugh fit extra airline ports to the MF, one outside and one inside. Also inside the cab are subtle upgrades, including a Fold Agri storage box, which has two suction cups to the door.

Addressing a common 7700-Series complaint of rubbish speakers, Charlie has a pair of Pioneer TS-Rs, while his choice of CB radio is a President Barry AM/FM, which he rates really highly. Finishing off the cab interior is a Massey Ferguson floor mat, which Charlie intends to use for better weather, and as a template for creating his own more robust rubber winter mat.

Below: Charlie Frith subs out as a tractor and man for mowing, silage hauling and potato harvesting



Machine
2020 Massey
Ferguson 7719S

Operator
Charlie Frith

Location
Knutsford,
Cheshire

KEY UPGRADES

Massey Ferguson
floor mat £75,
rvwpugh.co.uk

Pioneer TS-R1350S 12cm 250W speakers £37.99,
dynamicsounds.co.uk

Fold Agri storage container, double suction £101,
foldagri.com

President Barry CB radio £89.95, radioworld.co.uk

CDC air horns £85, truckstuff.co.uk

AgriGuards rear mudguards £320, AgriGuards -
Universal mudguards for your tractor on
Facebook

RAM Mount with XGrip £75, ram-mount.co.uk

Custom name plate £32, WD Agriplates on Facebook

FMJ



Even without the subtle upgrades, the 7719S interior is still a very nice place to work





Cab up close

1 Interior upgrades are subtle but effective. As usual, storage is the biggest bugbear. This Fold Agri box helps Charlie stay organised.

2 AgriGuards mudguards keep trailed appliances clean and prevent stone damage on paintwork too.

3 Charlie uses an external air socket to power the Diesel Train Horn, which still offers the option to plug in

accessories for inflating tyres or cleaning.

4 President isn't a brand of CB we've encountered in a cab before, but Charlie's report is good, with plenty of range and little interference.

5 MF speakers have been criticised before, so Charlie found a solution in Pioneer's 13cm 250W replacement.

6 The last 7700s with Datatronic had the Fieldstar

5 monitor, which can be used for guidance and ISObus functions simultaneously.

7 Internal air socket is like the outside one, both of which were fitted at PDI by RVW Pugh, and has proved to be a very useful feature.

8 Charlie likes the second lever for buckraking duties, giving forward and reverse without letting go of anything.

9 The genuine MF mat is reasonably priced, but now Charlie has the template he will make a rubber version for winter.

10 The CB antenna is bolted into the cab frame and gives good results.

11 The Novotel receiver on the roof is very easy to remove for security.

12 A custom name plate from WD Agriplates goes well with the MF livery.



The road lights aren't stellar, but LED worklights are excellent in Charlie's opinion





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Michael Jorden

Use the rain to reduce water bills



Water is a primary input on farms - whether arable or livestock - but 86 per cent rely on mains supply and its cost continues to rise. Rainwater is free and farmers can harvest this valuable asset

Most people don't really know how much they pay each year for water. A majority of water bills are paid by direct debit and farms that are now metered find their costs have gone up because they pay for what they use - previously they were on a flat rate.

Farmers are great harvesters so why not consider rainwater harvesting? There are so many advantages: beside the fact the water costs nothing harvesting it offers a way to control flood risk by reducing run-off - both areas of government concern - and it is chemical-free so helps improve crop performance and reduce the rate of deterioration in machinery and drinkers.

Keep an eye out for grants and quiz your land agent. The Countryside Stewardship Water Catchment grant is still available but two new opportunities were launched in November - The Farming Investment Fund and the Sustainability and Technology Fund. They aim to help farmers diversify through efficiency. Water harvesting is therefore covered. And if you don't go for the grant option, don't forget there is 100 per cent tax relief available through the Enhanced Capital Allowance (ECA).

Research results from Lincoln University released at the end of the year suggest that chlorine in mains

Michael Jorden is a director of JRH Water Management, which specialises in the design, supply and installation of agricultural rainwater harvesting systems.

water reacts with glyphosate, reducing its efficacy. Less glyphosate is therefore required when mixed with the same volume of rainwater - as compared with mains water - to achieve the same level of performance.

There is also an efficiency saving as calcium in mains water leads to a build-up of lime scale in sprayers and troughs. Using rainwater means cleaner equipment, resulting in reduced maintenance and labour costs. Farmers' profits are not going to change; all sectors of the industry will

have to continue to force more out for less or the same.

Many perhaps do not realise there is a hierarchy when it comes to water supply. Human life is the primary concern. Next is commercial and industrial demand. Farming is at the bottom, so in the next four to five years, if there is no change in the way we manage water in this country, agricultural supplies will be the first to be rationed. Water scarcity could potentially happen in the UK. Most water companies will admit they are - most of the year - just a few months shy of a water ban. **FMJ**

Right: Rainwater harvesting generates a water supply by collecting rainwater, typically, from a roof, which is then stored in specialised water storage tanks



“If there is no change in the way we manage water agricultural supplies will be rationed”

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10 QUESTIONS WITH...



Simon Henley started operating farm equipment as a teenager, leading to a highly successful career as a machinery journalist

IMAGES SIMON HENLEY/TOM CRITCHELL

FMJ: What was the first tractor you operated?

Simon Henley: It was a 1965 McCormick-International B414, which belonged to a local chicken farmer who I used to work for at weekends. I was about 14 years old.

Below: The John Deere 3800 remains one of Simon's all-time favourites



Right: Simon Henley has been regularly driving this John Deere 7810 for the past 15 years



“Be prepared to listen to those who are prepared to teach you”

FMJ: What is your current tractor?

SH: I spend around six to eight weeks a year doing harvest work and drilling. I predominantly use a John Deere 7810 but this year I've spent some time on a Case IH Puma 175 CVX.

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

SH: I've probably driven or tested nearly every type of telehandler ever built. The one which sticks out in my mind to this day is the John Deere 3800 pivot-steer. They were damn good loaders.

FMJ: What's your best and worst day?

SH: The best day for me is that time of year when the sun comes out and farmers start mowing for first-cut silage. It's my favourite time of the year. The worst day, I was a student working on potato carting for a farmer in Nuneaton. I drove his International 674 out the yard

with the trailer, the steering broke and it tipped over on its side into a six-foot ditch. I'd been on the farm 10 minutes.

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

SH: I always have my phone and a bottle of water. If it's going to be a long day then add some sandwiches, a can of Red Bull and toilet paper.

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

SH: Grease gun, hammer, adjustable spanner, mole grips, a punch and some pliers. I also like to have cable ties, insulating tape, a tape measure and a sharp knife.

FMJ: What development in farming has transformed your job?

SH: I think GPS guidance technology. The accuracy and efficiency it has brought to farming all over the world has arguably revolutionised food production.

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

SH: I've always had a penchant for the mid-1990s Fendt Favorit 800-Series tractors. There aren't many in the UK, but I think they were one of the best Fendt tractor ranges ever produced.

FMJ: What's playing in the cab?

SH: Nothing. I hardly ever listen to the radio or music when I'm driving a tractor.

FMJ: What advice would you give young or aspiring operators?

SH: Work hard, learn by your mistakes, and be prepared to listen to those who are prepared to teach you.

FMJ

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LOW RANGE

The latest pick-up, commercial 4x4 and utility vehicle launches & updates

The Ranger will offer a choice of proven and durable diesel powertrains, including a powerful V6 turbo-diesel. Trim levels are expected to be Wildtrak (yellow), XLT (blue) and Sport (black)



Bigger, better Ford Ranger unveiled

Ford has revealed the new Ranger pick-up, due to go on sale in late 2022. It will also form the base for Volkswagen's new Amarok. Ford says it will be the toughest and most capable Ranger yet, with customer input following 5000 interviews. New bodywork follows Ford pick-up design cues, including C-clamp front lights and boxier dimensions that give an American look. Underneath is an upgraded ladder frame chassis based on the previous model, yet it has a 50mm longer wheelbase and 50mm wider track.

A highlight at this stage is the introduction of a 3.0-litre V6 - one of three turbo-diesel engines that will be available from launch. The Dagenham-built engine is already used in the Ford F-150 truck and offers more power and torque for towing and off-roading. Statistics for the V6 are yet to be revealed but expect it to trump the current 213hp twin-turbo 2.0-litre EcoBlue engine, which will remain alongside single-turbo versions. Hybrid and electric versions are expected down the line.

Gearbox options include a six-speed manual and automatic, plus a 10-speed automatic. As well as the electronic shift-on-the-fly four-wheel drive system, Ford will also introduce a full-time four-wheel drive system and six driving modes.

Tech and accessories

Inside is a wealth of on-board technology, which includes a new 10.1in portrait-orientated central touch-screen as standard, with the option to upgrade to 12in and a



Above: Order books for the Ranger will open in Europe in late 2022 for customer delivery in early 2023

digital instrument cluster. Infotainment is handled by the latest Ford Sync 4 system, with a FordPass Connect mobile Wi-Fi system standard for full compatibility with the FordPass smart phone app for remote-start, remote-lock and even the ability to turn on exterior lighting.

More than 150 accessories will be available at launch. Clever features include a step in the bodywork behind the rear wheels so you can reach into the load space without standing on the tyre, and



Above: The next-gen Ranger project was led by Ford's Product Development Center in Australia

a cargo management system that allows the load space to be divided to transport different items. An optional tailgate work surface features a built-in ruler, mobile device holder, cup holders and pencil holder, and every tailgate

comes with clamp pockets for securely holding materials for cutting.

A 400W power inverter is available to deliver AC power via an outlet in the load area. Zone Lighting allows you to turn on exterior lights for working at night, while a new 360-degree camera system aids parking and off-roading. We'll have a closer look at the new pick-ups soon.



Above inset: A 10.1in or 12in portrait touch-screen in the centre stack is loaded with Ford's latest SYNC 4 system



Left: The tailgate can double as a mobile workbench with an integrated ruler and clamp pockets. Note the steps behind the rear wheels



Under no pressure

FMJ went to Scotland to test what is arguably one of the most high-tech Ultra-Class Utility Terrain Vehicles in the market today. Here's how the Canadian-built amphibious Fat Truck fared

WORDS AND IMAGES DAVID WYLIE

In February 2019, with an initial investment of \$1.5 million, the Zeal Motor Inc headquartered in Québec, Canada, launched its Fat Truck Ultra-Class Utility Terrain Vehicle. While the shape of the North American truck may look very similar to the Russian Sherp we tested last year, underneath the skin the two are very different machines.

The Canadian-built Fat Truck entered the UK market via sole authorised dealer Off-Piste Agri Ltd, whose owner Harry Kester has a wealth of experience in the agri sector. He has also supplied PistenBully GreenTech

machines for silage clamping operations and environmental management of wetlands since 2013.

The Fat Truck 2.8C model on test (there is also a pick-up model, more on this later) can transport up to eight people (two up front, six in the rear), has a 1000kg payload and is amphibious, with ultra-low ground pressure performance from its fat low-pressure tyres. It also

has an ISO and ROPS-certified roll-over protective structure. While it is CE marked, Off-Piste Agri is not promoting it as road-legal in the UK.

However, with practice, farmers and operators will be able to move it from site to site via a limited distance on public roads. With that in mind, Off-Piste Agri is currently working with a trailer manufacturer



Fat Truck has gone to great lengths to make the machine as easy to operate as possible

Left: Harry Kester demonstrating the Fat Truck's ease of use with joystick steering and travel speed

Below: Access to the front driver and passenger seats is via a large front-facing door and access ladder

Left: The Fat Truck has amphibious abilities, making it ideal for travelling over wet areas

Above right: In front of the joystick is a central LCD screen displaying engine rpm, temperature, pressures and fuel level

Right: A Cat 2.2-litre diesel engine offers 67hp and meets both American and European EPA standards

to come up with a bespoke trailer design for quick and easy transportation further afield, although it will load quite comfortably on a beaver-tail farm trailer.

The Fat Truck is powered by a 2.2-litre, 67hp CAT Stage V diesel engine driving an automatic Danfoss hydrostatic transmission system. It has intuitive proportional joystick control and can be driven from either of the two front seats. Top speed is 25mph (40kph) and fuel burn is just seven litres of diesel per

hour on average, resulting in around 10 hours from the 70-litre fuel tank. It can be equipped with air conditioning, roof rack and ladder, exterior mirrors, Bluetooth radio with speakers, parking camera and a host of other options.

Fat Truck on test

Harry Kester and his training provider - Contour Training - demonstrated the Fat Truck at Cochno Farm & Research,

Clydebank, Glasgow, part of Glasgow University's veterinary school estate, which has a large area with steep hills and soft ground to provide a challenging training environment for off-road vehicles and track-type people carriers.

Access to the front driver and passenger seats is via a large front-facing door, which is easily opened with a powerful gas strut and neat drop-down three-rung access ladder that is stored within the tubular frame of the centre dashboard.

The simplistic beauty of operating the Fat Truck is its centrally mounted joystick control lever, which means if you're right-handed you sit in the offside front seat or vice versa for those left-handed. Control switches for the wipers, horn and lights and the rear-view camera are mounted on the offside front pillar. In front of the joystick is a central LCD screen displaying engine rpm, temperature, pressures

Above right inset: A high-speed capstan winch can be mounted on the Fat Truck, seen here with a utility company

Right: Steep and slippery grass sections on the training route couldn't halt the Fat Truck's progress

Left inset: Off-Piste Agri owner Harry Kester has a wealth of experience in the agri sector, supplying PistenBully GreenTech machines since 2013



Fat Truck operator training is provided by Contour Training at Cochno Farm & Research, Clydebank



Above left: The forward seating position and flat front give a good view of the terrain in front of the Fat Truck

Above: The Fat Truck, by comparison with a normal off-roader, is in the ultra-class four-wheel drive category

“Right from the start, our company has always been driven by a safety-first approach”

→ and fuel level. Four big push-button → controls provide access to the menu screens and scroll through driver preferences, such as quick tyre inflation, which uses an onboard compressor to go from zero to 4psi in just 17 seconds.

Fat Truck has gone to great lengths to make the machine as easy to operate as possible, offering four pre-set tyre pressures to cover ground conditions such as snow, mud, trail and water, all displayed on the LCD screen.

The joystick is a hands-on throttle and stick (HOTAS) system to operate the modern hydrostatic drive, steer and safely brake this ultimate off-roader. Simply moving the joystick left and right steers the vehicle, and the more you push forward the faster the vehicle will travel as it progresses through the eight forward and reverse gears. High and low ratios give 16 gears in total for the versatility to reach top speed or swim across water at 3mph. The parking brake is applied via a button on top of the joystick, plus a secondary fail-safe button on the centre console.

Visibility all-round through the large front

screen and side windows is good, aided by a rear-view camera fitted as standard. The vinyl front and rear seats are comfortable and easy to keep clean, with three-point safety belts throughout the vehicle and front head restraints.

Ride comfort comes from a pneumo-circulating suspension system, with huge, soft sidewall Fat Truck LGP 1640 x 640 x 610 tyres that can inflate between 0.5 and 4psi to produce a footprint of just 1.6psi at its maximum payload, which is five times less than a human footprint!

Safety first

Harry Kester comments, “Right from the start, our company has always been driven by a safety-first approach, from our first days offering PistenBully GreenTech machines for great stability on silage clamps. And I am proud to be the UK & Ireland dealer for Fat



Left inset: A rear-view camera is mounted on the offside front pillar

Truck, as we believe it's the safest, best quality built and modern ultra-class off-roader in the market today.

“Again, with safety in mind, I wanted to offer our customers the best possible

sales and service package for Fat Truck by partnering with Ian McGhie of Contour Training and our service partner, Mike Green, from Autoplant Ltd, for the amazing factory trained support we have enjoyed since we started out eight years ago.”

To truly see what the Fat Truck could do at the training grounds, the experienced hands of Mike Green from Autoplant Ltd and Ian McGhie of Contour Training took the controls, fording deep water tracks, climbing steep muddy hills up to 75% gradient and tackling slippery grass sections without any fuss or drama. The Fat Truck climbed the terrain easily without any loss



Top: A new pick-up version has a redesigned cab with a new front entry door and integrated step

Above: The pick-up version of the Fat Truck is known as the 2.8P and features an open load bay for cargo



Above: The Fat Truck offers unbelievable traction in the most challenging conditions

Left: Large rear door gives good access. The roof rack and ladder are optional extras

Right: The Fat Truck can transport up to eight people or up to 1000kg payload



TECH SPECS

Fat Truck

Engine Caterpillar 2.2-litre turbo-diesel, Stage V **Power** 67hp **Transmission** Hydrostatic, 8 speed, 2-range **Top speed** 25mph
Tyres Tubeless, extra-low pressure Fat Truck LGP 1640 x 640 x 610 **Height** 2.565m **Length** 3.72m **Width** 2.55m **Weight** 2243kg
Ground clearance 19.7in (500mm) **Payload** 2200lb (1000kg) **Occupant capacity** 8 (2 front, 6 rear) **Fuel tank** 70 litres
Towing capacity 1000kg **Max ascent/descent** 35deg/70% **Max side slope** 22deg/40% **Warranty** 1 year or 1000 hours

of traction and hardly left a mark on the ground thanks to its super-light footprint.

Pick-up in production

Zeal Motor Inc has also announced a new Fat Truck pick-up version, known as the 2.8P. The company says it was designed to answer the specific market need to transport material and tools to the job site. Utility industry customers asked for an amphibious vehicle to bring payload through harsh conditions with the occupants separated from the payload. As well as a payload of 2200lb (1000kg) and amphibious capabilities, the new pick-up model will offer options such as a high-speed capstan winch, vegetation control spraying unit, water tank, fire-fighting foam kit and small service crane.

This new pick-up is available in two versions: open cab or closed canopy.

Amine Khimjee, vice president of sales and marketing at Zeal Motor, says: "The pick-up version of the Fat Truck is a great addition to a fleet for all jobsites. Having a vehicle capable of travelling up to 25mph, or on water at 3mph, and climbing steep muddy hills up to 75% with all the safety requirements are advantages that only the Fat Truck can provide."

The new pick-up version has an all-new and redesigned cab with some additional performance advantages, such as reduced noise levels, a new front entry door with integrated steps and a front window that opens up to four inches and has better forward visibility. It also has a new joystick with improved drive software and a new control screen. Ground clearance has been increased from 19.7in to 21in and the fuel tank is increased to 80 litres.

The Fat Truck is in worldwide operation across a variety of commercial uses, from oil, gas and geological exploration, forestry, environmental control, transporting working crews to repair power lines, delivering goods to remote and hard-to-reach areas, along with search and rescue activities. It can also be used to evacuate people and livestock during floods, huge snow drifts and other emergencies. The new pick-up version has also been designed to tow a vegetation control sprayer.

There is no doubt the Fat Truck is designed with safety in mind, effortlessly demonstrating its high-performance capabilities as a go-anywhere amphibious vehicle. With a hard-top or pick-up configuration and towing capability, the potential applications in which this vehicle can be used are simply endless.

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Popular Primor

Straw spreading has revolutionised the livestock industry by enabling farms to bed cattle down quickly, saving both time and straw. Kuhn's Primor is relatively new to the market but offers plenty as a used purchase

WORDS **HOWARD SHERREN** IMAGES **HOWARD SHERREN/KUHN FARM MACHINERY**

 The Kuhn name was born in a small village forge in 1828, when Joseph Kuhn began the production of scales and weighing equipment. However, a major change took place in 1864 with the opening of the new Paris-Strasbourg railway line and a surge in prosperity in France at that time. Joseph moved to Saverne to start a factory for producing agricultural machinery. By 1921 special workshops were built to accommodate an assembly line for threshing machines and by 1928 the production of mowers, tedders and tedder-rake combinations steadily increased.



Above: The 60-series machines were updated to the 70-series in 2009

In 1993 Kuhn acquired the manufacturing firm Audureau, which opened up the range and included the original Primor straw bedding machines. With an increase

in big bales, many farmers welcomed the innovation, easing the labour demand at harvest and during subsequent handling, be it round or rectangular bales of straw, silage or hay, the benefits of equal distribution helped increase sales. In the UK it was the launch of the first 60-series range in 1999 that boosted popularity, the three-model range consisting of the Primor 5560, 3560 and mounted 2060.

Popular model

The Primor 3560 is one of the most popular sellers in the UK. It can be operated with as little as 60hp and its 3.5m³ capacity allows it to handle two 1.6m round bales or a single large rectangular bale at one time. ▶

"The Primor is one of the most popular sellers in the UK"



► The 5560 can handle up to three round bales with a diameter of 1.50m, helping to limit round trips on the farm.

The Primor can distribute silage or straw via a side chute, which will project material for up to 18m if required. It also has a 2.75m-high chute, which can throw straw up to 12m with a 310-degree rotation. A two-speed gearbox allows the Primor to lower the speed mainly for silage and then offer a faster rate for distributing straw.

An updated 70-series was launched in 2009 and the Primor 3570 arrived in the UK in 2010. With an increase in farm size, demands for bigger kit led to new models and Kuhn launched the larger capacity Primor 15070 in 2016, boasting a massive 15m³ capacity. This was shortly before developing the Cleanstraw dust reduction system in 2018. The 3570 remains in the current straw bedder line-up.

Long drawbar

The Primor utilises quite a long drawbar, with the option of two different lengths to allow better turning angles for bigger tractors. The ring hitch shouldn't be worn but look for signs of twists or cracks from abuse. The drawbar is pinned to the chassis further up and these need to be kept tight.



Kuhn Primor 3560M

Capacity 3.5m³
Spread width Up to 18m
Power requirement 51hp
Height 2.6m
Width 2.05m
Length 3.94m
Tyre size 10.00/75-15.3
Unladen weight 2380kg
Hydraulic requirement 30L/min at 180bar

“A long drawbar allows better turning angles for bigger tractors”

The PTO shaft is your typical heavy-duty unit fitted with a slip clutch nearest the gearbox to provide protection to the driveline. However, an issue here is that if not kept torqued correctly and allowed to slip regularly the drive will be interrupted and will block. It's best to service the clutch regularly to ensure no downtime.

A two-speed gearbox allows a speed of either 270 or 540rpm depending on silage or straw operation. Not much of a problem

area but ensure the gearbox and cable changes speed correctly and doesn't make any nasty noises.

Polydrive

Power is transmitted from the gearbox through a shaft, which in turn drives a Polydrive power-band belt system that is engaged/disengaged using a hydraulic cylinder. The power band claims to provide high power transmission to the distribution beater rotor, while also acting as a safety device.



THINGS TO LOOK OUT FOR...

The drawbar is pinned to the machine. It is unlikely to be worn but check for cracks and safe fitment. Check the PTO shaft slides smoothly, joints aren't worn and the cover is safe.

One area that is very difficult to assess is the slip clutch, which will only be noticeable when under load. Ask if this area has been serviced or price up a potential rebuild.

The twin-speed box allows spreading and feeding to take place. Speeds are changed with a cable - check this. Check the oil in the gearbox and that it runs quietly.



The combination of the power of a mechanical drive system and the flexibility of hydraulics allows for easier feeding of haylage and hay. The hydraulic feed rotor disengagement system interrupts straw blowing or feeding instantly to avoid damage and the machine runs silently in operation thanks to the belt drive.

The 'all-fodder' feed rotor is equipped with sections mounted on eight discs to preserve the structure of products such as silage. The shape and position of the regulating tines help spread the fodder over the entire length of the feed rotor, resulting in regular feeding of the turbine. Both the 3570M and 5570M are equipped with an adjustable control system. This bank of tines can be mounted in one of three different positions, or alternatively an optional hydraulic adjustment is available.

In the low position the tines work well in long hay and haylage, the high position being for straw. The bed chain operates independently to draw material into the beater rotor and can be operated at varying speeds and put into reverse. The full-width slats attached to the bed chain move the product towards the flywheel. Check the clamps are in good shape and the bed chains have adjustment if slack.

Check for any signs of belt damage

KUHN PRIMOR - TYPICAL USED PRICE GUIDE

Year	Model	Spec/condition	Price
2010	2060M	Mounted, very good	£6750
2011	2060M	Mounted, cable control / average	£2450
2011	3570M	Very clean	£7500
2011	3570M	Average	£5250
2011	5570M	Good	£3500
2014	3570M	Rusty wheels	£8500
2016	3570M	Excellent	£9550
2019	3570M	Long drawbar, clean straw system	£15,500
2019	15070M	Very good	£19,950
2021	3570M	Demonstration unit	£13,750
2021	3570M	New	£14,650

or cracking, and that the hydraulic ram seal is not leaking. Look for worn bearings on the driveline and the end of the beater. Signs of regular greasing can be a good indication of how well the machine has been cared for.

Large flywheel

The flywheel consists of eight blades, two of which are longer than the others, which Kuhn states is in order to generate a speed differential in the

turbine and produce a 'shower' of straw. Kuhn claims this has a large working area of the broad 150mm blades and blows constantly and evenly from bottom to top without needing to touch the chute.

The volume of air in motion in this chamber sucks up the product while gently separating it and remains whole. The flywheel also has a stainless-steel bottom to increase its service life.

The side panel unbolts and swings upwards to allow easy access but the panel hinges can take a beating. Check the condition of the rotor bearings, plus pipes and cables for rodent damage.

The Polydrive belt transfers drive from the gearbox to the beaters. The ram pushes the pulley to tighten the belt, which can slip and will deteriorate. Check for cracks and perishing.

The feed rotor is equipped with sections mounted on eight discs, each with multiple 'reversible' knife sections. Check fixed and bolted fingers are all in place and the beater looks balanced.





THINGS TO LOOK OUT FOR...

The bed is a good indication of how much work the machine has done. Check the slats are straight and clamps are in good shape, checking adjustment remains in the chain tension.

In many cases the lights will be cracked and damaged, however it is a common light unit and easy to replace. Check the plug and wiring for vermin attack.

Wheel equipment on the 3570 is very basic. A standard 10.0/75-15.3 implement tyre is a cheap replacement if required. Look for rim damage and wheel nuts have been kept tight.

KUHN PRIMOR HISTORY

- 1993** | Kuhn acquires manufacturing firm Audureau, including the original Primor straw bedding machines.
- 1999** | Launch of the first 60-series range, consisting of the Primor 5560, Primor 3560 and mounted Primor 2060.
- 2009** | Launch of first updated 70-series models. The Primor 5570 is first seen at the SIMA Show.
- 2010** | Kuhn launches Primor 3570 in the UK, where it becomes one of the most popular.
- 2016** | Bigger farms mean bigger kit, so Kuhn launches the larger Primor 15070 in UK.
- 2018** | Kuhn reveals Cleanstraw dust reduction system on the Primor straw spreader with applicator to apply fine mist of water to straw as it is distributed.



► The Primor multi-purpose chute is positioned in line with the turbine and allows straw blowing up to 18m on the right-hand side, 13m on the left. Mounted on a circular rack, the hydraulically powered chute is rotated through 300 degrees by fingertip control from the tractor cab. Check the condition of the blades and assess for damage. Investigate the flywheel housing for wear; stainless bottom panels should last but check other steel areas past this. On the chute, check there isn't much play

in the swivel and adjustment mechanism.

Control boxes

The Primor has electric controls as standard and the compact box fits neatly in all cabs. These controls give access to all the machine's vital features, grouped together on a single joystick. The chute swivel and cap actions can be controlled with just one hand. The cable can be a bit bulky when routing into the cab and works well. Check the cable hasn't

Above: Kuhn launched the first Primor 60 series range in 1999 with the 5560, 3560 and mounted 2060

been crushed or damaged. Only the flywheel speed (270/540rpm) is switched by a remote-control cable.

A separate unit on the rear of machine gives easy control of the rear tailgate for self-loading outside of the tractor cab, but unfortunately it doesn't control the bed. Lights will always take a beating and in many cases are always cracked. Often this isn't a consideration for most as many will never hit the road, but it does give an indication of how the machine has been looked after. **EMJ**

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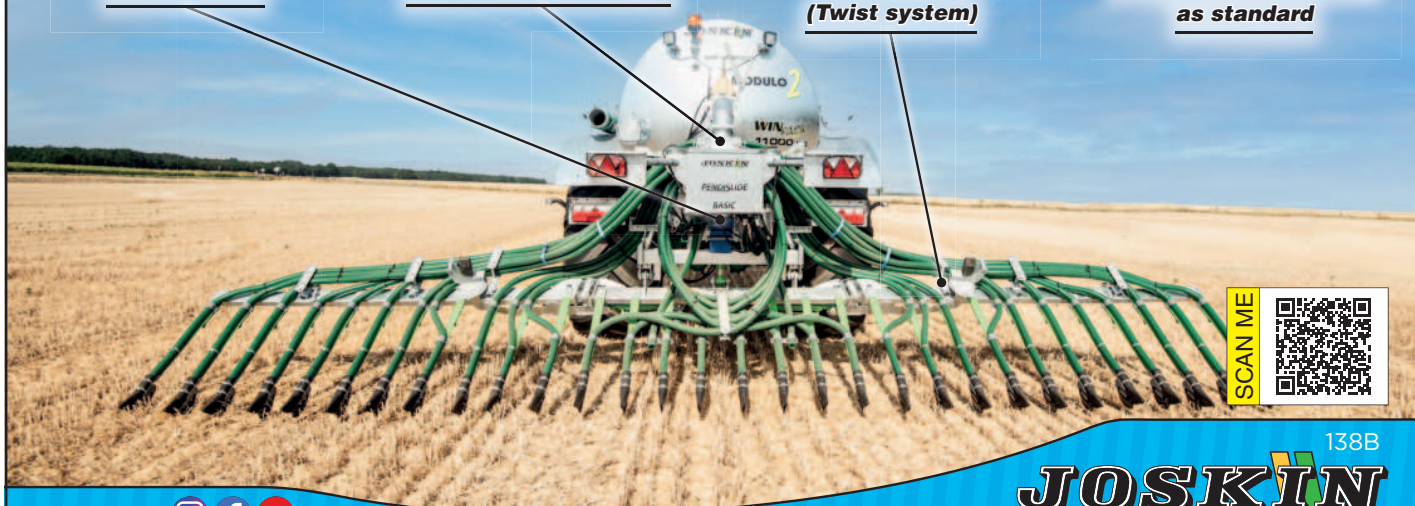
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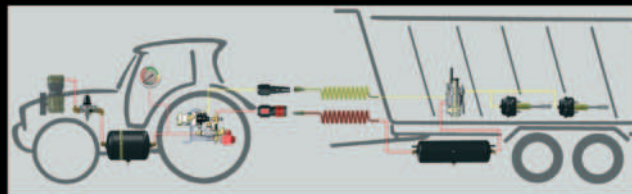


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This field test shows two identical New Holland T7.270 tractors pulling a New Holland T8 SmartTrax. The tractor on the left is equipped with Michelin AxioBib 2 tyres and CTIS

“The system can be installed on the New Holland T7 range built at Basildon”



Rush of air

FMJ joined Michelin in Cambridgeshire to trial the company's new central tyre inflation system, and some of its new developments in rubber track technology

WORDS & IMAGES **SIMON HENLEY**

Michelin has been a guiding light in the world of tractor tyres for some time. Back in 2004 the company first introduced Ultraflex tyre technology and since then, with the debut of products including the XeoBib, AxioBib, SprayBib, Cerexbib and TrailXBib tyres, Michelin has proved that tractor tyres can serve a dual purpose.

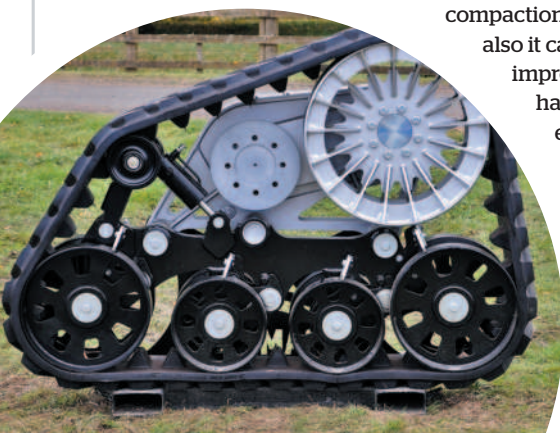
Specifically, by using flexible wall technology, the tyre can not only be used to improve tractive performance and reduce compaction in the field, but also it can significantly improve ride comfort, handling and fuel efficiency on the road. However,

there is one proviso: before the tyres can do their magic they have to be at the right pressure.

We all know how long it can take to set the tyre pressures on a modern tractor. The volume of air required to inflate a 42in tractor tyre, for example, is considerable. Even with a decent compressor it can take 15 to 20 minutes to increase the air pressure on a 900/60 R42 rear tyre from in-field to on-road values, and it takes almost the same amount of time to deflate them again. But there is a solution.

A few years ago Michelin introduced a new central tyre inflation system (CTIS) called Zen@Terra. The system was developed in liaison with farmers and a joint collaboration with the manufacturers PTG in Germany and Téléflow in France, which, for the record, were both purchased by Michelin in 2018.

Michelin tyres are not exclusive to one brand or type of tractor, so producing a CTIS that can fit a wide range of different machines is extremely important. Here in the UK, the PTG system is distributed by Tractair Ltd, a specialist ▶



Left: This Camso track unit bolts directly on to the tractor hub of 110-165hp tractors



Left: Mounted on a conventional bar axle with the wheels removed (above left inset), the track unit on this T5.115 comes with an anti-rotation device that limits oscillation



Left: The Michelin Zen@Terra system developed with PTG in Germany costs from £5500 to £6800, plus fitting

Far left: Designed so the track system matches the diameter of the standard rear wheel, the positive drive track system limits speed to 27kph

“The track system can be quickly switched over from conventional wheels”

► company based near Hull that designs and installs both air-braking and tyre inflation systems.

The installation of the CTIS, which is available for most makes and models of tractor, can either be performed by Tractair, or for some vehicle specific models, there are kits available so customers could install it themselves.

Michelin and New Holland have announced that the PTG system can now easily be installed on the New Holland T7 range built at Basildon, as the tractors are already equipped with the relevant drillings for the system in the rear axles. There's not an official alliance between the companies, but it is what might be construed as an unofficial seal of approval by New Holland since the tractors are factory-ready for fitment of the system.

Real-world test

The PTG system switches from field to road pressures at a rate of approximately 1.0bar per minute. Changing tyre pressures is completely effortless, and as the tyres inflate you can physically feel them changing formation.

Keen to demonstrate the importance of using a tyre with ultra-flex technology with its CTIS, Michelin organised a tractive effort demonstration using two identical New Holland T7.270 tractors, which were both ballasted to tip the scales at 12,360kg. The test required the two tractors to pull a 'brake' tractor, in this case a New Holland T8 SmartTrax model equipped with a large stubble cultivator, for a distance of 100m in the field.

The idea of this demo was to show the improvement that an Axiobib 2 VF (Very high Flexion) tyre fitted to one

of the T7 tractors could give over a standard Multibib tyre fitted to the other tractor. To make things even more interesting, the tractors were linked together by a heavy-duty cable pulley system attached to the front of the T8 SmartTrax, which would allow the T7 tractor with the greater traction advantage to pull ahead.

With the tyre pressures for the T7 with Axiobib 2 VF tyres set at 9.0psi in the front tyres and 10psi in the rears, the second tractor with the standard Multibib tyres had the pressures set to 23psi all round.

Carefully orchestrated so both tractors pulled away at exactly the same time at exactly the same speed (4.6kph), it was immediately evident that the tractor with the Axiobib 2 tyres had the advantage. It reached the 100m mark a clear two metres ahead of the second tractor, producing a cleaner and wider footprint with very little soil disruption and noticeably less soil compaction.

Using a specialised tool to ascertain soil compaction, which essentially indicates the difference in soil damage by measuring the soil structure, Michelin demonstrated the amount of ground pressure was effectively halved by using the Axiobib 2 VF tyres, reducing it to barely 12psi.

Furthermore, because the low operating pressure increased the contact point of the tyre by almost 40 per cent, the amount of available tractive power is also increased. The Michelin test results on the day identified a 17 per cent increase in traction, which having seen the practical demonstration is easy to believe.

From an onlooker's perspective, if the Axiobib 2 VF tyre can outperform a standard Multibib tyre with a two-metre



Above and top: Connected using a cable pulley system, which enabled the tractor with the most traction to pull ahead, the Axiobib 2 tractor surged ahead of the second tractor with Multibib tyres

Below: Michelin pioneered Ultraflex tyre technology in 2004. The Axiobib2 VF (Very high Flexion) tyre demonstrates its latest Ultraflex technology



Demonstrated on a New Holland T5.115 tractor, this removable half-track system is a new design from Camso

advantage over a distance of 100m, just imagine what it could do in an entire season.

New half-track technology

Some new developments in rubber track technology were also being showcased at the Michelin event. Michelin owns Canadian track manufacturer Camso, which is internationally recognised as a leading force in rubber-track technology.

The first of these was demonstrated on a New Holland T5 tractor, which was being used to unveil a new half-track system. The track system is a new design out of Camso's Italian facility, which developed the system to move on from steel track machines used on hill farms.

The concept has been driven by New Holland, which has recognised the potential for a track system suitable for a mid-sized tractor. Essentially, the idea is to replace two tractors with one by developing a track system that can be quickly switched over from conventional wheels.

The track system uses the same bar axle set-up used for the wheels. It comes with an anti-rotation device, which limits track oscillation to 25 degrees on either side. This is



a positive drive system so the tractor's top-speed is reduced to 27kph, but that's more than enough speed for working in fruit, vegetable or orchard applications, for which this half-track would be useful.

We did get a brief opportunity to drive the T5 and truthfully it behaves in much the same way the T5 would with wheels. There's none of the pushing effect you sometimes get when making tight turns with these type of track systems and scrubbing was minimal. The system is available for order now, at a cost of somewhere around £25,000.

Universal half-track

Another new idea in half-track design has been developed by Camso for the 100-165hp market sector, which includes the New Holland T6 range. This new system bolts directly on to the tractor hub so you don't require a bar axle. It uses a positive track drive with a gear-correction transmission incorporated into the track unit. The system also features a rubber-block suspension system.

It's worth noting, Camso has specifically developed this system for half-track applications only. This is primarily because fitting track units on the front axle of tractors this size basically saps too much power.

According to the firm, some pre-production examples are currently in use. The system is primarily aimed at vegetable growers who require a tractor with a lighter footprint. Suitable for most makes and models of tractor in this power category, the system will be available from 2023 with 300mm, 340mm and 450mm width tracks. Prices are to be announced.

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Makita expands radio range

Makita has introduced the new DMR301 Bluetooth DAB/DAB+ radio, which is compatible with both LXT and CXT batteries. It is the first job site radio in Makita's line-up to offer battery charging to power tools and accessories when powered by the mains using an AC adaptor. It can also wirelessly connect to mobile devices via Bluetooth, features two USB output ports for charging mobile phones, and is dust and shower proof. It even has a built-in bottle opener. A 6.0Ah 18V LXT battery gives 24 hours run time.

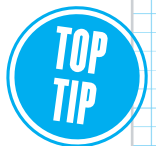
New PTO guards from Sparex

Sparex has developed an innovative range of PTO guards that are specifically engineered for ease of use and safety. Exclusive to Sparex, Gardloc makes fitting PTO guards a quick, easy and safe process using patented A-Lock technology, which clicks into position to allow the user to secure the PTO guard with one simple action.

Various options are available, suitable for Italian and German profile types and a variety of tube lengths.



Immobiliser prevents machinery theft



Farm machinery theft figures remain high and owners are being urged to increase security measures. An immobiliser is one of the main preventative measures that can be taken to deter criminals. Vapormatic has developed an award-winning in-cab immobiliser (part number VLC5501) that is purpose built for agricultural machinery. It can even prevent theft when keys are left in the ignition. The immobiliser is Thatcham approved and is simple to install and use. The wireless keypad uses unique Personal Identification Numbers (PIN) for activation.

Up to six PINs can be programmed to give multiple drivers access. For added security, the Vapormatic immobiliser passively arms itself in just four minutes from when the engine is switched off.



Q&A

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Q The joystick on our John Deere 3800 telehandler has become jerky in operation and responds intermittently. We swapped it for a service exchange unit but the problem still exists. Where do we go from here?

M. Bennett, Suffolk

A The 3800 uses electronic technology to operate the boom hydraulic systems. The joystick can wear out, however we have also encountered situations where problems have been directly linked to crushed or broken wires within the cab's wiring loom. Resolving this kind of problem can be like searching for a needle in a haystack. Closely monitor when problems most frequently occur to establish a pattern to help pinpoint the problem. Broken wiring looms usually occur in high stress areas of the cab, such as under the floor matting or behind the seat. Remove the cab cladding while inspecting and testing the wiring loom to make this frustrating task a little easier.

Farming's top models

For nearly every working machine there is a model equivalent. Here are the latest scale models that won't look out of place in any miniature fleet.

Claas Jaguar 980 forage harvester with Orbis 900 maize attachment

Britains 1:32

This Jaguar 980 is the first Claas forage harvester Britains has offered for over 20 years and it's a good-looking, well-built metal and plastic model. Britains has equipped the harvester with Claas's 9.0m-wide Orbis 900 maize attachment.

£62.99

● www.britainsfarmtoys.co.uk

Made for maize

The three-section plastic maize unit attaches to the harvester on two pins and unfolds into its working position on two rams. All the feed discs on the maize attachment rotate freely and the three crop guides are hinged. Two working rams support the feed unit.

Moving parts

Britains has provided the harvester with steerable rear wheels and a drawbar for towing a trailer. The discharge chute position adjusts but neither side panels, end panel nor cab door open. Driving mirrors, painted work lights and painted warning beacons are provided on the cab.

Case IH Magnum autonomous tractor

Schuco 1:32

Announced at the German toy fair in 2018, Schuco's limited edition Magnum autonomous tractor has now been released. It's a smart resin model on which the bonnet and mudguards are finished in metallic red paint. There are small Case IH decals on the bonnet side and a large Case IH decal on the bonnet top. Headlights have plastic lenses.

£160.99 ● www.schuco.de

Dual wheels

The tractor's equipped with good-looking row-crop tyres on dual wheels, although the front wheels do not steer. Detailing provided on the tractor's rear includes a fixed three-point linkage equipped with quick-hitch frame, clevis drawbar with pin, PTO and external hydraulic block.



Claas Axion 960TT

Wiking 1:32

After launching the Axion 960TT model in 2019 Wiking has now released this special edition weathered version limited to 1000 models only available through the Claas dealer network. The individually hand-painted front wheels, tracks and lower parts of the tractor are weathered. The tractor also sports updated bonnet decals. Around £80 (€94.90) ● www.claas.co.uk/sales-finance/dealers

Covered in dirt

The light brown weathering continues at the tractor's rear. Here the working three-point linkage and clevis drawbar are weathered, as are the mudguard bottoms. Like the original model, Wiking supplies a small pin for the adjustable height drawbar.



Deutz-Fahr 9340TTV Warrior

Schuco 1:87

Detail levels are good for this scale of model. There are linkages front and rear and colour coded hydraulic connectors. On the glazed cab there are mirrors and a white GPS receiver. The two-tone grey cab interior has seats, steering wheel and the monitor detailed.

£16.99 ● www.schuco.de



Fendt Rogator 344 trailed sprayer

ROS 1:32

This limited edition ROS sprayer is individually numbered and available from Fendt only. It's a well-built and detailed model with a folding stand, hinged access steps and steerable rear wheels. With the yellow PTO shaft positioned below the drawbar it's designed to fit model tractors with a European style hitch.

Around £72.47 ● www.shop.fendt.com

Folding boom

The five-section, 24m-wide boom is provided with nozzle and black flexible supply hose details. It unfolds smoothly on its rams and its height and the angle of the boom sections are fully adjustable. ROS has also provided a painted warning beacon, mudguards, warning boards and painted tail lights.



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Purchased from former Leicester-based John Deere agent Netherseal Tractors, this 7700 model was acquired brand new in 1996 along with a new 6900 (inset above)



One-owner wonder

The Sheppard family in Leicestershire have owned a 1996 John Deere 7700 from new and it still plays a pivotal role on their farm. *FMJ* went to see the tractor in action

WORDS AND IMAGES **SIMON HENLEY**

It's astonishing just how many farms in Britain still rely on tractors built in the 1980s and 1990s. While they may not offer the modern features and technology of the latest high-tech emissions-friendly machines, they are frequently retained for their simplicity, rugged reliability and their affordability.

In Leicestershire is a 25-year-old, one-owner John Deere 7700 owned by the Sheppard family, who farm 200ha near Hinckley. This is a particularly interesting tractor because it depicts the first generation of a tractor design that represented a huge departure from previous John Deere models. It also represented a huge gamble for Deere & Co executives.

The John Deere 6000-Series and 7000-Series ranges basically revolutionised tractor design when they were launched in 1992. While the 6000-Series was primarily developed at Mannheim in Germany for the European market, the larger 7000-Series was developed by a Waterloo-based engineering team in the USA.

The launch of these all-new models was initiated by a development programme that had started some 13 years earlier. Back in 1979, John Deere's Product Engineering Centre in Waterloo, Iowa, conducted a feasibility study to explore the potential for

using a mainframe chassis in tractors.

It was a study that would lay the path for a development project that would become known as the M-Tractor.

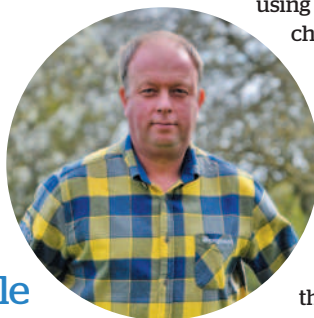
In 1984 senior executives at John Deere's world headquarters in Moline, Illinois, decided to take the mainframe concept to the next stage.

A combined team of nine engineers from Germany and the USA were commissioned to produce a study exploring the concept of mainframe tractor production and to make a design proposal.

Flexible steel chassis

The study was completed the following year, at which time the engineering team was given permission to make a mock-up of its design, the first of which was completed in December 1985. What the M-Tractor design concept did was turn away from the rigid load-bearing castings traditionally used by tractor manufacturers and replace it with a strong, flexible steel chassis that utilised modular engine, axle and transmission components that could be easily interchanged.

Styling for the new tractors was penned by the Michigan-based design house Henry Dreyfuss & Associates, which had worked with Deere & Company since 1938. The sharp lines and subtle curves represented a huge departure from previous generations of Deere tractors, as did the new TechCenter cab, which for the first time offered two doors.



Profile

Machine

John Deere 7700

Year 1996

Owner Pete Sheppard

Owned for 25 years

Hours 5500

Used for Top work,

timber haulage

Original dealer

Netherseal Tractors

“The John Deere 7000-Series basically revolutionised tractor design”



Left: The 7700 F-R shuttle lever integrates the powershift ratios in both directions. To prevent inadvertently engaging too high a gear when shuttling, adjustable stops were fitted (inset above)

Right: At the time of its launch, the 7700's new two-door TechCenter cab was quieter and offered 40 per cent more interior room than the SoundGard 2 on previous ranges



Right: Excellent forward visibility, a comfortable seat and fully adjustable steering wheel are all features that make the 7700 a pleasure to drive, despite being 25 years old

Far right: The 7700 is described as an excellent top-work tractor thanks to the abundant 670Nm of torque



“The 7.6-litre engine pulls like a train and purrs like a kitten”

▶ The new tractor range encompassed three all-new six-cylinder models, specifically the 7600, 7700 and 7800. The 150hp 7700 and 170hp 7800 became most popular with UK farmers and contractors, both of which were powered by a 7.6-litre, six-cylinder, turbocharged engine mated to John Deere's all-new PowrQuad semi-powershift transmission.

Pulls like a train

The Sheppard family's John Deere 7700 is a late production example, which was purchased alongside a John Deere 6900 tractor in 1996. Both tractors are still in service today.

“The 7700 was always our go-to tractor for top work,” explains Pete Sheppard. “It's an excellent draft tractor and the 7.6-litre engine pulls like a train and purrs like a kitten. These days it doesn't work quite so hard and spends the majority of its time

hauling wood and operating a timber crane for our firewood business.”

The Sheppard family established Cottage Firewood 25 years ago and today the business serves customers throughout the Midlands. The task of processing large volumes of firewood requires a reliable tractor with decent hydraulic power and plenty of grunt for bulk materials handling. The 7700 suits this task very well.

“The beauty of the 7700 is its simplicity,” adds Pete. “It's the old fashioned ‘pull-a-lever’ design that makes it simple to operate. Inside the cab is roomy, but it doesn't have a great deal of storage space. What I particularly like is the position of the gear and hydraulic levers on the right-hand console, which

are well placed and fall very easily to hand.

“The gearshift layout is actually a bit peculiar because the forward-reverse lever also controls the four powershift ratios in both directions. Because of this, when you're shuttling back and forth, you can

Tech specs

John Deere 7700

Engine John Deere 7.6-litre, 6-cyl, turbo
Power 150hp
Torque 670Nm @ 1400rpm

Transmission JD PowrQuad 16F/12R (40kph)

Hydraulics 96L/min
Rear linkage 4550kg
Wheelbase 2.79m
Weight 6291kg (shipped)



Above: Hydraulic levers are well placed and offer simple pull-a-lever operation. Electronic rear linkage control features dials to adjust lift height and response (inset left)

The 7700 spends most of its time on a timber crane hauling logs, which will be processed for firewood and sold through the Sheppard family's subsidiary business Cottage Firewood



accidentally select a higher gear than you want to as you change direction. To prevent this from occurring John Deere put adjustable stops in the shuttle lever selector gate, which the driver can position to stop the lever at the required gear, whether shifting into forward or reverse. It works well enough but it's just a bit fiddly.

"One thing I have never liked on this tractor is the position of the foot throttle. I'm over six-foot tall and unless I have the seat all the way forward I can't reach it. The bloke who was responsible for putting the throttle pedal in the cab must have had an extra-long right leg. Having said that, the air seat was one of the most comfortable you could find in any tractor at the time. I also like the adjustable steering wheel, which can be set perfectly to suit any type of driving style."

Choice of two

Given the choice, Pete Sheppard is the first to admit he actually prefers driving the farm's 6900 tractor, which until last season



Above: The John Deere 7700 was one of three models introduced in 1992 as part of the all-new John Deere 7000-Series line-up

was its primary drilling and fertilising tractor. While both the 7700 and 6900 are very similar to operate, the smaller dimensions of the 130hp German model make it nimbler and more manoeuvrable than its US-built stable mate.

"You could argue the fit and finish of the 7700 is marginally better than the 6900," he admits. "They're both well put together but the 7700 has more of a 'Tonka-tough' feeling

about it. The interior trim and fittings have survived the test of time better than the 6900, which has less hours on the clock.

"Neither of these older tractors is suitable for long-haul trailer work. They will both do 40kph, but with no suspension they bounce around too much with a heavy load in tow. We bought a JCB Fastrac 185-65 for hauling trailers and we still use it today. Perhaps the best thing about the 7700 or the 6900 is that you can fix these tractors with a set of sockets and some spanners," concedes Pete. "They're easy to service and when something does go wrong, it can actually be diagnosed and affordably repaired."

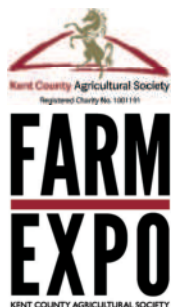
"The 7700s haven't kept their value as well as the later 7710 or 7810 models, but they are still appreciating. The way things are today, the demand for simple, reliable six-cylinder tractors will continue to increase and so will their value. I couldn't afford to replace the 7700 today with something that is as capable or reliable as this tractor has been."

FMJ

Working with a classic

Is your classic tractor still putting in a shift that puts modern kit to shame? Prefer the bark of an old-school six-cylinder? Favour on-farm fixes without connecting a laptop? We want to see your older machines in action. Send details of your working classics, ideally with a photo or two, to info@farmmachineryjournal.co.uk and they could feature in FMJ soon!

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WORDS AND IMAGES
STUART GIBBARD

William Catchpole's sugar beet machine was the first successful harvester to go into full production. By the 1940s almost all the British farmers lifting beet by mechanical means were using Catchpole harvesters

The concept of growing beet for sugar was introduced to Britain in the early years of the 20th century. The first beet factory at Cantley in Norfolk opened in 1912 but closed again just four years later. Despite this inauspicious start, the UK sugar beet industry eventually grew at a tremendous pace. Cantley reopened in 1920, followed by a second factory at Kelham in Nottinghamshire in 1924. By 1926 some 100,000 acres of sugar beet were being grown in the UK.

The industry remained fragmented as 18 factories were operated by 15 separate companies until a rationalisation of the industry saw the British Sugar Corporation formed in 1936. By 1960 British Sugar had some 36,000 farmers growing around 400,000 acres of beet under contract.

The rapid expansion of the industry was driven by scientific advances and improvements in mechanisation. Early harvesting techniques relied on the traditional 'knock-and-chop' method of lifting the roots by hand and then slicing off the tops with a beet knife. Sugar beet eventually became a very mechanised crop, although progress was slow.

The first tools to be developed were horse-drawn beet ploughs, which by the 1940s were being replaced by single-row mechanical harvesters. The early machines topped and lifted the roots, knocked off most of the soil and left the beet in heaps or windrows at intervals across the field. One of the early pioneers in the field was William Catchpole of Stanton, near Bury St Edmunds in Suffolk.

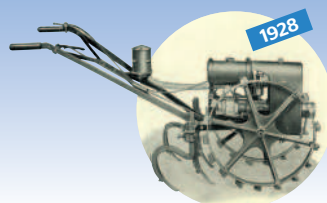


William Catchpole designs a motor cultivator

1928

1920

1930



1937

Six Catchpole harvesters built by Robert Bobby Ltd

1938

Catchpole engineering works established at Manor Farm, Stanton

1939

Catchpole beet harvester awarded RASE silver medal at 1939 Royal Show



Left: Nearly 23,000 acres of beet were lifted by Catchpole harvesters during 1948

No single machine has so great a reputation for a standard of commercial work

William Milne Catchpole was born on 22 June 1910. In 1928, while boarding at the rectory in the village of Bardwell, he designed and built a motor cultivator. After selling the rights to the cultivator to George Monro Ltd, William used the funds to develop a beet harvester.

This district of Suffolk was the centre of a large beet-growing area. The Bury St Edmunds factory, initially operated by the United Sugar Company, opened in 1925, the same year as the government introduced a bill providing subsidies to stimulate the home production of sugar. This act marked the beginning of a viable sugar industry and the expansion of Britain's beet acreage.

It was a new crop requiring new machines and there were opportunities to be had for those willing to enter the market. Catchpole had perfected his design by 1937 and his first six harvesters were made for him by Robert Bobby Ltd of Bury St Edmunds. The following year William established his own engineering works at Manor Farm, Stanton, and produced another 20 machines.

Evidently a very tall man, Catchpole cycled every day from his lodgings in Bardwell to Stanton, riding a modified bicycle of his own design with two crossbars. Manor Farm was owned by Alfred J. Edwards, a successful market gardener, whose daughter, Alice, William married in 1940.

Royal approval

The Catchpole sugar beet harvester was patented in 1939 and was awarded a RASE silver medal at that year's Royal Show. There were two machines on the stand at Windsor - a static model and another in motion being driven by an International F-20 tractor. The

idea was to demonstrate the harvester's constructional features in action. The machine was power driven, and International tractors were some of the first to be fitted with a PTO.

Catchpole's harvester was also entered into the Sugar Commission's trials of beet harvesting machinery, held in October 1939 and organised by the Institute for Research in Agricultural Engineering, Oxford. The harvester went into limited production and manufacture continued throughout the war.

One of the features of the Catchpole design was its unique topping mechanism, which was developed further in conjunction with the newly formed NIAE at Askham Bryan. The roots were topped by horizontal discs, held at the correct height by a creeper track mounted on a floating frame. Two pairs of concave discs at the front of the

machine cleared away any loose leaves or trash.

Rotating rubber flippers on spinner discs then flicked the tops to one side, leaving the ground clear for a pair of inclined digging

shares to lift the roots. The furrow slice from the digging shares was received by a rod-link conveyor that knocked off the soil and then dropped the beet on to a stationary wooden-slatted side-delivery conveyor.

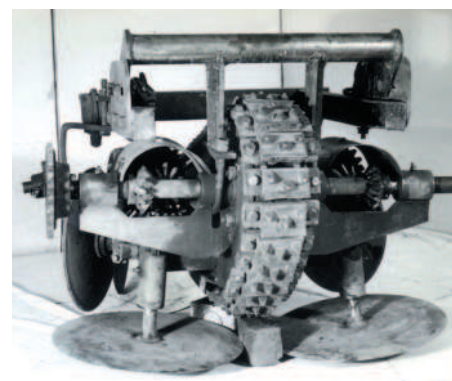
The harvester was centred on the row by an operator who steered the machine independently of the tractor. A lever raised and lowered the lifting mechanism. A foot-pedal engaged the drive to the conveyor to drop the roots in heaps at intervals across the field. A later improvement was the addition of a lever-operated rake to clear the tops before depositing the beet on the ground.

The power drive from the tractor - a minimum of 20hp was recommended - went to two separate gearboxes. The front box drove the topper and spinner units, while the other, located at the rear, powered the elevator and delivery conveyor. William Catchpole claimed that his machine saved farmers 30 shillings an acre in harvesting costs.

More machines

Despite the strides made in mechanisation during the Second World War, many beet growers still lifted their

Below: Unique topping unit was developed in conjunction with the NIAE



Specifications

Catchpole Sugar Beet Harvester (1947)

Power drive PTO via two separate gearboxes with three safety slip-clutches

Topper unit Chain-track feeler with two horizontal topping discs and four concave clearance discs; rotating rubber flippers on spinner discs

Digging Heat-treated steel lifting shares with chilled cast-iron points

Elevator Upper and lower rod-link conveyors operated by steel sprockets

Delivery Wooden-slatted side-delivery conveyor actuated by foot pedal



1940

1947

Incorporation of Catchpole Engineering Company Ltd

1947

Catchpole sells 300 beet harvesters

1948



1954

1954

Launch of Catchpole Cadet beet harvester

1960

Catchpole Engineering purchased by the Ross Group

1964



1964

1949

New Catchpole machines trialled at British Sugar demonstration

1949



1950

Improved Catchpole 51 beet harvester goes into production



- 1 Prototype Catchpole top-saving machine developed in conjunction with NIAE
- 2 Catchpole 51 rear elevator and trailer model
- 3 Production version of Catchpole sugar beet top saver launched in 1950
- 4 Catchpole harvester with rear-delivery elevator and following trailer at 1949 beet demonstration
- 5 Catchpole sugar beet harvester awarded RASE silver medal at 1939 Royal Show
- 6 Catchpole Major harvester had a top saver unit with separate side-delivery elevators
- 7 Catchpole's machine was first successful sugar beet harvester to go into full production

THE CATCHPOLE

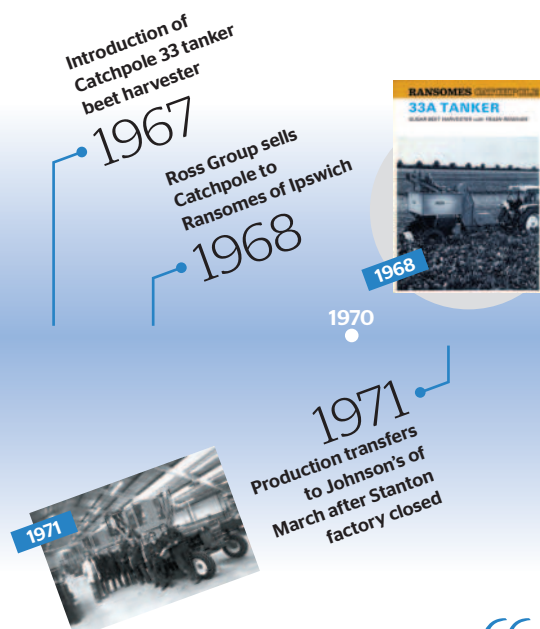
SUGAR BEET HARVESTER

CATCHPOLE

ENGINEERING COMPANY LIMITED

STANTON, BURY ST. EDMUNDS, SUFFOLK. PHONE STANTON 202.

PRICE SEE BROCHURE



“Users were sent a pre-paid postcard to record acres and problems encountered”

crop by hand. A survey made during the 1946 sugar beet season indicated that just 24 farmers harvested 40 acres or more entirely by machine. The following year, the number of growers harvesting by machine had increased to 46; all but five used Catchpole harvesters.

In 1947 William incorporated his business as the Catchpole Engineering Company Ltd. The following year, the company sold 300 of its harvesters. In 1949 the Farm Implement & Machinery Review wrote: “No single machine has so great a reputation for a standard of commercial work as has the Catchpole.” Records for that year show that of the 400,000 acres of sugar beet grown in the UK, just 43,000 acres were harvested mechanically. Of these, nearly 23,000 acres were lifted by Catchpole machines.

Several new improvements to the Catchpole harvester were trialled at the British Sugar Beet Corporation's post-war demonstration held at Ramsey Mereside in Huntingdonshire on 20-21 October 1949. The standard machine, now with the option of pneumatic tyres, was priced at £510.

The machine was also offered with a side-delivery elevator to drop the beet into a trailer running alongside the harvester. A third version, fitted with a rear-delivery elevator, was supplied with its own following trailer, which had a 20-25cwt capacity and could dump the beet at convenient points across the field. The side-delivery model was priced at £566, while the rear-delivery version cost £596 complete with trailer.

A prototype Catchpole

top-saving machine, developed in conjunction with the NIAE, was also demonstrated at Ramsey Mereside. This machine topped the beet, harvested the tops and then elevated them into a trailer for use as silage or animal feed. An improved version, marketed as the Catchpole Sugar Beet Top Saver, was awarded a RASE silver medal at the 1950 Royal Show at Oxford. Output was three to four acres per day.

New models

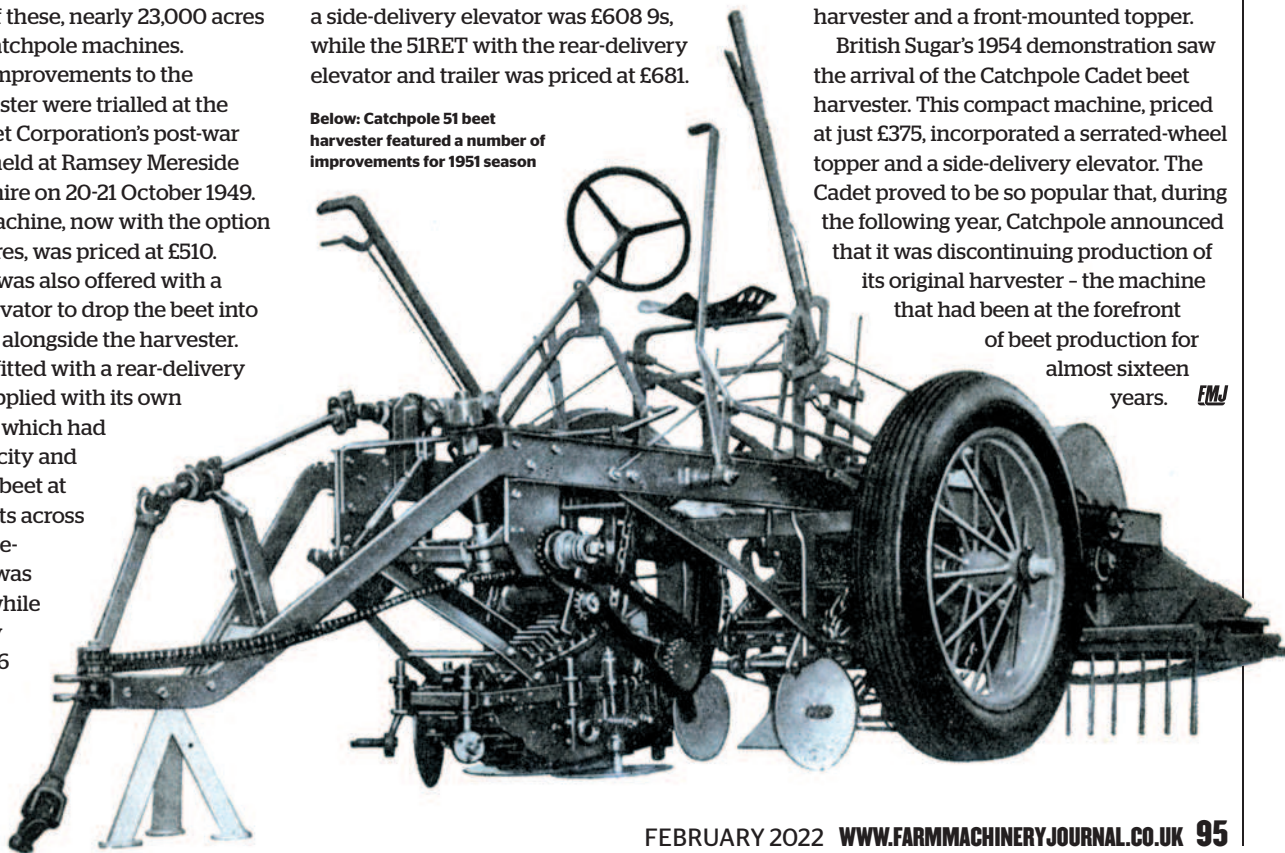
During 1950 the Catchpole 51 beet harvester was introduced with a number of refinements for the 1951 season. The original design with the side-discharge conveyor cost £548 on steel wheels. The 51SE with a side-delivery elevator was £608 9s, while the 51RET with the rear-delivery elevator and trailer was priced at £681.

Below: Catchpole 51 beet harvester featured a number of improvements for 1951 season

Catchpole dealers were required to carry a full stock of spares for the harvester and were expected to visit every owner at least twice during the harvesting season. Users were given a list of wearing parts, which they were advised to keep on the farm, and were sent a pre-paid reply postcard to record the number of acres harvested and comment on any problems encountered during the harvest period.

One further variation of the harvester, introduced in 1953, was the Catchpole Major, which incorporated the top saver and had separate side-delivery elevators for the beet and the tops. The Catchpole Minor, launched at the same time, was designed for the Nuffield tractor with a rear-mounted harvester and a front-mounted topper.

British Sugar's 1954 demonstration saw the arrival of the Catchpole Cadet beet harvester. This compact machine, priced at just £375, incorporated a serrated-wheel topper and a side-delivery elevator. The Cadet proved to be so popular that, during the following year, Catchpole announced that it was discontinuing production of its original harvester - the machine that had been at the forefront of beet production for almost sixteen years. **FMJ**





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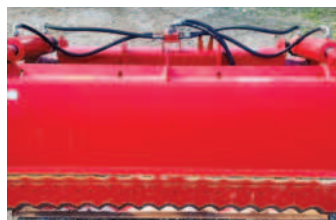


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Redrock 180/85 shear bucket, 2019, 5'10" wide, 1.25m³ capacity, 85cm opening, twin ram, serrated blade, 1/2 inch hoses, Euro 8 brackets, hardly used and in very good condition, £3,595 + VAT. Tel: 07760 236534. Somerset. **[BW110]**



Quicke Silocut 150 shear grab, 2010, 1.50m (5ft) wide, 0.95m³ capacity, 12 tines, twin ram, good cutting edge, hydraulic hoses, Euro 8 brackets, £995 + VAT. Tel: 07760 236534. Somerset. **[BW113]**



Conor 150 shear grab, 21.50m (5ft) wide, approx 0.95m³ capacity, 12 tines (all tight and straight) twin ram, good cutting edge, hydraulic hoses, in good condition but with some welding, Trima No.5 brackets, £995 + VAT. Tel: 07760 236534. Somerset. **[BW114]**



Bucket, genuine JCB 5ft ditching bucket, with pins, very good condition, fits 3CX, 8060, £300. Tel: 07774 428853. Tamworth. **[ABW75R]**



Soft Hands bale grab, new, euro 8 brackets, £875. Tel: 07970 471773. Devon. **[BW124]**



Muck grab, 5ft, c/w Euro brackets and pipes, £POA. Tel: 01286 830009. Gwynedd. **[BW117]**



Fleming 4ft transport box, excellent condition, £325. Tel: 07955 110384. Norfolk. **[ABW50R]**



Manitou (Whites Handling) telehandler grab, 2013, 7ft6 wide, good Kverneland tines, twin ram, hydraulic hoses, good tidy grab. Manitou brackets, £2,000 + VAT. Tel: 07760 236534. Somerset. **[BW112]**

MISCELLANEOUS



Fuel bowser, 10,000 litres, engine pump, super singles, £14,000. Tel: 07974 312002. Shropshire. **[BCW101]**



Water bowser, in excellent condition, complete with LED lights and hose, £550 ono. Tel: 01327 361531. Northampton. **[BCP12R]**



Heading tanks and bowser, banded steel diesel tank, 4,500 litres, excellent condition, £POA. Tel: 07885 540223. Nottinghamshire. **[BCW82R]**



Claas Ru 600 maize header, is in very nice condition, £POA. Tel: 07976 702858. Powys. **[BCW47R]**



Claas 520 whole crop header, in nice condition, £POA. Tel: 07976 702858. Powys. **[BCW48R]**



Komatsu PC50 5t digger, rubber tracks and blade, Q-hitch, digging and ditching buckets, low hours, tidy, ex-UK machine, £11,900. Tel: 07718 367 214. Co.Tyrone **[ABW117]**

FARM MACHINERY TRADER



Kubota KX015-4 digger, 2013, 2,141 hours, £10,800 + VAT. Tel: 01603 712222. Norfolk. **[ABW100]**



Takeuchi TB016 digger, 3,749 hrs, 5x buckets, trailer, £9,500 + VAT. Tel: 01603 712222. Norfolk. **[ABW101]**



Thwaites skip loader dumper, 4x4, 1t, £5,000 no VAT. Tel: 07766 216100. Norfolk. **[ABW102]**



Rotary commercial vehicle lifts x4, 28.8t, £4,500. Tel: 01603 712222. Norfolk. **[ABW108]**



Malone log splitter, new, £970. Tel: 07771 852774. Somerset. **[BW121]**



Malone log splitter, 14t, heavy duty, in stock, £950 + VAT. Tel: 07970 471773. Devon. **[BW125]**



Protech P180S post driver, 3 point hitch Cat 2, used to fit 420 x 2.4m posts only, good condition, £2,000. Tel: 07879076076. Boston. **[LAW4R]**



Malone post rammer, new, 350kg weight, hyd top link and side tilt, £2,850 + VAT. Tel: 07970 471773. Devon. **[BW126]**



Malone post banger, new, £2,950. Tel: 07771 852774. Somerset. **[BW120]**



Jansen GTS-1500 E wood chipper, good clean condition with very little use, comes with a new spare set of cutter blades, ring for more details. Tel: 07513 262634. Grimsby. **[LAP8R]**



Fendt Big Pack weights, 1,250kg and 1,800kg, £POA. Tel: 01603 712222. Norfolk. **[ABW106]**



McConnel saw bench, little used, £1,750 + VAT. Tel: 07831 665757. **[BCW5R]**



Grays heavy flat roll, 3m, £1,800 no VAT. Tel: 07766 216100. Norfolk. **[ABW104]**



Kawasaki Mule 3010, diesel, 4WD, 57 reg, V5, power steering, 3,150hrs, good tyres, £3,750 + VAT. Tel: 07970 471773. Devon. **[BW122]**



Kubota 900 RTV, full cab with doors, 2,500 hrs, new tyres, £7,500. Tel: 028 37 548971. Co.Tyrone. **[BW144]**



Isuzu D, max single cab, 30,000 miles, 2015, one owner, 3.5 ton towing, tidy with Truckman canopy and tow bar, one owner well serviced, £POA. Tel: 07740 683113. Cheltenham. **[ABW85R]**



Ifor Williams canopy, for Nissan Navara 2016-2019, good condition, £250 ono. Tel: 07796 990286. Chippenham. **[BCW7R]**

Laboratory testing of oil sump oil samples - can warn of many asymptomatic breakdowns before they happen. Only you get the report. Useful information before completing purchase of second hand machine. Contact oiltest@weyode.com **[JK]**

MOWERS & TOPPERS



John Deere 1350 mower & grouper, with transport ram, runs well, checked over, off small local farm, £4,250. Tel: 07718 367 212. **[ABW121R]**



Major topper, 7ft, very good condition, £POA. Tel: 01286 830009. Gwynedd. **[BW115]**

LOADS OF MACHINERY FOR SALE IN FMJ'S



Lely Splendimo 280 mower conditioner, 2012, new blades, gwo, 1,000rpm, £4,250. Tel: 07774 112211. Gloucestershire. **[BW105]**



Taarup 306 mower conditioner, 8ft, hydraulic drawer bar, trailed, £2,475 + VAT. Tel: 07970 471773. Devon. **[BW123]**

MUCK & SLURRY



Redrock 850 tanker and rain gun, on Russian tyres, hydraulic change over on pump, extra fill valve with twin side fill points, wash down gate valve, in very good condition, £6,500. Tel: 07710 372 273. **[ABW122R]**



Conor 2250 tanker, with rain gun, 2013, excellent, £10,900. Tel: 028 37 548971. Co.Tyrone. **[BW145]**

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PLOUGHS



Kverneland 4-furrow plough, AB Vari-width auto reset, no. 8 bodies, full set discs, rear depth wheel, very good metal, off local small farm, £POA. Tel: 07710 372 273. **[ABW120R]**



Pottinger 35S plough, reversible, 2013, 4f hyd reset, hyd vari width, skimmers, rear discs, £5,950 + VAT. Tel: 07788 785871. Cumbria. **[BW137]**



Kuhn plough, five-furrow reversible new points, £2,950 + VAT. Tel: 07976 702858. Powys. **[BCW107]**



Kverneland 3-furrow plough, reversible, auto reset, rear discs and skims, cheap plough for someone, off local farm, £1,490. Tel: 07802 897 800. Co.Tyrone. **[ABW119R]**



John Deere plough, 3-furrow, £450, for more info call. Tel: 07768 662419 or 07768 662419. Northumberland. **[ABW2R]**



Pottinger 455 Plus plough, ex-demo, five-furrow vari, £22,000. Tel: 01603 712222. Norwich. **[BCW96R]**

SPRAYERS



Hardi 12m sprayer, 1,000 litre tank, induction hopper and wash, electric pressure and controls, hydraulic height and fold, no test. £1,250 ono. Tel: 01474 852669. Sevenoaks. **[BCW79R]**

TRAILERS



AS Marston ACE trailer, 14t, Hyd brakes, super singles, £3,200 + VAT. Tel: 01603 712222. Norfolk. **[ABW103]**



Smyth Farmer silage trailer, 14t, 2009, sprung drawbar, rocking beam, 8 stud axles, up and over tailgate, hyd brakes, lights, £7,500 + VAT. Tel: 01823 253808. Somerset. **[BW129]**



Dunbar low loader trailer, approx 24ft long, carry around 15-18t, 10 stud high speed tri axles with twin wheels, air suspension, air brakes, fixed drawbar, good floor, road lights, sprung ramps, nice high spec trailer, £6,395 + VAT. Tel: 07760 236534. Somerset. **[BW106]**



JPM multi-purpose trailer, 14t, c/w ramps, call for more, £POA. Tel: 07976 702858. Powys. **[BCW105R]**



NC dump trailers, 10t and 14t, new/used in stock, £POA. Tel: 028 37 548971. Co.Tyrone. **[BW140]**



AS Marston grain trailer, 12t capacity, tandem sprung axles, super single tyres, hydraulic brakes, road lights, grain chute, one owner, grain only, very tidy older trailer, £5,295 + VAT. Tel: 07760 236534. Somerset. **[BW107]**

FARM MACHINERY TRADER



Crane trailer, 25ft, single axle, Hiab crane trailer, very solid, crane works well, PTO pump. £4,000 + VAT. Tel: 07956 012002. Ludlow. [BCW38R]



Ifor William's trailer, 5' x 8' twin wheels, will carry two ton, spare wheel bolster, in excellent condition, £950. Tel: 07801 844175. East Sussex. [BCW102R]



Eurospec dump trailer, 15t, multi-purpose, on 550 BKT tyres, £12,900. Tel: 028 37 548971. Co.Tyrone [BW146]



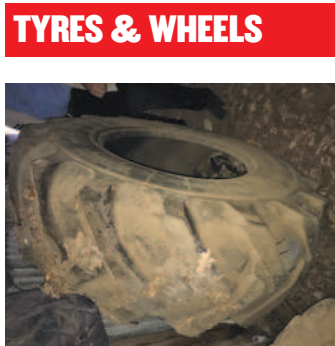
Gull 10t trailer, auto gate, grain chute, £3,900. Tel: 01603 712222. Norfolk. [ABW105]



Weeks 15t dump trailer, 10 stud axles, sprung drawbar, hyd tailgate, new brakes. Tel: 07710 372 273. [ABW118R]



JPM 28ft low loader, flip over ramps, 19t, 2021, £15,000. Tel 01603 712222. Norfolk. [ABW107]



x4 tyres available, £65 each, collection from BS36, near Bristol. Tel: 01454 778374. [BCW100]



Nokian 650/65R30.5 on rims, had approximately 200 hours use, £POA. Tel: 07919 693 332. Newark. [ABW34R]

Two tyres on rims, 12-5/80-18, very good condition, £50. Tel: 07706 922705. Doncaster [AB]

VEGETATION CONTROL



McConnell PA25 hedge cutter, right hand cut, cable control, boot flails, EPOA. Tel: 01286 830009. Gwynedd. [BW116]



McConnell PA96 hedge trimmer, 2010, electric controls, 3 point linkage, £9,500. Tel: 07771 852774. Somerset. [BW119]



Bomford hedge trimmer, 3 point linkage mounted, cable control, good flails, good rams, suit smaller tractor, good working order, £2,595 + VAT. Tel: 07760 236534. Somerset. [BW111]



McConnell PA53E hedge cutter, 2007, new cutter head 2014, electric controls, three-point linkage, vgc, £8,950. Tel: 07774 112211. Gloucestershire. [BW104]



Twose 315 hedge trimmer, 3 point linkage mounted, cable control, good flails, good rams, suit smaller tractor, good working order, £3,995 + VAT. Tel: 07760 236534. Somerset. [BW108]



McConnell PA5600 heavy duty hedger, on 65hp motor/pump with oil cooler, very clean. Tel: 07710 372273. N. Ireland. [LAW136R]

NOTICES



Looking for the whereabouts of an M-B Trac 800, registration number CFH748Y. Previously had a distinctive window sticker on top of the windscreen 'wake up with a young farmer'. Sold to Emyr Evans dealership in Denbigh, Wales and then believed to have been sold on to a new owner in Preston. If anyone has any idea of its whereabouts, please get in touch as we'd like to see a picture of how it is now and possibly see the old girl again. Please contact George on: 07766733273 or email georgejones2006@icloud.com [IJW4R]

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World of Farm Machinery

1 Your photos of machinery spotted in action around the globe



1 As February's Agritechnica 2022 is cancelled, we look back at some of your highlights over the last four editions. In 2013, Edward Turner was impressed by John Deere's efforts and this illuminated 8730 was immediately set as his phone screen background.

2 In 2015 Case IH fan Harry Morley spotted this Quadtrac 620 on the company's stand and couldn't resist a photo of it beneath the 'Beware of Imitations' sign.

3 Alan Crane took Agritechnica 2017 as a chance to explore a Sampo Rosenlew combine, although he'd still like to see one of these Finnish machines in action.

4 A trip in 2019 allowed Richard Guy-Smith to inspect the record-breaking JCB Fastrac driven by Guy Martin. While a new Fastrac like this was on Richard's wish list, he had to settle for a commemorative cap.

5 Allen Horrod got a birds-eye view on the Case IH stand in 2019. "I went for my first ever trip to the show and it was very impressive," he comments.



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.

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RG655
2014, 5129 Hrs, 240 HP
32m Chafer Boom
Tyres: 620/75R34 (50%)
£85,000.00



MT765C
2009, 9327 Hrs, 360 HP
Speed: 40Km/h
Track: 30 Track %: 60
£57,500.00



MT775E
2015, 3235 Hrs, 400 HP
Speed: 40Km/h
Track: 30 Track %: 50
£120,000.00



MT775E
2015, 7064 Hrs, 439 HP
Speed: 40Km/h
Track: 25 Track %: 90
£105,000.00



MT775E
2015, 6094 Hrs, 400 HP
Speed: 40Km/h
Track: 30 Track %: 40
£87,500.00



MT775E
2015, 6677 Hrs, 400 HP
Speed: 40Km/h
Track: 25 Track %: 50
£83,000.00



516 & CARGO 4X80
2019, 400 Hrs, 160 HP
Tyres: 540/65R28 (95%)
650/65R38 (95%)
£115,000.00



716
2018, 2245 Hrs, 175 HP
Tyres: 480/65R28 (90%)
520/70R38 (95%)
£88,500.00



720
2015, 3936 Hrs, 210 HP
Tyres: 540/65R30 (90%)
650/65R42 (95%)
£84,500.00



724
2017, 4500 Hrs, 240 HP
Tyres: 600/65R28 (40%)
650/75R38 (40%)
£92,500.00



828
2019, 1854 Hrs, 290 HP
Tyres: 600/70R30 (95%)
710/70R42 (95%)
£145,000.00



828
2017, 4332 Hrs, 290 HP
600/70R30 (30%) Michelin
710/70R42 (40%) Michelin
£105,000.00



MF 1765 M MP
65 HP, ROPS
Tyres: 9.5-16 AG Tyres
13.6R28 AG Tyres
£27,550.00



MF 5709 Global
2020, 581 Hrs, 100 HP
Tyres: 340/85R24 (90%)
420/85R34 (90%)
£46,450.00



MF 7620
2013, 4959 Hrs, 200 HP
Tyres: 480/70 R30 WA (40%)
620/70 R42 WF (20%)
£47,500.00



MF 7626 Dyna-6 EX
2013, 4169 Hrs, 260 HP
Tyres: 480/70R30 (70%)
620/70R42 (100%)
£54,850.00



MF 7718
2017, 1500 Hrs, 190 HP
Tyres: 540/65R28 (80%)
650/65R38 (70%)
£69,950.00



MF 7722
2018, 4200 Hrs, 230 HP
600/65R28 W18 WA (95%)
650/65R42 W18 WS (60%)
£63,000.00



T120H
2005, 8100 Hrs,
130 HP, Forestry Spec
Tyres: (50%)
£37,500.00



T174EA
2017, 2022 Hrs, 180 HP
Tyres: 540/65R28 (75%)
650/65R38 (80%)
£66,750.00



T174EA
2020, 1520 Hrs, 180 HP
Tyres: 540/65R28 (90%)
650/65R38 (95%)
£84,450.00



T194A
2020, 400 Hrs, 200 HP
Tyres: 650/65R42 (95%)
540/65R30 (95%)
£89,750.00



T194V
2019, 2530 Hrs, 200 HP
Tyres: 540/65R30 (80%)
650/65R42 (85%)
£89,750.00



T234D
2021, 649 Hrs, 240 HP
Tyres: 600/60R30 (90%)
710/60R42 (90%)
£119,500.00



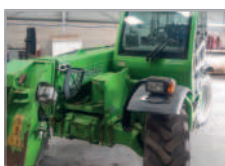
CAT TH408D
Year: 2018, 2042 Hrs
4300kg Lift, 8m Reach
500/70R24 (50%) Michelin
£51,250.00



MF 9306
Year: 2012, 3691 Hrs
Tyres: 405/70R20
Hydrostatic Transmission
£27,245.00



MANITOU MLT 1040
Year: 2020, 817 Hrs, 145 HP
Tyres: 460/70R24
Michelin (90%)
£87,500.00



MERLO 42.7
Year: 2015
7m Reach,
4200kg Lift
£44,850.00



MERLO 42.7 4WD
Year: 2017, 4200 Hrs
7m Reach, 4200kg lift
Michelin Tyres: (50%)
£44,000.00



MERLO 35.7CS 4WD
Year: 2018, 4200 Hrs
7m Reach, 3500kg lift
Tyres: 405/24 Mitas (10%)
£42,000.00



FIAT FULLBACK
2017 (67) 2.4 LX
Auto Double Cab
45,159 Miles
£19,490.00



FORD RANGER
2018 (18) 3.2 Wildtrack
Auto Double Cab
18,841 Miles
£30,290.00



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Auto Double Cab
26,671 Miles
£27,790.00



ISUZU D-MAX
2018 1.9 UKON
Auto Double Cab
46,500 Miles
£19,990.00



MITSUBISHI L200
2016 (66) 2.4 Titan
Manual Double Cab
34,349 Miles
£17,990.00



NISSAN NAVARA
2019 (69) 2.3 Connecta
Manual Double Cab
35,326 Miles
£24,890.00

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