

“ We use a lot of fuel so even a 1% saving is significant, and if we can use technology to achieve this, we’re very keen to do so. ”



Machinery Tractors

Pony power

Tractor design and functionality has come on in leaps and bounds in recent times. *CPM* rounds up the latest innovation.

By Charlotte Cunningham

Though tractors are the bread and butter of farm machinery, the technology engrained in some of the most recent launches is allowing growers to do more than ever before.

However, with such rapid development in the way of new machines, deciding what to invest in can feel like somewhat of a minefield.

CPM takes a look at some of the latest newcomers to the scene, and finds out how one Norfolk grower scooped over £15,000 by improving his fleet's fuel efficiency.

Fendt

Fendt recently announced its tracked tractors are joining the 511-673hp power range with the new Fendt 1100 Vario MT series.

With this new addition, this gives the Fendt 1167 Vario MT the highest horsepower of any tracked tractor with a stepless transmission on the market, says the firm.

Looking to the nuts and bolts, the gearbox is similar to wheeled tractors in how it works. The only difference is that operators have both hydromotors acting on the rear axle, in the absence of a front axle.

Features on board include Fendt's iD low-speed concept, which works particularly effectively with the VarioDrive powertrain, and is designed for high power reserves, explains Fendt's Richard Miller. "This system allows the engine to operate at a fuel-saving 1500rpm with a maximum torque of 3100 Nm.

"The two hydromotors of the hydrostatic mechanical powertrain swivel independently of each other. The Hydro-Motor 2 is also automatically completely disconnected at high speeds when unladen, which

eliminates drag losses. The hydraulic fan cools the engine perfectly at any engine speed — significantly increasing efficiency."

The 1151 Vario MT, 1156 Vario MT and 1162 MT models feature a MAN six-cylinder engine with a cubic capacity of 15.2 litres, while the 1167 Vario MT holds a MAN six-cylinder engine with a cubic capacity of 16.2 litres and a maximum power output of 673hp.

A wide range of ballast options allows for any kind of work, he adds. "The tracked tractor offers ballasting options on the rear drive wheels, the front guide wheel, with added weights on the sides of the tracked drive and at the front thanks to a variety of front weights."

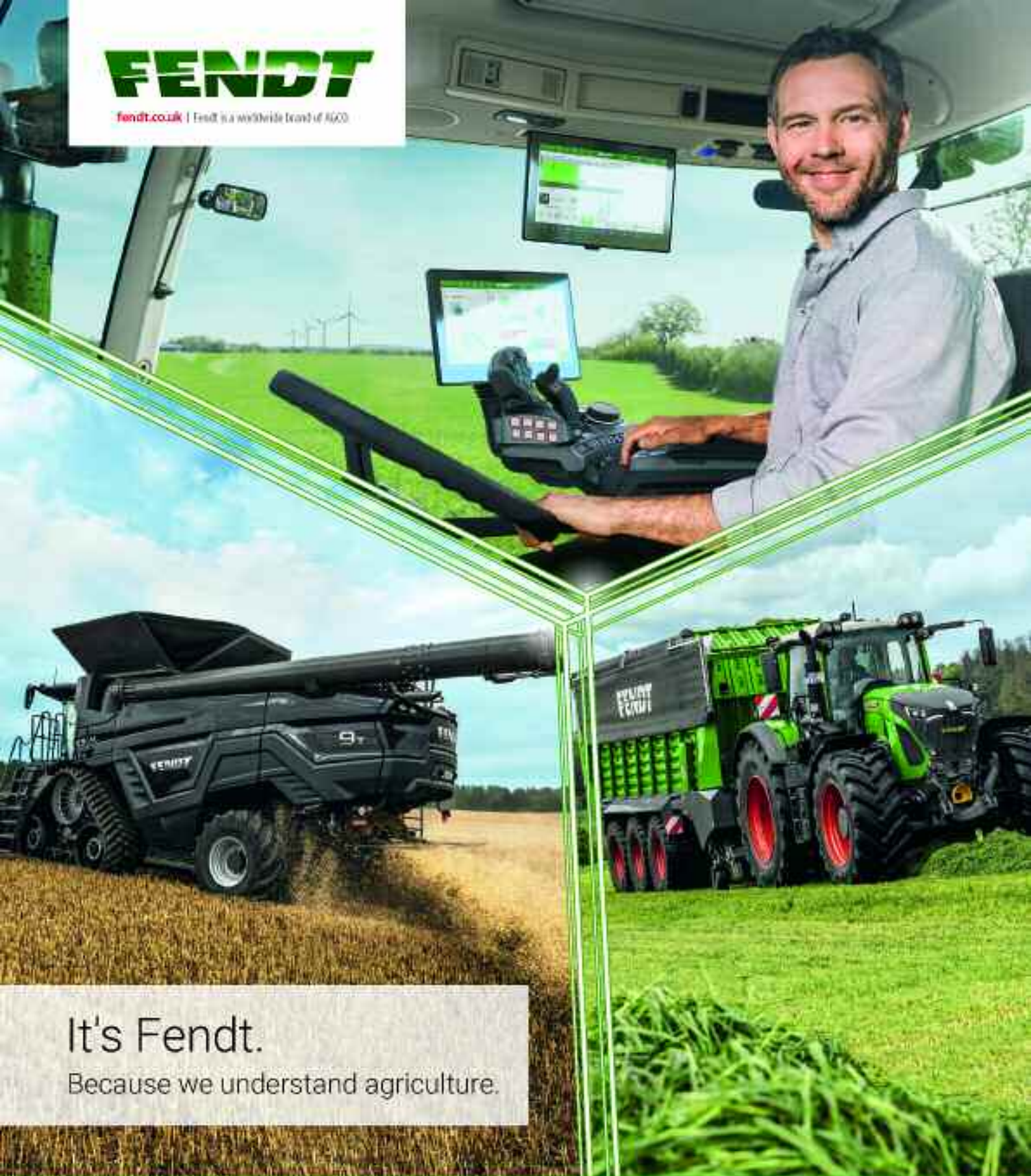
In line with the Vario MT range, ►



Fendt recently announced its tracked tractors are joining the 511hp to 673hp power range with the new Fendt 1100 Vario MT series.

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Case IH is introducing new Quadtrac and Steiger AFS Connect series tractors for the 2021 season.

► the new 1100 models also feature a high-performance hydraulics system with two optional load sensing pumps. “These can supply two separate circuits and reach their maximum flow rate at 1700rpm,” explains Richard. “As an example, the blower of an air seeder requires a consistently low oil pressure and a consistently high oil flow. But the tracked tractor/air seeder hookup requires a high oil pressure with a low oil flow when turning at the headland. With two LS

pumps, the system can always provide the right oil pressure and the right amount of oil thanks to the demand-led control system. This reduces throttle losses and increases efficiency.”

Neat features include the pivoting swinging drawbar and rear power lift. “The pivoting swinging drawbar can be swivelled 28° in either direction, while the pivoting rear power lift with three-point suspension has a movement radius of 12° in both directions,” explains Richard. “This

means the pivot point of the attachment moves to the tractor’s natural pivot point and the attachment runs with much more directional stability in combination with a tracking system.

“If there’s an obstacle on the field dragging the attachment on the side, the attachment can swerve around it without the tracked tractor leaving the track.”

As with wheel tractors, the Fendt VarioGuide tracking system is also now available on the new Fendt 1100 Vario MT series.

Depending on the guidance system and correction services, the tractor can work to an accuracy of 20cm to 2cm with VarioGuide, adds Richard.

Case IH

Case IH is introducing new Quadtrac and Steiger AFS Connect series tractors for the 2021 season, which are set to incorporate new technology designed to ease the data recording and transfer requirements central to modern large-scale farming.

The new Quadtrac AFS Connect tracked tractors comprise eight models ranging from 525-692hp while six models ranging between 469-558hp are to make up the Steiger AFS Connect wheeled versions. ►

John Deere’s Fuel Guarantee pays out handsome rewards

A Norfolk farming company has scooped an impressive £15,684.18 payment from John Deere, for fuel-efficient driving, *CPM* can exclusively reveal. This summer, RG Abrey Farms has been among those to take advantage of JD’s Fuel Guarantee Programme, which since 2016 has helped growers get a handle on the true ownership cost of their tractor.

For those who aren’t familiar with the programme, participating customers and their supplying dealer record a tractor’s actual fuel consumption at the end of a one-year operating period and compare this with the target fuel consumption. This value depends on the average engine load and varies from light to heavy loads, while every tractor model also has its own specific fuel target.

If the total fuel consumption has exceeded the John Deere target level, customers will be refunded by the company, with the total value depending on the local fuel price. If the tractor consumes less than the targeted amount, owners of more efficient machines will still be rewarded, as they will be reimbursed twice the price per litre saved.

That’s how Abreys cashed in on the offer, according to farm manager Tom Forrest — all

part of the business’ ongoing campaign to improve operating performance.

“We were already encouraging drivers to look at their set-up, for example cutting idle time by turning off engines when not in use, but the Fuel Guarantee Programme also gave us access to a tractor optimisation programme within Deere’s FarmSight precision farming package to help further reduce fuel consumption.”

The programme was applied to 21 6R Series tractors, supplied and monitored by local dealer Ben Burgess, of which 12 are 145hp 6145R models and three are 155hp 6155Rs used for a mixture of field and road work.

“Field work for these tractors is mainly irrigation, vegetable harvesting and light cultivations, with no heavy tillage, and haulage is a mixture of short journeys and 40-mile round trips,” he adds. “In general, the 6155Rs do more field work and the 6145Rs more road work.”

“We’re on all narrow wheels for our operations, so tyre pressure is not a significant issue, but there was plenty of useful information about tractor set up. For example, the tractors are all equipped with weight blocks, but we were advised not to carry too much weight unless it was necessary.”

Reviewing actual fuel consumption compared to targets set within the programme also helped focus attention on tractor utilisation, says Tom.

“We were able to consider whether we were using the right tractor for the job. There’s the advantage that none of these tractors are used for heavy cultivations but ensuring that the tractor has sufficient power for the task in hand reduces engine load and thus fuel consumption.”

Within the fleet there were some considerable variations in the fuel savings made on individual tractors. On haulage, one 6145R used 16.31 l/hr compared to the target of 18 l/hr, netting an impressive £734.67 bonus. And in the field, a 6155R made a 2.3 l/hr saving on its 18 l/hr target, equating to a £2355 bonus.

“While some of the savings could be attributed to driver efficiency, they were also related to the type of job. The 6145R in question is used mainly for haulage in winter, but also made some useful savings in the field on irrigation and destoning,” he adds.

“We use a lot of fuel so even a 1% saving is significant, and if we can use technology to achieve this, we’re very keen to do so,” concludes Tom.

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Tractors



Claas has added a host of new features to its Axion 900 large tractor series.

▶ New features include Case's AFS Connect factory-fitted enhanced connectivity as standard, which is powered by three system components: AFS Pro 1200 display, AFS Vision Pro operating system and the AFS Vector Pro receiver.

"When developing the AFS Connect

technology, Case focused on making data capture simple and data transfer seamless to ensure it can help enhance productivity," says Paul Freeman, Quadtrac product marketing specialist at Case IH UK and ROI. "AFS Connect enables two-way data transfer between the machine and the farm office computer

to allow farmers to manage with precision their farm, fleet and data from their office or mobile device.

"The AFS Pro Display is the control terminal which provides comprehensive operating data, and incorporates remote display viewing to allow farmers and — where owners grant permission — dealers to view the screen remotely.

Guidance corrector

"The AFS Vision Pro operating system uses a smart phone or tablet operating style for ease of use and can be controlled via either the touchscreen or a rotary dial according to preference. The AFS Vector Pro receiver streamlines guidance correction options, ranging from base (WAAS and AFS 1) to medium (AFS 2) to high (RTK and AFS RTK+) accuracy levels."

As well as this, the online Case IH AFS Connect portal provides the gateway to managing the new tractor series for the farm owner or manager, bringing farm, fleet and data management from a computer in the office or at any location when using a mobile device.

"With secure data transfer to and from the portal via the cloud, users can log in to AFS Connect to view current field

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operations, fleet information, agronomic data and more, as if they were present in the cab. Owners and managers can also choose to share selected agronomic data down to field level with third parties, such as agronomists," says Paul.

Added connectivity also provides more support features aimed at reducing downtime and keeping operators in the field, he points out. "Remote display viewing allows the farmer/manager or dealer to view exactly what an operator is seeing on the new AFS Pro 1200 display in the cab for problem identification and insight. Dealers can also upload software updates and use remote service support to identify maintenance and service needs without needing to visit the machine."

Claas

Claas has added a host of new features to its Axion 900 large tractor series, including a new Stage V compliant engine, the firm's CEMOS system and a new factory-fitted CTIC tyre pressure control system.

The Stage V models of the Axion 900 and Axion 900 Terra Trac now benefit from an 8.7 litre Cursor 9 six-cylinder engine from FPT. Emission control is handled by a selective catalytic reduction on filter system, with AdBlue injection and enlarged filter and reaction surfaces.

Another new feature is the factory-fitted pre-equipment for CTIC tyre pressure control systems from Claas.

"Powered by the CTIC 2800 auxiliary compressor with an air delivery rate of 2800 l/min, the internal tyre pressure can be quickly adjusted to suit the tractor and — if equipped accordingly — a trailed implement," explains Claas' Steffan Kurtz. "Operation is fully ISOBUS-capable and therefore integrated into the CEBIS terminal of the Axion 900.

If desired, ISOBUS implements can be controlled and monitored via the S10 terminal. The function keys can be assigned freely and individually to tractor and implement functions, he adds.

Claas has also added its CEMOS system to the list of features, making the Stage V models the first to have both CEMOS and the factory-fitted CTIC tyre pressure control system. "CEMOS takes into account not only tractor-specific parameters such as ballast and engine pressure, but also equipment data such as traction boosters. It's also possible to optimise the settings for numerous plough types thanks to data stored in the plough



RG Abrey Farms have been amongst those to take advantage of John Deere's Fuel Guarantee scheme this summer, scooping an impressive £15,684.18 pay-out.

assistant," says Steffan.

"This makes CEMOS currently the most comprehensive and effective process optimiser for tractors for use in the field. Operating CEMOS is child's play, especially since the system actively

explores the potential for improvement and passes on suggestions to the driver.

"The driver can either confirm the suggestions or instruct CEMOS to investigate alternative optimisation possibilities." ■

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