



“ We’re very aware that environmental requirements for farmers are becoming more prolific. ”

Drills

Dynamic drills

Innovation never stands still and with focus moving towards environmentally conscious management, the drill and planter section of the machinery industry is no exception. CPM takes a look at some of the newest products and updates available to the market.

By Melanie Jenkins

Looking across the newest drill launches, it's clear to see that manufacturers are leaning towards producing drills aimed at low disturbance or direct drilling situations, with a conscious shift to machines that can be tasked with multiple purposes to help reduce passes, and thus compaction and cost. Here are some of the latest machines to hit the market.

Bednar

Two new additions to the Bednar stable

come in the form of the Directo No and the Matador Mo. “We’re very aware that environmental requirements for farmers are becoming more prolific,” explains the firm’s Adrian Winnett. “Both of Bednar’s new drills have been designed to reduce soil disturbance, erosion and overall carbon footprint.”

Moving into the realms of direct seeding, Bednar introduced its Directo No at Agritechnica in November 2023. Equipped with a double-chamber pressurised hopper with a 5000-litre total capacity, it can be used for a single crop or dual application with fertiliser. When combined with the Alfa Drill seeding unit, up to three types of seed can be drilled or micro-granulate applied at the same time in a single pass.

“The Directo No is a direct drill that’s been designed to place up to three different products in the soil at once,” says Adrian. “This can help reduce the inherent cost of another pass to apply fertiliser and limit further compaction.”

Seeding coulters are arranged in two rows, with the inter-row distance set at 16.7cm to allow for high throughput. Up to 250kg of downforce through the coulters should provide accurate seed placement even in heavy soils.

Bednar has also released its new

Matador Mo seed drill which is designed for strip seeding. “This has the capacity to place fertiliser deep in the soil and can be used to sow combinable crops with the Corsa CN seed rail, while a maize or sugar beet drill can be added to the tool frame to help users achieve the most from their investment,” explains Adrian.

Featuring a double-chamber pressurised hopper with a 5000-litre combined capacity (40:60 ratio), the drill has been created to manage deep soil cultivation and seeding in one pass. It’s equipped with Active-Mix tines for loosening up to a maximum depth of 35cm with the option of depositing fertiliser in the soil profile or on the soil surface. The tines are equipped with Auto-Reset hydraulic protection with a maximum release force of 870kg (maximum lift height of 30cm). The tines can be equipped with 40mm or 80mm chisels.

The disc working section operates behind the tines and is hydraulically adjustable. This can be set to level soil in front of the off-set tyre packer when drilling cereals or to create ridges for planting oilseed rape.

Horizon

Horizon has taken its increasingly popular DSX drill and produced a mounted version ▶

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Bednar's Directo No is equipped with a double-chamber pressurised hopper with a 5000-litre total capacity and can be used for a single crop or dual application with fertiliser.

► in the form of the MDSX. “The DSX is our flagship product but we’ve designed the MDSX to be a lightweight, compact and cheaper version, suitable for smaller farms,” explains the company’s Charlie Eaton.

Because the MDSX is lighter, horsepower requirement is only 145hp for the 6m version, in comparison, the 6m trailed DSX would require 200hp or more on sloping ground.

The MDSX is available with two different row spacings — 22cm and 25cm, compared with 16cm, 18cm, 20cm and 25cm on the DSX.

According to Charlie, there are reservations related to mounted no-till disc drills and their capacity to force the disc into the soil without the weight of the trailed version. “This is something we tested on the prototypes of the MDSX in the spring, summer and autumn of 2023 and the drill was always able to achieve soil penetration. The undercut angle of the discs at 10° off vertical — like on a plough furrow or cultivation disc — means less

downforce is required.”

However, there’s the option of adding weight blocks to either side of the drill and Horizon is currently developing a hydraulic weight transfer system which can be added to the three-point linkage.

The next step for the firm involves expanding the DSX range to include 8m and 9m versions. “To date, the 7.5m version is the largest drill we’ve made but in no-till systems, operations have to be done at the correct time meaning bigger farmers want higher output from their drills to get the work done.”

The new versions will be available with the same row spacings as the smaller machines to produce high output but on narrow row spacings. “All other features are the same as the current DSX, including the row unit, row cleaners and multiple hoppers,” explains Charlie.

Horsch

The new Avatar SL is the smallest and most manoeuvrable Avatar seed drill with a mounted three-point configuration

designed for precise sowing in mulch seed conditions. The depth control roller of the SingleDisc coulter is intended to ensure regular depth placement even in irregular conditions, while row spacings of 25cm or 30cm allow for mechanical weed control.

Used in combination with the Horsch Partner front tank, there’ll also be the option of a solo version with an 800-litre seed tank in the rear. Hydraulic weight transfer achieves a coulter pressure of up to 240kg per coulter, which is especially useful in harder conditions.

“Looking at the direction of the market, with increasing environmental rules, direct drilling or very shallow cultivations are starting to prove more popular options,” explains Horsch’s Stephen Burcham. “At the moment, the primary way of direct drilling is often with a disc drill, but not everyone likes these as there can be issues with hair pinning, which is why we introduced the Avatar.”

“What’s completely new with the SL is it’s now in mounted form, and the hope is that it’ll open up a different market,” says Stephen. “For those who perhaps don’t want to go full speed into environmental measures it might be that a small, mounted drill suits them better than the trailed option. So the LS will complement and act as an alternative to the trailed Avatar.”

Additionally, two new models join the popular Sprinter tine seed drill range; the Sprinter 6.25 SL and 12.25 SC. The models are aimed at reducing tillage to a minimum but can work well in high amounts of straw residue, as well as in harder soils. To ensure optimised seed-soil contact between the grain and seed furrow, the new Sprinters are equipped with a tine seed coulter that creates a residue-free seed furrow.

Three different interchangeable tine coulters (110mm WideEdge, 21mm ThinEdge and 12mm UltraThinEdge) enable the farmer to additionally react to various conditions.

The new 6m SL mounted model works in combination with a Partner FT front tank, while the 12m trailed SC model is equipped with a 6300-litre double hopper and is available with a triple tank and additional MiniDrill options. Both feature tines with a 25cm spacing and a 180kg release force.

The new Horsch Maestro TX is a compact, single grain seed drill with three-point linkage. It’s equipped with a hydraulic telescopic slide frame on which ►



Horizon's mounted MDSX is designed to be a lightweight, compact and cheaper version of the DSX, suitable for smaller farms.



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Two new models join Horsch's popular Sprinter tine seed drill range – the Sprinter 6.25 SL and 12.25 SC. The models are aimed at reducing tillage to a minimum but can work well in high amounts of straw residue.

► the seeding units are mounted, allowing them to be expanded and contracted as required with working widths from 2.6m to 4.8m. It aims to offer precise placement of the grain and an optimum embedding at operational speeds of up to 15km/h.

It has common row spacings between 45cm and 80cm which can be set and adjusted in 5cm steps, explains Stephen. The Maestro 7 TX can also sow with a row spacing of 37.5cm or 40cm. If the middle row is deactivated, the operator can sow conventionally with six rows and a row spacing of 75cm or 80cm. The optional hydraulic weight transfer system guarantees higher coulters pressure while sowing.

As an option, the Maestro TX

line can be equipped with a 1300-litre fertiliser hopper and, as standard, is equipped with a fertiliser half-width shut-off. The fertiliser is applied with the Horsch metering devices at the single disc fertiliser coulters for underground fertilisation.

"Whenever we design anything we always start big first, so this marks the first time that we've produced for smaller farmers or contractors in this market," adds Stephen.

KRM

Last year saw two developments to KRM's SM-P range of direct tine drills. "Firstly, we introduced a wider row spacing to the range," says the firm's Mike Britton. "The new version of the 6m drill has 24 rows spaced at 25cm



Weaving's new Lynx drill has been introduced to sit between its standard tine drill and Sabre tine drill.

(16cm is standard and still available). This was done in response to increasing demand for mechanical weeding. While it's possible to hoe a 16cm row it's a more practical proposition at a wider spacing, more soil can be moved providing a better result in the field."

Secondly, the firm introduced hydraulic depth setting. "The system replaces the traditional turnbuckles with hydraulic cylinders and spacers to set the depth. This uses the same oil supply as the folding circuit so no additional spools are required on the tractor and it can be retrofitted to existing drills. Simple precise adjustment can now be achieved quickly ensuring optimum results."

For the coming year, KRM will be introducing an 8m version of the mounted SM-P seed drills. This'll be on show for the first time at Cereals and will use the wider 25cm row spacing, providing growers with the opportunity to hoe should they wish.

"The drill will utilise the same pressurised hopper and Isobus controlled electric metering as the rest of the range. Tungsten carbide tipped coulters will create the seed slot and the same double row following arrow with a row of straight



Väderstad's new Seed Hawk 600-900C is a new machine which has been designed around the firm's Seed Hawk knife coulter system.

tines and a row of cranked tines ensure the seed is covered."

Väderstad

Väderstad's new Seed Hawk 600-900C is an entirely new machine which has been designed around the firm's Seed Hawk knife coulter system. With a large hopper split into three compartments with a 7000-litre capacity, it offers seed and fertiliser versatility.

The new machine has a Fenix III metering system to produce an even

product flow to the seed and fertiliser coulters, and is operated via the iPad-based control system Väderstad E-Control. To ensure field performance when seeding directly in heavy crop residues or after cover crops, the Seed Hawk knife coulter can be complemented with a front disc as an option.

Although a similar version of the machine has been on sale in Canada for a number of years, the new machine will be the first of its kind on offer for European markets. ►

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The benefits of the Claydon drill are enhanced by Astley Farms' 4.8m Claydon TerraBlade inter-row hoe, says Luke Rodway.

► Weaving

Weaving's new Lynx drill has been introduced to sit between its standard tine drill and Sabre tine drill. "It's been designed for farmers who want a lower disturbance tine drill for use in low disturbance sub-soiled situations, or if conditions allow, a small proportion of direct drilling," explains the firm's Simon Weaving.

"The Lynx is considerably cheaper than the Sabre but has the same row spacing and high trash flow capacity, just simplified. The wings still pivot for better contour following, but it has smaller tyres and aluminium spacers instead of hydraulic rams."

It includes four rows of auto-reset

tungsten tipped tines with 'z' following harrows mounted to a frame set on wide flotation tyres. There are four depth wheels located in the centre of each wing that control depth and these can be adjusted by lifting the Lynx out of work and changing the aluminium spacers located on the wheel arm.

The 2000-litre hopper on the Lynx is the same as the Sabre, however as standard, it comes with the basic RDS Artemis Lite electric metering system with GPS forward speed monitoring which can be upgraded for Isobus connectivity.

As it's lighter on a more compact frame, the 6m Lynx requires 155hp, while 140hp is sufficient for the 4.8m version, he explains.

KRM
Klinea



The Klinea is the latest innovation in cereals hoeing. It features central tine angle adjustment (without tools) to improve penetration in hard conditions and utilises the new Kipline camera system for automatic guidance. The shares are followed by harrow tines to remove soil from weed roots and prevent re-growth. Optional section control lifts each element independently at the headland for the ultimate in accuracy and efficiency.

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Claydon Opti-Till: farm perspective

The combination of direct drilling and inter-row hoeing has been transformational for Astley Farms. Since introducing the Claydon Opti-Till System timeliness has improved dramatically — staff and tractor requirements have fallen and diesel use has plummeted by 60% — yet soil structure has improved significantly.

An all-organic enterprise, Astley Farms comprises the 567ha in-hand portion of the Astley Estate near Fakenham. Owned by Delaval Astley, Lord Hastings, it's been farmed organically for over 20 years and received awards for its conservation work.

Farm manager Luke Rodway, who's been with the business for four years, having previously worked for one of the estate's tenanted farms, highlights that the owner of the East Anglian estate has a strong interest in regenerative farming.

"The crops we produce are either for seed or go into organic pig and poultry rations. Yields from crops grown on our



The Claydon Opti-Till System has produced numerous benefits at Astley Farms, including a dramatic increase in worm numbers.



The 4.8m Claydon Hybrid drill is used to establish a range of organic crops at Astley Farms.

primarily light soils will never be as high as those on better quality land and are 50% to 60% of what might be expected from a non-organic system under similar conditions. However, the organic premium compensates for that shortfall and, with much lower costs, gross margins are comparable to those of crops produced conventionally."

Luke says their previous plough-based establishment system was slow and expensive with cultivations taking one man most of the winter and drilling a further six weeks. "Claydon Opti-Till really has revolutionised the way we farm because now one man can do virtually everything in two and a half weeks. It's a cheap, simple system which is highly effective, works well and delivers great results.

"Timeliness is a key factor here, even though the soil is mostly light and rainfall averages 650mm per year, but the last two autumns and springs have been wet. Had conventional methods still been used to establish crops we wouldn't have been able to complete all our planned drilling because the results from fields sown in adverse conditions wouldn't have been good enough to justify the investment," he adds.

When Luke joined the business in 2018 it also employed two full-time staff on the livestock side and two men on the arable team. While the system 'worked', the onset of

the pandemic in March 2020 and subsequent lockdown resulted in the elder member of the arable team going into isolation, while the other employee decided to retire.

Things had to change, so during what was an extremely challenging period Luke decided to review the farm's entire system and consider how it could operate more efficiently and reliably.

"Like everyone else we're looking to reduce our cost base and improve our soils so we could get on earlier and benefit from improved timeliness. One of the biggest difficulties in moving away from a system where 162ha were ploughed and pressed each year was finding a drill which would successfully sow crops directly into min-tilled land that couldn't be sprayed off with glyphosate because of our organic approach, and which would work on ploughed land equally well.

"Simplicity was one of the Claydon's key advantages compared with other drills I looked at. Some were too expensive, others too complicated, while some seemed likely to block even in slightly damp conditions. What we wanted was a drill which was well priced, simple, practical, and reliable, yet could cope with a wide range of soil types, conditions, and crops," he explains.

Having seen a Claydon Hybrid drill cereals directly into sprayed-off grassland ▶

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► Luke was certain it would work well. In 2020, when the opportunity arose to purchase a lightly used 4.8m model, he decided to move forward with his plan to reconfigure the business.

Now, the area previously ploughed and pressed by the farm's labour and machinery has been reduced to just 40ha of two-year leys and the job is done by a contractor, part of a raft of changes which has reduced the number of full-time staff from five to just three. In addition to dramatic savings in labour costs, the number of tractors has been reduced from four to two.

"We used to operate two tractors on the arable side of the business — a 210hp New Holland T7.210 and 165hp New Holland T6.180, plus two smaller livestock tractors. I part-exchanged the T7.210 against a new 270hp new Holland T7.270 which works alongside the T6.180, so now

both tractors are fully utilised throughout the year," outlines Luke.

In excellent condition, the Claydon Hybrid had previously covered just 1112ha on a farm in Cambridgeshire and came with a stack of wearing metal. Since then, it's completed over 405ha in three seasons, although annual use will increase to around 202-243ha when 81ha of formerly tenanted land is taken back in hand.

Organic rotation

Fully organic, Astley Farms operates a five-year rotation, comprising three years of arable crops followed by a clover ley which is then ploughed down after two years, the Claydon being ideal for drilling into land which has been inverted.

Cropping includes winter wheat, spring barley in the form of the old but dependable variety Westminster, together

with rye. The farm also grows spring oats, split 50/50 between the well-proven varieties Canyon from Saaten-Union and WPB Elyann, both for seed because the farm struggles to achieve milling quality from any cereal crop.

"All will be drilled with the Claydon Hybrid, which is simple to use and maintain," says Luke. "In addition to our own drilling we've used it for some contract work, mainly sowing beans for neighbouring farmers.

"They like the Claydon because it means that they only have to spray off any green material and then we direct drill the beans 7.5cm deep. With no cultivations required, it's a simple, fast and inexpensive way to establish crops," he says.

George Gill, who does most of the drilling using the farm's 270hp New Holland T7.270, has found the Claydon simpler to calibrate than their former drill. "Equipped with RTK guidance, the tractor would pull the drill much faster than the normal 9-12 km/h, but forward speed is maintained at this level to achieve optimum consistency and accuracy. The following harrow leaves weeds on the surface where they're left to dry out for a few days before rolling."

The 2022/23 season was the first in which Astley Farms grew winter milling wheat. Luke grew 25ha of KWS Zyatt largely because staff at KWS UK's head office were helpful in answering his questions about growing the crop under an organic system.

"With much less labour now available the aim was to further spread the workload and produce a tall crop which would help to smother weeds," explains Luke. "Zyatt developed strongly, looking so good throughout the season that it was impossible to tell it was organic, and yielded very well, producing an excellent gross margin."

The benefits of the Claydon drill have since been enhanced with the purchase of a new 4.8m Claydon TerraBlade inter-row hoe in 2021 from TNS at Fakenham. Two passes through the winter wheat are carried out during the autumn, followed by a further three in the spring, starting as soon as conditions allowed. The TerraBlade has been highly effective and covered about 486ha last season.

"There's no question that direct drilling and inter-row hoeing with the Claydon Opti-Till System has revolutionised the way we farm, and the benefits are increasingly evident the more that we use it," concludes Luke. ■

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