



“It’s a well-proven system.”

# Power and performance

## Machinery Combines

While optimising output is key, is bigger always better when it comes to combines? CPM takes a look at the latest developments in the market.

By Charlotte Cunningham

As harvest begins to draw to a close for another season and combines prepare for their winter break, it marks an apt time for growers to consider the performance of their current model.

Are you getting the output you hoped for? Or could you benefit from upgrading to something kitted out with all the latest precision technology?

Below, CPM highlights some of the most recent launches and updates.

### Claas

Hot off the press is the launch of Claas’ new Trion combine range which the firm says is designed to ‘fit your farm’.

The launch replaces the outgoing Tucano series, and completes the total replacement of Claas’ combine offerings, explains Adam Hayward. “We launched the new Lexion range in 2019 and added to that last year. It was successful and it had a great selling year. But when we launched those new ranges, it did bring us up a level — it extended our performance capabilities.

“This effectively meant that if you had an existing combine you didn’t have a direct replacement — you’d have a step-up.”

But not every grower has a requirement to go bigger, acknowledges Adam. “We know some people want the same size machine, or perhaps more automation on a smaller machine. We were very aware of this, so in the background we were working on what has now launched as the new Trion range.”

With flexibility in mind, the new series encompasses a whopping 20 models, including conventional five and six-straw walker combines as well as single and twin rotor hybrids — plus Terra Trac and Montana hillside versions.

The word ‘Trion’ derives from physics

and is used to describe a combination of more than three elements. So in this scenario, the ‘Trion’ references the combination of the threshing, the separation and the cleaning systems which sets the new range apart from previous offerings, reckons Adam.

Despite a great deal of choice within the range itself, something featured in all models is Claas’ APS primary threshing ▶



The launch of the Trion replaces the outgoing Tucano series and completes the total replacement of Claas’ combine offerings.





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The new Trion series encompasses a whopping 20 models.

► system — designed to thresh up to 90% of grains. “We’re using a threshing cylinder that we’ve used before on a previous generation of Lexion,” he explains. “When we looked at the Tucano range, it had a 450mm threshing drum, but going

forward with the Trion’s we will see this expanded to 650mm.

“It’s a well-proven system.”

As a result, the concave area is also greater. “The front concaves are also interchangeable and the speed of all

three drums is synchronised and adjusted via Cebis.

As well as the threshing cylinder, Claas has also incorporated the same drive system found on the new Lexion — which is itself based on the system used within the Jaguar forager.

But rather than thinking that the new Trion is simply an old Lexion in new clothes, Claas says it’s more a case of making use of the best of technology available in its latest offerings. “What’s more, to keep maintenance to a minimum, the drive system means that there are now six less belts on the Trion hybrid models and three less on the straw walker machines compared with the previous Tucano range,” explains Adam.

Looking at secondary separation, all five and six-straw walker Trion 500 and 600 models come with the Multifinger Separation System (MMS) as standard, which is designed to ensure greater separation efficiency. ►

## Trion offerings

Trion	Primary separation	Secondary separation	Max. engine output (ECE R120)	Grain tank
520	APS	Five straw walkers	258 hp	8000 litre
530	● 1420mm channel width		306hp	9000 litre/306hp (10,500 litre)*
530 Montana	● 450mm pre-accelerator			
530 Terra Trac	● 600mm threshing drum			
640	APS ● 1700mm channel width ● 450mm pre-accelerator ● 600mm threshing drum	Six straw walkers	306hp	9000 litre
650			354hp	10,500 litre
650 Montana				
650 Terra Trac				
660		408hp	11,000 litre	
660 Montana				
660 Terra Trac				10,500 litre
720	APS ● 1420mm channel width ● 450mm pre-accelerator ● 600mm threshing drum	Roto Plus single rotor	367hp	10,500 litre (12,000 litre)*
720 Montana				10,500 litre
720 Terra Trac				10,500 litre (12,000 litre)*
730		408hp	11,000 litre (12,000 litre)*	
730 Montana				11,000 litre
730 Terra Trac				11,000 litre (12,000 litre)*
750	APS ● 1420mm channel width ● 450mm pre-accelerator ● 600mm threshing drum	Roto Plus twin rotor	435hp	12,000 litre
750 Montana				11,000 litre
750 Terra Trac				12,000 litre

\*optional





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# Combines



The Trion range is compatible with the full range of Cerio or the new Vario range of auger-type cutterbars, plus the Convio and Convio Flex draper-type cutterbars.

► Trion 730/720 Hybrid models come with a single 4.2m long and 570mm diameter rotor with six grates, while the larger Trion 750 has twin 4.2m long and 445mm diameter rotors with five grates. A new feature for combines this size is the hydraulic adjustment of four rotor flap

'bomb doors' and rotor speed is infinitely adjusted independently of the APS system using Cebis.

In terms of the cleaning system, this too has been influenced by the Lexion. "The Trion range features the Jet Stream cleaning system six or eight turbine fans



Fendt recently announced updates to its Ideal combine, meaning that from 2022, models will have more options in lane guidance and straw distribution.

— meaning this is now used across the complete Claas range," explains Adam.

In the guts of the Trion series is an 8.9 or 6.7 litre Cummins six-cylinder Stage V engine. "These have been chosen not only on account of the optimum range of power outputs for across the whole Trion range, but also due to their ideal weight, the level of engine technology they provide, the fact that they are an ideal size for the combine and their layout means that they are easy to access and maintain," he notes.

As standard, all Trion models come with Dynamic Power, which by reducing engine power output when not under load — for instance when not running the chopper or unloading — can cut fuel costs by around 10%, claims Adam. "The rated engine speed is just 1900rpm dropping to 1650 for road travel, so further helping to save fuel."

Tank wise, sizes range from 8000-12,000 litres on the Trion 750. "The unloading auger swings through 105° to boost visibility, while unloading rates range from 90-130 litres/sec."

At the back of the combine, a number of straw-chopper options are available, from a standard mechanically-controlled chopper through to the advanced electronically-controlled radial power spreader chopping system with deflectors for wind compensation.

In addition to the Standard Cut chopping unit, which on narrow-body Trion 700 and 400 models has 52 knives and 64 knives on the Trion 600, there's the option of the Special Cut chopper with 72 or 88 knives. ►



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# Combines



The CH7.70 is still very much in vogue for New Holland.

► There are also options when it comes to the cutterbar. The Trion range is compatible with the full range of Cerio or the new Vario range of auger-type cutterbars, plus the Convio and Convio Flex draper-type cutterbars, in widths up to 12m.

Find more details on updates to the Vario range on page 62.

## Fendt

Fendt recently announced updates to its Ideal combine, meaning that from 2022 models will have more options in lane guid-

ance and straw distribution.

Looking firstly at lane guidance, until now growers running the Ideal combine have been able to use the VarioGuide tracking system and a NovAtel or Trimble receiver as standard. But from next year, there will also be the option to add the correction signal RTK pre-installed at a track accuracy of 2cm.

Other updates include a redesign of the Ideal 9's cleaning system, which Fendt claims will help to boost the machine's overall performance even further, with improved cleaning results.

In the new cleaning system, the grain drops down to the top sieve through two curved double-drop steps. Thanks to the curved shape, the laws of physics see the heavy grains gather in the lower section while the lighter parts accumulate above.

The curved steps of the cleaning system provide a wider air outlet, which can significantly increase the air volume

## Connectivity boost

Combines from the Fendt Ideal, Fendt C and Fendt L series can now be equipped with the central Fendt Connect telemetry system — helping users manage their fleet from wherever they are and optimise machine settings.

According to Fendt, growers can use either their PC or smart device to view and analyse their own machine data, including machine position as well as other key statistics such as engine speed, fuel and AdBlue consumption and machine speed.

The firm reckons this will help users plan harvesting processes faster and more efficiently. What's more, Fendt Ideal operators can view harvest data including yield, moisture and

machine settings to check machine utilisation more precisely.

Fendt Connect also unlocks additional services offered by dealerships, says a spokesperson for the firm. "With the consent of the vehicle owner, the dealer can access the machine data. A quick overview of upcoming service intervals or checking error codes makes maintenance work on the machine easier and reduces downtime during harvesting."

The customer always retains ownership of their machine data, while operating statistics and agronomic data are neither stored nor transmitted, it adds.

Fendt Connect comes as standard on the



Fendt Ideal and is now available as an optional extra for C and L series Fendt straw walker combine harvesters.

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and make the cleaning process even more efficient. With two drop levels, most of the short straw and chaff is separated on the first level.

The remaining non-grain components are separated on the second. The cleaning system works over four sections, two return floors ensure even distribution and coverage across the preparation floor.

## New Holland

While not totally brand new, the CH7.70 is still very much in vogue for New Holland. Launched last year, many haven't had the opportunity to see it in action due to COVID.

According to Nigel Honeyman, the CH7.70 combine's twin rotor separation with threshing technology offers greater flexibility to customers, as part of the firm's new Crossover Harvesting concept.

He reckons that the Crossover combine sets a new benchmark in capacity for mid-range combines, delivering optimum grain and straw quality — but what exactly does this new concept mean in practical terms?

"The new Crossover technology delivers up to 25% higher throughput than a conventional combine in this segment," he explains. "The two-drum threshing system features a 600mm diameter drum — the largest in the class — with a reinforced, heavy-duty build, designed to deliver a high standard of threshing performance."

A neat feature is the New Holland 'Triple-Clean' cascaded cleaning system, which Nigel says boosts cleaning capacity by up to 15%, with the addition of an extra cascade in the centre of the grain pan. "The double-flight cross auger transfers grain to the elevator faster, which increases throughput."



*In the guts of the Trion series is an 8.9 or 6.7 litre Cummins six-cylinder Stage V engine.*

In the heart of the combine is a Cursor 9 engine which develops 374hp — 34hp more than the CX6.90.

The CH combine has also been designed to deliver easy maintenance, with only four greasing points making daily maintenance even quicker and the large service door on top of the straw hood provides easy access, notes Nigel. "This maintenance-free after-treatment system, together with the low fuel consumption, results in extremely low operating costs.

"In addition, the standard three-year extended warranty (1200 engine hours) covering the engine, driveline, and after-treatment system, together with the long, 600-hour service intervals, further contributes to the combine's low operating costs." ■



*New Holland's Crossover technology is claimed to deliver up to 25% higher throughput than a conventional combine in this segment.*



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