

Axial-Flow 250 combine updates protect quality and boost productivity

New models replace 240 series as flagship combines for 2019 / AFS Harvest Command™ automation minimises losses and grain damage, maximises output / Feedrate control system adapts key machine elements to crop volume / Grain camera continuously analyses quality / Sieve pressure sensor technology and auto fan speed maintain ideal pressure as conditions change



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Featuring a number of new automated features designed to allow operators to more easily maximise machine performance in terms of crop throughput and quality, Case IH is launching three new 250 series Axial-Flow combines for 2019, replacing the existing 7240, 8240 and 9240 models.

“The 250 series Axial-Flow upgrades focus on improving both combine and operator productivity,” explains August von Eckardstein, Case IH harvesting product marketing manager for Europe, Middle East and Africa.

“Our aim has been to aid decision-making and make front-to-rear settings easier for a particular desired outcome. In this way, the combine can not only help to enhance an experienced operator’s performance, but can also help a less-experienced one to quickly gain confidence and get the most from the machine.”

New AFS Harvest Command™ automation

At the heart of the changes for the new 7250, 8250 and 9250 Axial-Flow combines is AFS Harvest Command™ automation. This completely new technology package utilises sixteen sensor inputs to continuously monitor the machine, and adjusts seven different settings to maximise combine performance. Managed through the in-cab AFS Pro700 terminal, the automation system is currently capable of working in wheat, oilseed rape/canola, corn/maize and soybeans. Just a few selections according to crop type and conditions allow the operator to set the machine to perform to a desired outcome.

The basic version of AFS Harvest Command™ features the proven Automatic Crop Settings (ACS) system. This adjusts operating items such as fan speed and concave clearance according to the crop type selected on the AFS terminal screen, eliminating the need to make individual element settings.

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The operator is able to adjust the combine on the go and save the settings for future use.

The next version, with Feedrate Control, adjusts ground speed based on crop load to cater for a desired outcome – performance to control losses, maximum throughput, or fixed throughput. The operator sets the target maximum engine load and ground speed, and Feedrate Control will operate up to those limits. The new Feedrate Control system more accurately controls ground speed based on crop and ground drive load. Feedrate Control, which can be used as a stand-alone function, works in all crop types.

The top specification option is full AFS Harvest Command™ automation, which automatically makes threshing and cleaning system adjustments based on the same desired outcomes as Feedrate Control, with the addition of grain quality monitoring. This uses camera-based technology and sieve pressure sensing to provide further guidance to the machine's automatic adjustment process to minimise impurities in the grain sample and maintain the best grain quality, a trait for which the Axial-Flow combine has earned its reputation.

“The AFS Harvest Command™ automation grain camera utilises a patented multi-spectral light emission – visible and invisible – to more accurately identify broken grains and impurities,” says August von Eckardstein.

“This patented technology helps the grain camera more accurately monitor sample quality, illuminating it with UV, blue, green, red and infra-red light. Combining the five light spectrums provides enhanced detection of the exposed starch in broken grains. The AFS terminal alerts the operator if dirt affects camera clarity.”

With full automation, AFS Harvest Command™ can be used in four different ways. In all cases, the operator sets a maximum target engine load and maximum ground speed for the combine to then operate in:

- Performance mode: the combine operates at a speed to ensure an acceptable level of grain loss from the rotor and cleaning system.
- Fixed Throughput mode: the combine maintains a target throughput by varying its speed, and adjusts settings to minimise losses.
- Maximum Throughput mode: the combine operates up to the speed or power limit set by the operator, while adjusting settings to minimise grain loss from the rotor and the cleaning system.
- Grain quality mode: the combine adjusts settings to maintain a targeted grain quality and impurity level, while also minimising losses.

After selecting the 'Basic' tab on the AFS screen, the operator enters crop type, desired outcome/strategy, maximum ground speed and maximum engine load. The system is then engaged and harvesting begins. Fine-tuning is possible via an Advanced tab that allows, for example, initial

start-off settings to be altered, the frequency of automatic alterations to be adjusted, and ease of threshing to be accounted for.

“AFS Harvest Command™ automation is not designed to replace operator decisions, but to enhance them, identifying the factor limiting combine performance as conditions change, displaying it and making adjustments to address it,” says August von Eckardstein.

“Experienced operators can further enhance output and grain quality, and inexperienced ones can more quickly achieve productivity comparable to an experienced operator. For both, AFS Harvest Command™ means less need to worry about factors such as losses, fan speed and rotor speed, which allows greater focus on header position and unloading.”

Rotor cage and sieve upgrades

Axial-Flow 250 series combines with AFS Harvest Command™ automation are fitted with in-cab adjustable rotor cage vanes, actuated from a right hand console switch when not using the automation facility, or automatically adjusting themselves when AFS Harvest Command™ automation is engaged. The rear six vanes are linked, include a greater range of adjustment, and can also be manually adjusted from ground level. By changing the pitch of the vanes, the crop will move faster or slower through the rotor cage, tuning threshing and separation performance to crop conditions for improved efficiency.

In conjunction with upper and lower sieve control, the full AFS Harvest Command™ automation package also features new in-cab pre-sieve adjustment, allowing AFS Harvest Command™ automation to automatically adjust all sieve settings according to feedback from the loss sensors, grain camera and sieve pressure sensors. This can also be manually activated when AFS Harvest Command™ is not in use. The in-cab adjustable pre-sieve is also available as a stand-alone option, which includes a remote switch allowing setting from the removable side covers.

Unique sieve pressure sensors provide AFS Harvest Command™ automation with sieve loading data, allowing the system to understand impending losses and make adjustments before they happen. These sensors help the system discern the difference between sieve overload and blow-out losses, and adjust fan and sieve settings accordingly, preventing grain loss when exiting or entering the crop at the headland or stopping the combine in the field. Working together with the Auto Fan option, this also helps prevent losses before they occur by detecting sieve load and combine inclination. The fan and sieves work in conjunction with each other to maintain an ideal operating setting and sieve pressure.

“As a result, the sieves become much more efficient, doing a better job of producing clean grain and with much less risk of becoming overloaded,” says August von Eckardstein.

Transmission changes

A new hydrostatic transmission, featuring a field and a road mode and on-the-move two-speed range

control, provides increased traction and means there is no need to stop and shift while working or travelling on hills. Operated via a scalable multifunction handle speed controller, it features a closed-loop speed control which maintains the set speed in changing ground conditions. Maximum respective speeds in range one and range two are 18km/hr and 40km/hr, although reduced maximums can be set according to operator preference and field conditions.

“With a reduced need to change ranges, and controllable maximum speeds for, say, in-field travel to the headland, downtime is cut and harvesting time increased,” August von Eckardstein points out.

Complemented by updated hydraulic drives, the transmission upgrade boosts gradeability when road travelling by 36 per cent. Meanwhile, a new differential lock upgrade replaces the previous mechanical pedal with a floor-mounted electrical button, and braking moves from an external disc to internal oil-cooled brake, reducing required pedal pressure for the same braking effort and enhancing the cooling required in situations where continuous braking is needed.

Improvements to X-tra Chop package

The X-tra Chop straw chopper package is now fitted with a new remote switch for ground-level spreader board actuation, to make accessing the engine deck easier for fuelling and maintenance.

Feeder/intake elevator upgrades

In addition to the existing feeder/intake elevator lift capacities of 4.5 tonnes and 5.2 tonnes, a new 6.1 tonne lift capacity is available on the largest Axial-Flow models, to enable them to handle 13.5m draper heads and 18-row corn heads. Factory-fit dual lateral tilt can now also help to provide enhanced control of 13.5m draper heads.

A new optional in-cab-controlled face plate fore-aft feature allows the operator to alter the header fore-aft angle, with a total of 11.9 degrees of angular tilt to improve harvesting efficiency in both low-growing crops like beans and high-growing crops. Header height control function upgrades mean improved responsiveness and flotation, plus adjustable return-to-cut and resume lower rates.

Ground Speed Adaptive Sensitivity (GSAS) automatically adjusts header height sensitivity as forward speeds increase and decrease, to keep the header stable yet responsive. As an example, when sensitivity is set high for changing terrain and the operator slows combine forward speed, the system sensitivity will also drop in the background to keep the header stable. The sensitivity setting, though, will remain at the high set-point, so when the operator is able to return to the previous forward speed, the header remains responsive.

AFS Connect availability

Our factory-fit telemetry, AFS Connect, allows two-way file transfer between combine and office PC via a web portal. All combines are prewired and have antennae to receive the required modem. Where

a combine is ordered as telematics-ready, it will have the modem fitted. All that is required for the full telematics version is an unlock code. The modem is initialised from the factory, while the subscription must be purchased by the dealer.

“Model year 2019 Case IH 250 series Axial-Flow combines offer significant technology, durability and productivity enhancements,” says August von Eckardstein. “At the same time, they preserve the simplicity, grain saving and grain quality performance for which Axial-Flow has a well-established reputation.”

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