



## AXION 900 reaches new power level

Previewed at the SIMA Show, the new CLAAS AXION 900 range of tractors will make their official debut at this year's Agritechnica.

The introduction of the new AXION 900 range, with power outputs from 320hp up to 410hp, marks CLAAS' entry into a completely new market sector. The AXION 900 is a totally new design which rounds-off the CLAAS range of high horsepower tractors.

In designing the new AXION 900 range, the CLAAS design team has taken into account all aspects of the work the tractor will be expected to do, combined with expectations regarding running costs and the need to meet the latest emissions regulations, in order to achieve the CLAAS goal of making a significant contribution towards efficient, eco-friendly agriculture.

To enable this, CLAAS has established CLAAS Power Systems (CPS), which brings together experts from the different divisions within CLAAS to share information and ideas in order to develop products that best meet customer expectations in terms of performance, reliability and running cost, but also regulatory and environmental requirements.

In order to meet the forthcoming Tier 4i emission regulations for engines of between 176 and 760hp, by not being committed to a specific engine manufacturer, in deciding whether to use EGR (Exhaust Gas Recirculation) or SCR (Selective Catalytic Reduction) engine technology, CLAAS is free to consider which technology is best suited to current and future machines.

Rather than just focussing on the engine and emissions, for all products that fall within these emission requirements CPS take into account all practical aspects of the machine, such as application, transmission, hydraulics, power transmission, etc and from there seek to achieve an optimum match between all components.

### Design

In common with all CLAAS tractors, the AXION 900 has a long wheelbase (3.15 metres) for optimum weight distribution and traction, with a compact overall length of 5.56 metres.

The AXION 900 is built around a fully integral frame that incorporates a self-supporting crankcase and embedded sump. This robust design provides the possibility to fit a 6.8t front linkage without the need for any additional bracing, so maintaining maximum manoeuvrability.

Operators benefit from a brand new four pillar cab design and for optimum comfort will enjoy the new specifically developed four-point mechanical cab suspension system, or the new highly advanced Z-ACTIV cab suspension which utilises a combination of mechanical, pneumatic and intelligent damping systems, providing the ultimate in comfort, and adjustable at the touch of a button from the seat. There is also the option of three different suspension seats – including one with automatic ventilation, plus front and rear linkage vibration damping and the PROACTIV front axle suspension.

Built into the right-hand armrest are all the main controls needed to operate the tractor. The main functions are controlled using the CMOTION control which fits comfortably in the right hand. Using just three fingers, all the main controls, such as direction of travel, driving range, Cruise Control, hydraulics, rear linkage, CSM headland management and GPS steering can be controlled, plus a couple of additional function switches allow additional tasks to be allocated.

In front of this is the CEBIS terminal with 21cm screen and an ELECTROPILOT joystick for the hydraulic controls. CEBIS is quickly and easily accessed and used via a push/turn dial and an ESC key. In addition there is direct access to the spool valves, speed ranges, Cruise Control and function keys.

The Cab has been mounted forward of the rear axle, which provides benefits in terms of comfort, but also enhanced visibility over wide implements. The B pillars are mounted slightly forwards thus further improving all round visibility. The cab also features a one piece windscreen

### Engines

A total of four AXION 900 models will be available, all of which are powered by FPT Cursor 9, 8.7 litre 6-cylinder 24-valve engines with SCR technology that have maximum power outputs of 320hp, 350hp, 380hp and 410hp.

The engine is managed by an advanced CLAAS engine electronic management system, which is designed to provide optimum fuel economy with maximum performance and torque.

The engine features an all-electronically managed cooling system. A visctronic fan provides "as required" cooling, so reducing power requirement, and helping reduce noise and fuel consumption.

To ensure that forward visibility is not compromised, all the SCR components are located in protected positions. The catalytic converter is integrated under the bonnet whilst the 60 litre Ad Blue tank® has been incorporated into the 700 litre fuel tank. This makes filling extremely convenient and easy, but also serves to insulate the tank, which is also heated by the engine coolant.

### Transmission

In order to maximise outputs and so reduce fuel consumption per hour, the CPS team have selected a split-power, ZF ECCOM 3.0 transmission. This has four automatically engaged mechanical ranges to ensure the maximum amount of power is transferred to the AXION 900's rear axle.

The AXION 900 is fitted with a GIMA rear axle that has been exclusively designed for CLAAS and can be fitted with 2.15m diameter tyres, whilst the PROACTIV front axle can take tyres of 1.70m diameter.

The transmission is controlled using the CLAAS CMATIC intelligent transmission management system as used on the AXION 800 and is designed to ensure a high transference of power to both the rear axle and the PTO, with minimal fuel consumption. Speed range as standard is from 0.05kph up to 50kph, which makes the transmission ideal for a wide range of field and transport operations.

The main transmission control functions are operated using the new CMOTION control unit. Using a button on the main control panel, the driver also has the option of selecting three operating modes, Automotive; CMOTION or Manual, which can be selected whilst the tractor is moving.

In Automotive mode, the operator uses either the foot throttle or cruise control to set his forward or reverse speed. The CPS control module then manages engine revs in accordance to what is required, providing optimum fuel efficiency. The CMOTION mode provides a similar system of operation albeit speed is controlled via the CMOTION lever

The driver also has the option of three speed range driving modes, which can be set-up and stored using CEBIS, then activated on the move and can be used in both forward and reverse. In addition, a Cruise Control facility allows the operator to select a preset speed in each of the three ranges, which will be useful where a precise speed has to be maintained or at the headland.

The CMATIC transmission control also incorporates three speed reducing modes. In Normal, as the accelerator is released, the engine braking will slow the tractor. If the CMOTION lever is pushed forwards when the throttle is released then engine braking is reduced and 4-wheel drive is not activated providing more of a rolling stop. Enhanced deceleration can be achieved by pulling the CMOTION lever back when the pedal is released, with the result that engine braking is increased and 4-wheel drive engaged. This range of options ensures that safe operation can be maintained at all times. In addition, when hauling heavy loads, the aggressiveness of the engine braking system can be altered and the tractor/trailer brakes pre-tensioned for better control on hills.

#### PTO , hydraulics and linkage

To accommodate the wide range of operations that the AXION 900 is likely to handle, three different packages of PTO shaft speeds can be specified, 1000, 1000+540 Eco and 1000+1000 Eco. Speeds are selected via a control panel on the 'B' pillar. If required the PTO can be automatically controlled, according to linkage height.

The factory fitted front linkage and PTO is fully integrated into the tractor frame and runs at 1000rpm at an engine speed of 2000rpm and has a maximum power output of 204hp, making this ideal for implements such as a front mower.

The AXION 900 has a 150l/min or 220l/min load sensing hydraulic system and up to six spool valves can be fitted at the rear and two at the front. For maximum convenience, the spools can be operated using either rocker switches on the armrest, via the ELECTROPILOT joystick or they can be allocated function buttons on the CMOTION control, and all can be individually adjusted.

The rear linkage on the AXION 900 has a maximum lift capacity of 11 tonnes. This is set-up using a panel on the 'B' pillar alongside the driver's seat, and can be controlled either from this panel or via a raise/lower button on the CMOTION.

A front linkage with capacity of 3.3 tonnes or 6.8 tonnes is available, which is fully integrated into the frame and so requires no further reinforcement.

### Standard Specification

As standard, the AXION 900 is equipped to a high specification to ensure optimum driver comfort and convenience over the long hours that a tractor of this size is likely to work.

In the cab there is a wide range of connection options, including ISOBUS, to ensure that all types of terminal can be easily utilised. The cab also features full air-conditioning and optional automatic climate control, plus a refrigerator box is located under the passenger seat.

An extensive lighting package is available with up to 20 work lights for 360° illumination and includes step lighting, memory function for the last configuration and a time delay.

### EASY and TELEMATICS

The AXION 900 is ready for use with the full range of CLAAS EASY (Efficient Agriculture Systems) steering and electronic management tools.

The CEBIS Mobile ISOBUS terminal has a 6.4in colour screen and provides a complete solution for steering and implement control. The terminal can also be used with the full range of CLAAS GPS steering options, or with the unique CAMPILOT digital steering system, and acts as an interface to allow data to be transferred via a USB stick to the farm office.

The AXION 900 can also be specified with the CLAAS TELEMATICS performance monitoring system. All aspects of the tractor's performance, settings and position are automatically uploaded to a web server. Using a computer or any hand-held web-enabled device, this data can be analysed and compared to ensure optimum output, and if need be the tractor can also be accessed by the dealer for remote diagnosis.

### Performance

The performance benefits of the AXION 900, thanks to its highly efficient engine and transmission, have been apparent in field trials comparing the AXION on a like for like basis with similar sized tractors.

In these comparative trials, overall output in terms of area covered per hour was markedly higher and this, combined with the efficiency of the engine, made the AXION 900 the most fuel and Ad Blue® efficient of all the tractors tested. This confirms that the CPS team at CLAAS has been able to achieve its aim of creating an efficient, environmentally friendly tractor, whilst also providing the high, cost effective performance that customers require and expect.

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