



New CLAAS square baler above the QUADRANT series

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CLAAS CUBIX: Gold award-winning next-generation square baler with revolutionary drive concept

As one of the world's leading manufacturers of agricultural balers, CLAAS is presenting a next-generation square baler with AI-supported bale density control, a revolutionary drive concept and an innovative double-loop knotter for the first time at Agritechnica 2025. The new CUBIX stands for maximum bale densities and groundbreaking precision in bale weights, combined with hourly outputs of up to 70 tonnes.



70 tonnes per hour throughput with consistently high bale densities of up to 235 kg/m³ in straw, made possible by a new drive concept, AI-supported driver assistance systems, a new pre-chamber pick-up and a new double-loop knotter: CLAAS received one of two Agritechnica Innovation Awards in gold at Agritechnica 2025 for the innovative overall concept of the CUBIX.

A new era for square balers

CLAAS has been making history in the development and construction of balers for more than 100 years. Since its first patent, the legendary knotter hook in 1921, CLAAS has been driving forward development in this product area as one of the world's leading suppliers, shaping the industry for decades with developments such as VARIANT, ROLLATEX NET BINDING and QUADRANT.

At Agritechnica 2025, CLAAS is now presenting a next-generation square baler with a revolutionary drive concept, AI-supported bale density control and an innovative double-loop knotter. The CUBIX, with bale dimension of 120 x 90 cm, combines high throughput with consistently high bale densities. In practice, this new concept achieves a throughput of up to 70 t/h when baling straw (up to 50 t/h with FINECUT cutterbar) and consistent bale densities of 210 kg/m³, peaking at up to 235 kg/m³.

The innovative overall concept was awarded a gold Agritechnica Innovation Award by the DLG's Innovation Commission. The CUBIX will herald a new era in square balers as an addition to the QUADRANT product range. With a channel size of 120 x 90 cm, it will go into series production in the fourth quarter of 2027 after pre-series production in the 2026 and 2027 campaigns.

Maximum performance with maximum precision

This output of up to 70 t/h is made possible by, among other things, the main gearbox integrated into the frame with a straight power flow. The innovative drive works with two flywheels, each weighing 202 kg, arranged longitudinally to the direction of travel, which store a lot of drive energy and thus ensure a smooth pressing process. Thanks to an intelligent sequential switch, little drive energy is required to start the CUBIX: first, the two flywheels are started one after the other. Once they have reached their target speed of 1,650 rpm, the ram and finally the rotor are switched on. Power is transmitted from the tractor PTO shaft to the flywheels via a main gearbox integrated centrally in the drawbar and two power belts – one per flywheel.

In the event of overload during operation, both flywheels are immediately disconnected from the drive by electro-hydraulic multi-plate clutches. At the same time, the ram is actively braked. This eliminates the need for cam clutches and shear bolts, which prevents damage caused by foreign objects and enables the machine to restart quickly.

Further power transmission to the secondary units is carried out exclusively via efficient, low-loss and low-wear closed planetary gear. The ram, rotor and rake drives are switched individually via integrated clutches. In addition, when the machine is switched off, the ram is stopped at 35 degrees from the rear dead centre so that it first performs an idle stroke before the next compression stroke when the machine is restarted. This protects the power train of the CUBIX and the tractor.

New pre-chamber with pre-tensioned claw coupling

Another new feature is the mechanically operated single rake for the pre-chamber, which is switched via a claw coupling running in an oil bath and alternately performs a filling stroke and a raking stroke. When the filling stroke is engaged, the claw coupling is preloaded, which ensures high dynamics and uniform, firm filling up to the upper area when filling the press chamber (). Since the drive of the claw coupling is connected to a stepper gear, the gear shift occurs only when the claw coupling is at a standstill.

Pressure control with AI assistance system

Interconnected torque sensors in the rotor and rake gearbox detect the gearbox loads and continuously regulate automatic assistance systems, for example for AI-supported bale density control and bale length control. If an impending overload is detected in the torque curve, the CUBIX automatically

decouples the rotor and pick-up before a blockage can occur. This prevents up to 80 percent of downtime due to breakdowns, and even inexperienced operators can use the baler to its full potential. The CRUISE ADVISOR utilisation display in the tractor or ISOBUS universal terminal such as CEMIS 1200 provides support.

TIM driving strategies density or throughput

Another assistance system controls the speed of the tractor-baler combination via TIM (Tractor Implement Management). The operator can choose between the driving strategies "Maximum density" and "High throughput". Depending on the drive train utilisation and material properties determined by AI-supported software based on the torque sensor values, the driving speed is then automatically regulated in order to constantly maintain the optimum performance level for the target ranges of density and throughput.

With the additional AI-supported control of press density and bale length, deviations in bale weights of no more than two percent are achieved in practical use. This new level of precision with absolutely homogeneous bale weights enables the full and legal utilisation of straw transport on the road without the risk of overloading, while making full use of the possible total weight.

New double loop knotter without twine waste

A new knotter developed in collaboration with the Schumacher Group produces two loop knots per tying operation, combining the advantages of McCormick and Deering knotters without their respective weaknesses. Thanks to the double loop formation, the tensile strength of the twine is retained at around 70 per cent, which is significantly higher than that of Deering knotters. This means that either higher compaction or more economical twine can be used with the same strength. With twine loads comparable to a Deering knotter, the CUBIX requires only six knotters, thus saving twine and changeover times when changing twine. In addition, the new double loop knotter produces no twine waste, making it even more economical and sustainable.

Service Drive for safe setting in one-man operation

A hydraulic motor is available in the form of the Service Drive for the regular basic setting of the machine – for example, after work on the knotter, the needles or the main and auxiliary drives. This allows the machine to be driven hydraulically at low aggregate speed without manual cranking. This means that the ram and needle position can be set by just one person

without dangerous and time-consuming climbing around on the machine. In future, it will be possible to store fixed service positions for units such as rams and needles, which can be called up at the touch of a button.

About CLAAS

Founded in 1913, CLAAS (www.claas.com) is one of the world's leading manufacturers of agricultural machinery. Headquartered in Harsewinkel, Westphalia, the company is the global market leader in forage harvesters. CLAAS also holds the European market leadership in another core segment, combine harvesters. CLAAS also ranks among the world's top agricultural technology companies in the fields of tractors, agricultural balers and grassland harvesting machinery. The product range also includes state-of-the-art agricultural information technology. CLAAS employs 12,000 people worldwide and achieved a turnover of 5 billion euros in the 2024 financial year.

Kontaktpersoner



Lars Johnsen

Salgschef, CLAAS

lajo@da-machinery.dk

+ 45 61 61 72 29