

New Holland NH^{Drive} concept autonomous tractor and new High Efficiency Heat Rejection cooling system reap awards at SIMA 2017

- *Silver Innovation Medal to the New Holland NH^{Drive} concept autonomous tractor, which can work with or without a driver*
- *Special Mention to the new cooling system design of the High Efficiency Heat Rejection System*



PRESS RELEASE

New Holland's ingenuity and innovative approach received recognition from the international jury panel of agricultural experts, who awarded the coveted Silver Innovation Medal to the New Holland NH^{Drive} concept autonomous tractor, which offers a glimpse into the future of farming that could feature fully autonomous machinery – a vision that could redefine the agriculture of tomorrow. The jury also awarded a Special Mention to New Holland's new design for a more efficient cooling system, the High Efficiency Heat Rejection System.

Carlo Lambro, New Holland Agriculture Brand President, stated: "We are delighted with this recognition of our forward looking approach. The awarded innovations are the result of our strong focus on continuously raising the level of efficiency and profitability that our customers can reach with our equipment, and they support our overarching aim to help create a sustainable future for agriculture. The NH^{Drive} concept autonomous tractor offers maximum operational flexibility for its capability for driverless operation while featuring a fully equipped cab for those tasks where complete autonomy is not yet possible. At New Holland Agriculture we have made farming innovation our main goal for more than 120 years and are proud to be an active and driving force in this important change."

Silver Innovation Medal to the New Holland NH^{Drive} concept autonomous tractor, which can work with or without a driver

The New Holland NH^{Drive} concept autonomous tractor, which is based on a T8 Blue Power model, was developed by CNH Industrial in collaboration with its long-standing technology provider Autonomous Solutions Incorporated (ASI), a Utah-based company that is the industry leader in off-road autonomous solutions.

NH^{Drive} is a fully autonomous unmanned vehicle that can be monitored and controlled via a desktop computer or a portable tablet interface. Equipped with a seeder, it is able to autonomously seed the next crop straight behind the combine. Farmers can access tractor and implement data whenever they need, wherever they are, so that they can make informed decisions at the right time, optimizing operational efficiency and productivity – and they maintain full control and ownership of their data.

The NH^{Drive} tractor can make the most of the periods of favourable weather for farming operations by working around the clock; it makes full use of the advanced PLM (Precision Land Management) technology for precision farming; it is able to reach higher levels of productivity and efficiency than traditional methods; and it helps to reduce the risks associated with human error as it follows predetermined and optimised plans for all activities.

The NH^{Drive} concept tractor offers maximum operational flexibility, as it features the same cab as a standard T8, so that it can also be used for those operations where complete autonomy is not yet possible, such as front loader work and high speed road transport.

The NH^{Drive} tractor is able to work alongside other autonomous machines and can also work in tandem with machines driven by an operator. Going forward, it will be able to completely automate grain handling during the harvest when equipped with a trailer, including unloading, transport and offloading activities. It is conceivable that in the future New Holland's complete tractor range and other agricultural equipment could be equipped with the NH^{Drive} technology.

The further development of the NH^{Drive} autonomous tractor will be a key element of the future PLM strategy - one of the pillars of the Clean Energy Leader strategy – and represents the ultimate expression of the "doing more with less" concept: more work, more efficiency, more productivity, more flexibility in operating decisions, all based on precise data. This, all with optimised use of inputs, reduced costs and consumption and less human fatigue.

Special Mention to the new cooling system design of the High Efficiency Heat Rejection System

New Holland's new design for the cooling system is based on the "dual loop" and "thermal averaging" concepts and aims to reduce the size of the radiator package and, consequently, the cooling fan's power requirement.

The High Efficiency Heat Rejection System (HEHRS) relies on two loops: a high temperature loop to cool the engine and a low temperature loop to cool the vehicle systems locally, averaging the heat rejection requirements. The thermal module only has two radiators: one for the engine cooling and one for the low temperature loop. The traditional air-to-liquid radiators are replaced with plate heat exchangers, which are much more efficient. This provides high flexibility in the system's packaging, which enables a new layout of the components that maximises efficiency and reduces the power requirements of the fan. As a result, the new cooling system delivers significant benefits in performance and fuel efficiency.

The advantages of the new system are many: the smaller radiators and optimised layout leave more free space under the hood. The simplified thermal module makes maintenance and cleaning the exchanger extremely easy. The coolant flow rate can be dynamically balanced using an electric pump to manage the coolant distribution with dedicated valves to serve the components operating in the most critical temperature conditions. It is a modular system so that additional coolers can easily be added if required. Very importantly, the high cooling efficiency results in significant energy savings.

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