

PARTNERING WITH SAMASZ TO CREATE HYDRAFORCE'S FIRST ISOBUS® PROJECT

CASE STUDY:



CHALLENGE

The new Tractor Mounted Disc Mower presented the opportunity for SaMASZ's Engineering team to improve the design of the already established KDD Mower – the largest SaMASZ mower of its kind, on the market; by adding new technology to the market leading PerfectCUT™ Cutterbar.

By making design improvements, SaMASZ aims to create a new mower that would increase the efficiency, sustainability, and ergonomics for the operator – leading to an increased brand presence for the manufacturer, not only in Europe, but globally.

STRATEGY

The new design enabled SaMASZ to partner with HydraForce, to completely redesign the hydraulics and electronic control system, used on the implement. This partnership allowed SaMASZ to take full advantage of HydraForce's hydraulic expertise, allowing them to design a dedicated manifold to house cartridge valves, which would result in a more versatile compact hydraulic system. This provided additional hydraulic features, such as a transport latch, side guards and hydropneumatics suspension with breakaway functionality, to lift the mower so it avoided obstacles in the field.

For the Hydraulics solution, HydraForce designed a new set of three custom hydraulic manifolds, with each manifold holding a different function for the machine. The main manifold was designed to control the general functions of the mower, including lifting/lowering the main mower assemblies, collector belts, end guard and transport latch. This manifold also controls the suspension on the mower assemblies, which includes a hydraulic breakaway system, that allows the assembly arm to move back, and lift in the event of an obstacle being hit; protecting the mower against damage. A secondary (optional) manifold was also designed to control the collector belt speed, which could be used by the operator to pile cut grass into a single swath in the centre of the implement. This manifold could be equipped to work off a dedicated power pack on the mower, or the load sense of the tractor. The third (optional) manifold controls a SaMASZ front mower, which enables the system to control all three mowers at the same time.



The SaMASZ KDD 911 STH ISOBUS was launched to the market at the end of 2023, receiving ISOBUS® certification by the AEF (Agricultural Industry Electronics Foundation).



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HydraForce also offered SaMASZ a new electronic control system, adding new features which would improve the overall implement control. This new electronic system facilitated the implementation of ISOBUS® (AEF Trademark): a standardised communication protocol used by agricultural and forestry machines. The Electronics were developed in house at HydraForce, and offered even more value to the customer, as SaMASZ could purchase the complete solution from one supplier.

By incorporating ISOBUS®, it allowed SaMASZ to extend portfolio with new control solution; allowing the operator to choose all the implements' functions from a virtual terminal. For users who already have ISOBUS® compatible tractors, it is not a requirement to have an additional control panel. However, for those customers without an ISOBUS® compatible tractor, SaMASZ could offer any ISOBUS® certified virtual terminal. The implement also has the ability to map functions to an AUX-N joystick, allowing for an easier and more comfortable control of operation, for the operator.

RESULT

Working with HydraForce has enabled SaMASZ to add new features, whilst still maintaining the optimum performance that farmers have come to expect from the SaMASZ brand. The SaMASZ KDD 911 STH ISOBUS was officially released to the market at the end of 2023, and promised an efficient and comfortable solution for the agricultural market:

“The implementation of hydraulics with load sensing and ISOBUS control has made our machines more attractive to the global market” said Krystian Gotlib, Manager of Hydraulic and Control Section in R&D Department at SaMASZ.

“The solutions adapted in this project will allow future users of our machines to work more efficiently and ergonomically than before. Savings in fuel and time associated with the use of the machine will be appreciated by operators, as well as by owners of farms and contractors,” Mr Gotlib, concluded.

The SaMASZ KDD 911 STH ISOBUS received ISOBUS® certification by the AEF (Agricultural Industry Electronics Foundation) which allowed the mower to be listed on the ISOBUS® database - a tool which can be used by farmers and dealers to compare the compatibility of different manufacturers of ISOBUS® machines.