

NEW



Adaptive L. S. for all pumps

Walvoil Innovative System
for LS signal

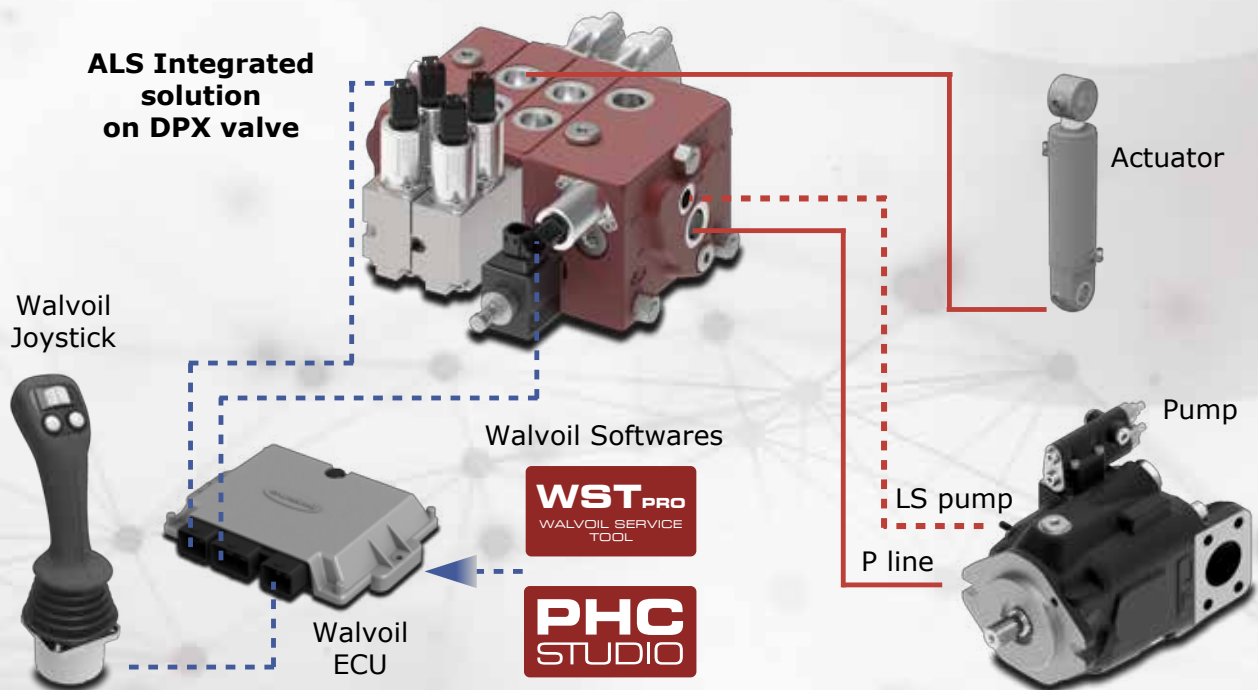


ALS SYSTEM

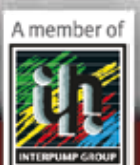
Walvoil ALS (Adaptive Load Sensing) is an innovative system that allows manipulation of the LS signal to adjust the Pressure Margin applied to the valve. This system seamlessly integrates within the Walvoil product range and opens up a new range of possibilities regarding energy optimization and machine flexibility. Through the patented ALS system it is now possible to develop custom control logic Pressure Margin while using a common variable displacement pump with a fixed setting or a fixed displacement pump.

ALS INTEGRATED SOLUTION

The ALS system is designed as an integrated solution on the inlet section for a Load Sensing Flow Sharing valve, such as the Walvoil DPX100, while maintaining the fundamental features of the standard inlet section.



The system receives the LS signal from the load sensing flow sharing valve and returns LSC (conditioned load sensing), which is sent to the load sensing pump. This is possible thanks to a proportional reducing solenoid valve, controlled by the Walvoil PHC Studio software in the Walvoil CED electronic control unit. The Walvoil WST software allows the system integrator to easily and flexibly customize the application.



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ALS FUNCTIONS

Several function modes and performance improvements can be achieved thanks to the ALS system:

- **BOOST FUNCTION:** it is possible to increase the speed of the individual actuators and consequently the productivity of the machine by increasing the value of the Pressure Margin on the valve, above the value set on the pump.
- **PRECISION FUNCTION:** it is possible to reduce the speed of each actuator, improving both controllability and precision of movements, decreasing the value of the Pressure Margin on the valve, below the value set on the pump. The Precision mode is particularly suitable to realize safety functions on the machine without compromising the control resolution.
- **SHAPING FUNCTION:** it is possible to define a rule for the Pressure Margin adjustment according to the joystick operating angle. It is therefore possible to modify the flow delivery curve, for example by increasing the control precision at the start of the spool stroke and increasing the flow at the end of the stroke.
- **CUSTOMIZED CONTROL:** the way in which the variable Pressure Margin attends in the machine control can be widely defined thanks to the WST software, included in the ECU. The customer has a flexible and intuitive system to define the best control logic. The calibration of controllability is possible with the only variation of the software parameters, without any modification on the hydraulic components.
- **TORQUE CONTROL:** by checking the system pressure and the flow rate required by the users, it is possible to define an upper torque limit. The ALS system can precisely adapt the Pressure Margin preventing the internal combustion engine from stalling.
- **POWER CONTROL:** considering also the revs of the internal combustion engine, the ALS system is able to maintain the hydraulic power within the preset limits, thus allowing to exploit all the power available at each engine speed.
- **ENERGY EFFICIENCY:** through a correct management of the Pressure Margin, depending on the operating conditions, it is possible to reduce energy dissipation.

The ALS system, thanks to its flexibility and easy implementation, also as retrofit and upgrade of machines available on the market, represents a significant step forward in functional optimization and electronic system integration.



D1WWCD05E - 1st edition March 2020