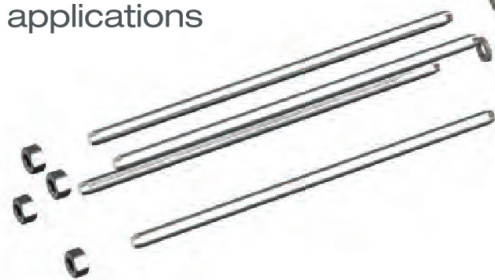


# Walvoil's new directional valve

Company will launch a new directional valve for front loaders and other lifting applications



Exploded drawing of Walvoil's new SXP valve

Alessandro Cervi, hydraulics project manager at Italy's Walvoil Spa, explained that the main characteristic of the new SXP valve is the possibility to move from a series to a parallel circuit functionality every time it is required by the working conditions. "The SXP system, which has been patented by Walvoil, overcomes the long-standing fight between series circuit valves, which optimize control, and parallel circuit valves, which optimize load capacity," said Cervi. "Walvoil has several solutions in its range based on these two traditional technologies, but SXP can now supply a comprehensive product that combines the best aspects of both while overcoming the respective weaknesses."

The new SXP directional valves start from existing valves in the Walvoil range and the addition of a simple device. This device can also be included in a customized solution for a specific application.

The device is composed of a logic element and a sequence valve positioned between the arm and the bucket hydraulic sections.

As shown in this scheme of the hydraulic circuit for a front loader, when in normal position the logic element connects the return of the arm (S) to the supply of the bucket (P1). At the same time, the parallel pressure channel (P) is closed, together with the discharge connection to the hole (T). In this status, the hydraulic distributor works as a traditional series circuit.

When the pressure in the P channel reaches the limit value of the VS valve (for example, when a function is reaching its end of



stroke), the logic element switches the circuit in its second working position, with the discharge of the S channel and the simultaneous opening of the parallel P channel. In this configuration, the distributor works as a typical parallel circuit.

## NO UNWANTED SWITCHING

Thanks to the sequence valve, there is no unwanted switching between the two working positions; in fact, to bring back the logic element in its neutral position (and thus in the series circuit function) the pressure needs to reach below a pre-set value to be input on the spring of the sequence valve.

"This system solves real problems in the hydraulic circuits of loading and lifting machines. In traditional series circuits, when two functions are used together (typically lifting of the arm and bucket movements) if the cylinders of one function reach their end of stroke, also the cylinders of the other function stop creating an obvious distress to the operator," said Cervi.

A parallel configuration with the same simultaneous use of functions, doesn't guarantee a proper distribution of the oil quantities, which makes the simultaneous movements hard if not outright impossible. "Both these problems are solved with SXP, which allows to work in series configuration until a pressure level is reached that indicates the reaching of the load lifting limits (or the end of stroke of a cylinder); then the system turns into a parallel configuration and allows to continue the operations without the operator perceiving any change in the control of the machine," he added. **dpi**

Walvoil SXP hydraulic scheme

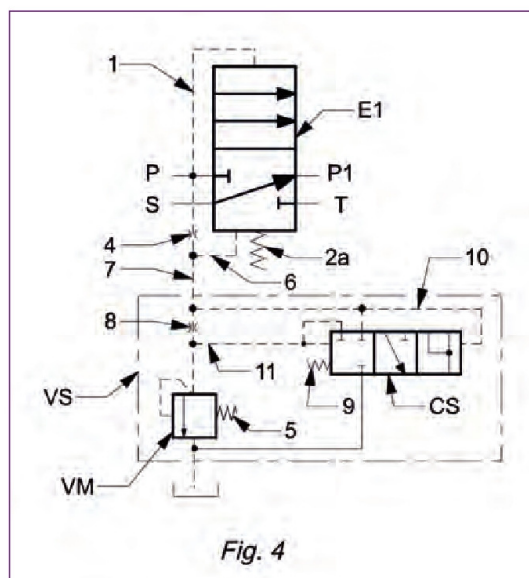


Fig. 4