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# VP120 Load-Sense Directional Control Valve



ENGINEERING YOUR SUCCESS.

# More Productivity with Less Cost

The world's leading supplier of motion control products, Parker Hannifin Corporation, announces the introduction of the VP120 Load-Sense Directional Control Valve. VP120 was designed to help address the challenges faced by mobile machine designers needing improved horsepower utilization, reduced fuel consumption and trouble-free operation.

## VP120 Load-Sense Directional Control Valve



Parker wants to keep you informed. Listed below are connection opportunities for you to resource additional information or speak directly with the industry's most knowledgeable hydraulic valve professionals world-wide.

To locate a distributor by phone:  
**1-800-C-Parker**

Visit us at [www.parker.com](http://www.parker.com) to locate your nearest distributor on the VP120 Valve, or our entire mobile valve line-up.

The VP120 valve is an excellent choice for applications with pump input flows from 30-160 LPM (8-42 GPM). The VP120 uses contemporary flow-sharing technology to address the productivity problems associated with pump over-demand conditions. The modular design of the VP120 enables hardware to be added or removed, depending upon the application. For example, it can be configured for load-sense only, or load-sense pressure compensation.

The pressure compensated load-sense work section has its own compensator, so that speed control of multiple functions is achieved, regardless of changes in pressure or engine rpm's. The key technology integrated into the VP120 is flow-sharing. In pump over-demand conditions, flow-sharing benefits machine productivity by maintaining

the speed relationship of the selected functions, but at a reduced speed; therefore, the operator can maintain the rhythm of the machine.

The combination inlet/outlet can be installed on both ends of the valve, facilitating the routing of pump flow to both ends of the valve.

The valve can be operated manually, hydraulic-remote and with solenoids. The same solenoid is used for on/off and proportional control. A bypass compensator is available for use with fixed displacement pumps. Also, priority flow control is an option for steering requirements. In addition, a low pressure regeneration is an option and was designed to overcome the damaging effects of cavitation – namely premature component wear and spongy operation.

The VP120 uses the same port accessories, load-sense relief valve and pressure reducing valve that are used in other Parker valves. The standard spool types are 3-way, 4-way and 4-position float. A full range of flow limited spools are available.

## Specifications

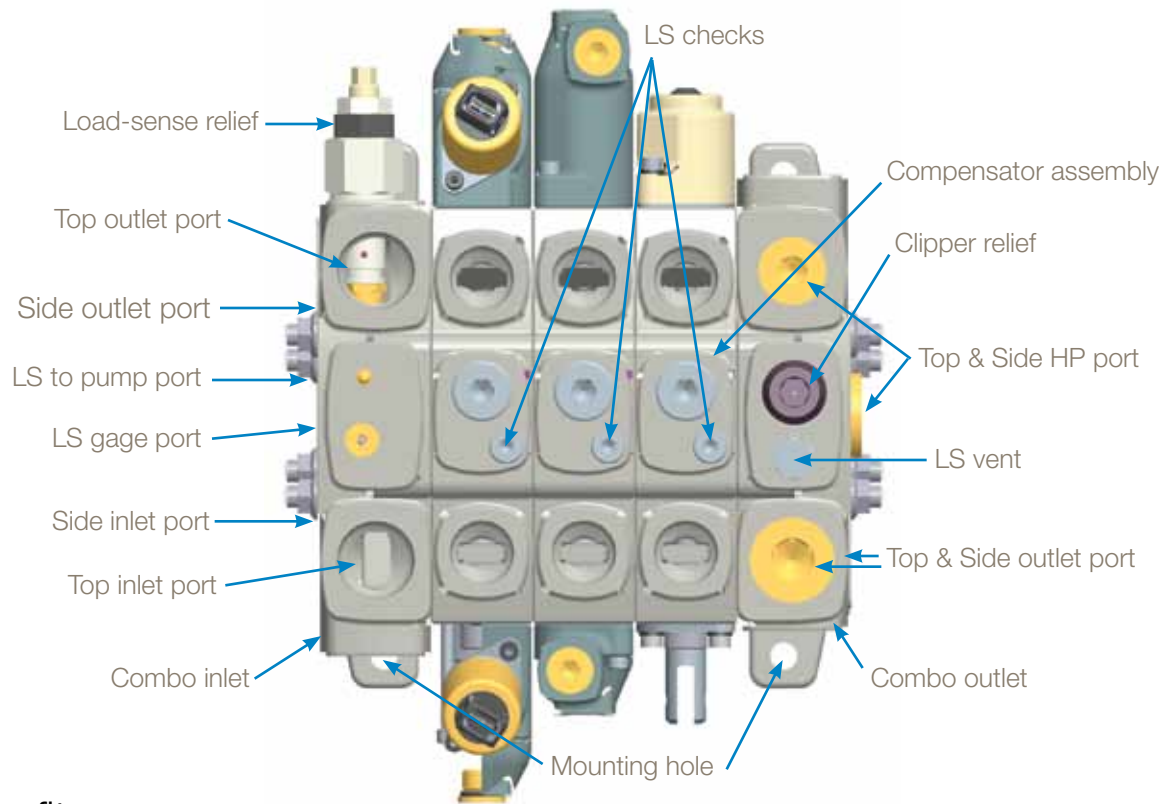
- **Maximum operating pressure: 280 Bar (4060 PSI)**
- **Maximum pump input flows: 160 LPM (42 GPM)**
- **Work section flows: 120 LPM (32 GPM)**
- **Spool flow ranges: 19 to 120 LPM (5 to 32 GPM)**
- **Sectional construction**
- **ISO 18/14**

## VP120 Load-Sense Directional Control Valve Applications

VP120 is an excellent choice for the various applications in all the mobile markets we serve. However, it is specifically targeted for the following machines:

- **Wheel loaders and bulldozers**
- **Cranes and material handling equipment**
- **Aerial work platforms, digger derricks and drill rigs**





## Benefits

- Excellent machine controllability** – individual pressure compensation in each work section delivers predictable metering with single and multi-function operation, regardless of change in pressure and input flow. This enhances machine control, improves productivity and helps to make every operator an “expert” operator – all of which saves money. This valve type also lends itself to closed-loop control.
- Improved system efficiency** – optimized horsepower utilization and heat management are features that are inherent with load-sense pressure-compensated valves due to a closer match between horsepower consumption and horsepower demand. Fuel savings of up to 30% can be achieved vs. open-center type systems. Also, better horsepower utilization may enable the use of a smaller engine or elimination of a heat exchanger.
- Enhanced machine productivity** – the VP120 incorporates flow-sharing technology. This means that during a pump over-demand condition the valve will automatically apportion the available flow to the selected functions, based upon the area openings of the spool notches. The selected functions will maintain their speed relationship, but at a lower overall speed. This automatic adjusting by the valve can improve machine productivity as much as 20% and reduce operator fatigue.
- Enhanced speed control** – the optional margin control boosts or reduces flow to the selected work sections. This enables the hydraulic circuit designer to better utilize the available pump flow and possibly reduce the size of the engine.
- Reduced heat generation** – pressure limiting is a feature not common on valves with flow sharing technology. This feature allows for selected functions to operate at a pressure less than the setting of the load-sense relief valve, while only passing a few liters of oil to the tank. The alternative method for achieving this is with a port relief valve, but they can pass anywhere from 75 LPM (20 GPM) to full flow to tank.
- Flexible design** – the VP120 is available as a pressure compensated load-sense valve (PCLS) or just as a load-sense (LS) valve. The combination inlet/outlet casting can be installed on both ends of the valve, which means that pump flows can be routed to both ends of the valve.
- Ease of service** – the load-sense check and the compensator are located on the top of the work section, making them accessible for troubleshooting without having to disassemble the valve bank.



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