

Better performance comes from working together.



**HYDRAFORCE**  
**POWER FORWARD**

## Logic Element and Flow Regulator in a Single Cartridge Valve - Load Sensing

The EPFRxx-series of valves are 5000 psi/350 bar rated bleed-off style pressure compensators for use in dynamic load-sense systems.

These dual-function valves have integral pressure-compensated flow control that limits the exhaust flow from the dynamic load-sense line to 0.17 gpm/0.064 lpm, which in turn limits parasitic pressure loss.

This reduces cost in many circuits, because it eliminates the cavity space and machining required for the flow regulator function. Compensating this vent orifice often adds enhanced stability to the circuit, mitigating the effects of viscosity change and pressure excursions.

In applications with fixed displacement pumps, a modulating logic valve can be used as a bleed-off compensator to create a load-sense system.

Previously, the only way to accomplish this would have been to use a piloted directional element, such as the EPxx-35 or a piloted spool type logic element, such as the EPxx-S35, with a bleed orifice in the load-sense line. But at working pressures up to 5000 psi/ 345 bar, flow losses across a bleed orifice could be significant.

Using a pressure-compensated regulator, such as the FR08-20, set at 0.1 gpm/0.38 lpm limits this flow loss at high load pressures.

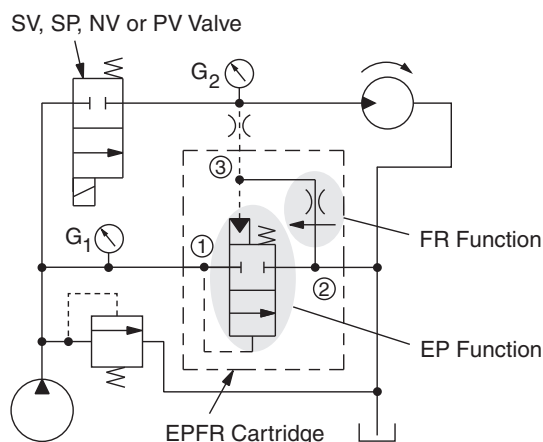
HydraForce has now combined these two functions into one valve with cavity sizes ranging from 08 through 20, accommodating flows up to 100 gpm/379 lpm. A selection



of standard spring ranges and seal options are available.

The EPFRxx series of cartridge valves is another example of the HydraForce commitment to developing innovative new products that offer better features and improved system performance.

HydraForce continues to be the leader in design, manufacturing and applications of hydraulic cartridge valves and electro-hydraulic systems in the mobile equipment OEM markets.



Features	Benefits
Unloading flow rates of 10 gpm/7.8 lpm for the EPFR58-35.	VC08-3 through VC20-3 cavities allow for sizing of components to suit many applications.
VC08-3, VC10-S3, VC12-S3, VC16-S3 and VC20-S3 cavities; Unloading flows up to 100 gpm/379 lpm when fully shifted open.	Able to convert high-flow fixed displacement pump applications into bypass load compensation systems at reasonable cost.
A variety of spring ranges available, ranging from 80 psi/5.5 bar up to 240 psi/16.5 bar.	Versatility in compensating and sizing components for optimum performance and cost.
Built-in pressure compensated flow control to bleed load-sense line.	No need for external bleed orifice or additional flow-regulating cartridge valves, thus reducing component costs and machining costs.
Minimum flow loss from port 3 to 2 at 5000 psi/345 bar.	No flow loss as load pressure increases, as would be the case with a standard bleed orifice.
Standard cavities.	Standard, stocked housings can be used. No new tooling.
Operating pressure to 5000 psi/344 bar.	Opens the door to new high-pressure applications.
Tested to 1 million cycles at full rated flow and pressure.	Long life; no worries about wear or decreased performance over time.

For detailed information and specifications, visit [www.hydraforce.com](http://www.hydraforce.com) or contact your local HydraForce representative at [www.hydraforce.com/Distribs/World.htm](http://www.hydraforce.com/Distribs/World.htm)

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