

## HSPECxx-32: The Second Generation of Multi-Function, Post-Compensated, Flow Sharing Valves

In 2015, HydraForce introduced the HSPECxx-30 family of multi-function, pressure-compensated proportional valves. With several sizes and flow ratings, this line of high pressure solenoid valves found applications in flow-sharing hydraulic circuits for a number of machines that need to operate multiple work functions simultaneously.

After several years of application, the need for a few additional features was expressed by users in the field. In response, HydraForce developed the second generation of HSPEC proportional valves - the HSPECxx-32 family, which includes the HSPEC10-32, HSPEC12-32 and HSPEC16-32.

The HSPECxx-32 family of valves are available with a linear metering option that provides a more tightly controlled flow with a slightly greater flow rate. A manual override option is also available.



The original HSPEC10-30A (left) and the Second Generation HSPEC10-32 (right) which has a slotted cage.

Flow vs. current charts are provided on the next page. Visit [www.hydraforce.com](http://www.hydraforce.com) for complete specifications on the three HSPECxx-32 valves.

	HSPEC10-30A	HSPEC10-32(A)(T)	HSPEC12-30A	HSPEC12-32(A)(T)	HSPEC16-30(A)(T)	HSPEC16-32(A)(T)
Compensator Spring	11 bar (160 psi)	11 bar (160 psi)	10 bar (150 psi)	11 bar (160 psi)	10 bar (150 psi)	10 bar (150 psi)
Standard Metering	—	34 lpm (9 gpm)	—	57 lpm (15 gpm)	98 lpm (26 gpm)	98 lpm (26 gpm)
Linear Metering (A)	35 lpm (9 gpm)	38 lpm (10 gpm)	68 lpm (18 gpm)	68 lpm (18 gpm)	110 lpm (29 gpm)	110 lpm (29 gpm)
T-style Manual Override (T)	—	34 lpm (9 gpm)	—	57 lpm (15 gpm)	—	98 lpm (26 gpm)
Linear Metering + Manual Override (AT)	35 lpm (9 gpm)	38 lpm (10 gpm)	68 lpm (18 gpm)	68 lpm (18 gpm)	110 lpm (29 gpm)	110 lpm (29 gpm)
Pressure Rating	350 bar (5075 psi) continuous / 420 bar (6090 psi) 10% duty cycle					

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

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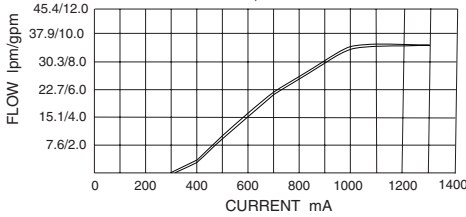
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ISO 9001

## Performance Comparison: Flow vs. Current

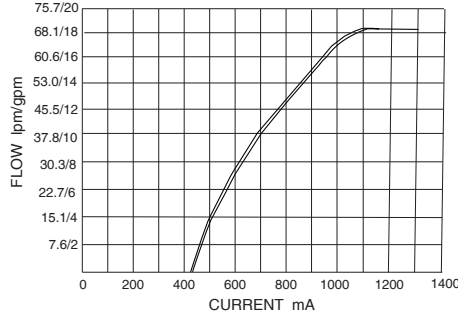
### HSPEC10-30A

FLOW vs. CURRENT  
11 bar (160 psi) Compensation Value  
310 bar (4500 psi) Load at Port 2  
12V Coil, 100 Hz PWM



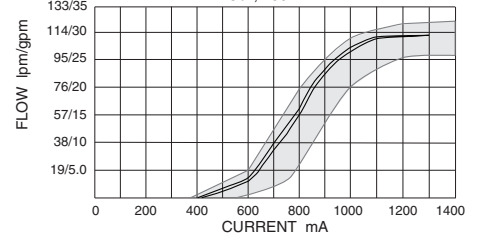
### HSPEC12-30A

FLOW vs. CURRENT  
10.3 bar (150 psi) Compensation Value  
310 bar (4500 psi) Load at Port 2  
12V Coil, 100 Hz PWM



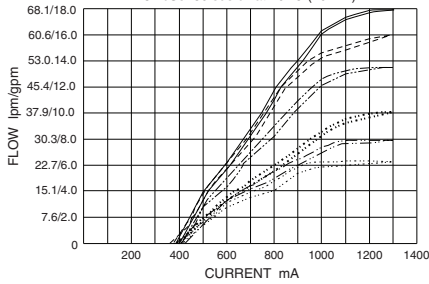
### HSPEC16-30

FLOW vs. CURRENT (Standard Metering)  
10 bar (150 psi) Compensating Value  
310 bar (4500 psi) Load at Port 2  
12V Coil, 100 Hz PWM



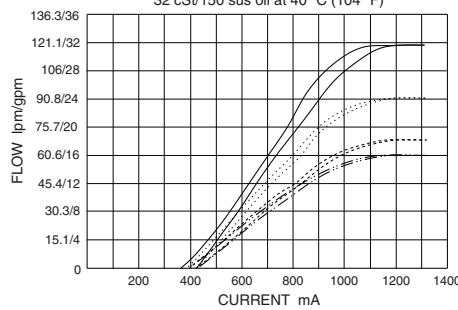
### HSPEC10-32A

FLOW vs. CURRENT (Linear Metering)  
310 bar (4500 psi) Load at Port 2  
— 400 psi ····· 330 psi - - - 230 psi - - - - 160 psi - - - - 80 psi - - - - 40 psi  
12V Coil, 110 Hz PWM  
32 cSt/150 sus oil at 40 °C (104 °F)



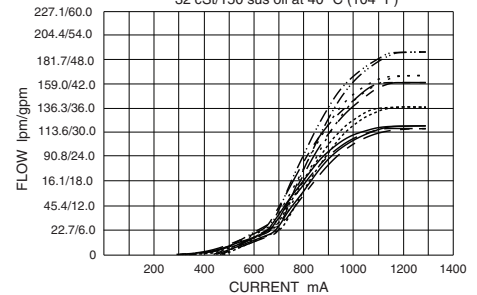
### HSPEC12-32A

FLOW vs. CURRENT (Linear Metering)  
310 bar (4500 psi) Load at Port 2  
— 435 psi ····· 240 psi - - - 160 psi - - - - 80 psi  
12V Coil, 110 Hz PWM  
32 cSt/150 sus oil at 40 °C (104 °F)



### HSPEC16-32

FLOW vs. CURRENT (with Manual Override)  
310 bar (4500 psi) Load at Port 2  
Tested with EPFR52-S35(T)  
- - - 435 psi ····· 300 psi - - - 240 psi - - - - 160 psi  
— 100 psi - - - - 80 psi  
12V Coil, 110 Hz PWM  
32 cSt/150 sus oil at 40 °C (104 °F)



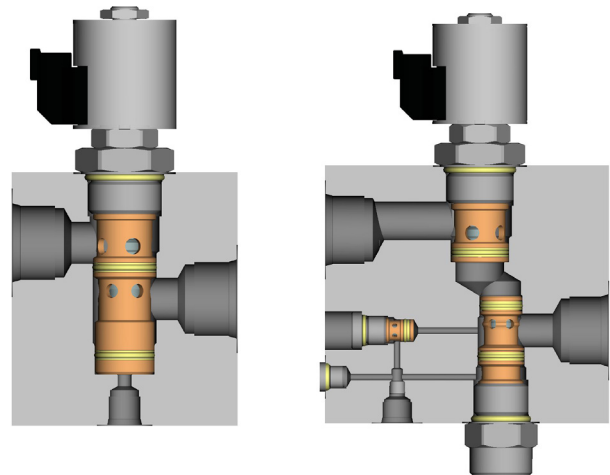
## Flow Sharing and Space Savings

Flow-sharing systems allow the machine operator put the most hydraulic flow where and when it's needed. Post-compensated systems do this automatically.

A single HSPECxx-32 valve (left) provides the same functions as three cartridge valves (shown at right) with a smaller space claim. This translates to savings in multiple areas - reduced size and weight for your machine, improved efficiency, parts consolidation, and more.

### For More Information

If you have questions about the any of the HSPEC cartridge valves, contact your HydraForce Regional Sales Manager or visit [www.hydraforce.com](http://www.hydraforce.com).



A single multi-function HSPEC valve provides the same functionality as several conventional cartridge valves. (Left) HSPEC valve (Right) Three conventional cartridge valves.