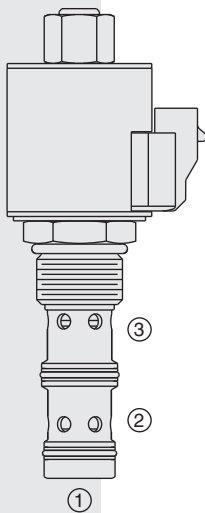
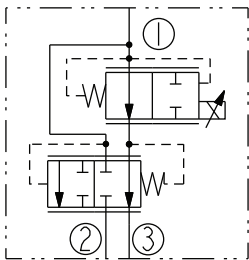
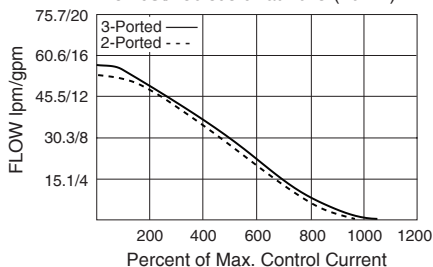


**HPV12-31 HyPerformance™ Proportional Flow,**U.S. Patent  
8,253,063**ISO SYMBOL****PERFORMANCE**

**FLOW VS. CURRENT**  
76 lpm (20 gpm) Input Flow with  
350 bar (5075 psi) Inlet Relief at 1;  
310 bar (4500 psi) Load Pressure at 3;  
12V Coil; 110 Hz PWM  
32 cSt/150 sus oil at 40°C (104°F)

Performance info. continued  
on following page.

**Recommended Electronic Controllers:**  
See page 2.001.1 or our Electronics catalog.

**DESCRIPTION**

A high pressure, solenoid-operated, electrically-variable, three-port, pressure-compensated, spool-type, normally open when de-energized, proportional flow control valve. It can be used as a priority-type flow regulator with pressure-compensated, regulated and bypass flow. It can also be used as a restrictive-type 2-way, pressure-compensated flow regulator when the bypass line (port 2) is blocked.

**OPERATION**

With inlet flow at port 1, the **HPV12-31** will regulate priority flow out of port 3 regardless of system working pressure, with flow rate inversely proportional to current applied to the solenoid. Excess flow will bypass out of port 2 and can be used for auxiliary function control.

**Note:** Avoid dead-heading of priority line by external valving to prevent blocking of bypass line. In restrictive mode applications, bypass port 2 has to be blocked. Flow rate out of port 3 remains inversely proportional to current applied to the solenoid regardless of load (pressure) applied to port 3.

**FEATURES**

- Excellent linearity and hysteresis.
- Compensated flow control.
- Patented high-strength solenoid tube.
- Efficient wet armature construction.
- All HyPerformance™ products are tested to the rigorous standards of the NFPA specification T2.6.1.
- All HyPerformance™ valves are tested at a verification level of 90% and an assurance of 99%.
- 2 or 3-ported operation.
- Coil waterproofing standard.
- Uses more compact 10-size coil.
- Hardened spool and cage for long life.

**RATINGS**

**Operating Pressure:** 350 bar (5075 psi); 10% life cycle 420 bar (6090 psi)

Note: All HyPerformance™ products are tested for 900K cycles at 350 bar and 100K cycles at 420 bar.

**Proof Pressure:** 690 bar (10,000 psi)

**Burst Pressure:** 1380 bar (20,000 psi)

**Regulated Flow Rate:** 76 lpm (20 gpm) nominal input; 114 lpm (30 gpm) maximum input; priority type 57 lpm (15 gpm) maximum; restrictive type 53 lpm (14 gpm) maximum.

**Max. Internal Leakage:** 380 ml/min. (0.10 gpm) at port 3 at 1200 mA current with 350 bar (5075 psi) at port 1 (port 2 blocked)

**Temperature:** -54°C - 107°C (-65°F - 225°F) with PPD1 Urethane seals

**Electrical Parameters (with size 10 E-series coil):**

Coil Voltage Rating	Coil Inductance (mH)	Threshold Current (mA)	Maximum Control Current (mA)
12	247	100	1050
24	973	50	525

**Hysteresis:** ±1.9 lpm (0.50 gpm) maximum

**Dither/PWM Frequency Range:** 100 to 250 Hz

**Filtration:** See page 9.010.1

**Fluids:** Mineral-based or synthetics with lubricating properties at viscosities of 7.4 to 420 cSt (50 to 2000 sus); See Temperature and Oil Viscosity, page 9.060.1

**Installation:** No restrictions; See page 9.020.1.

**Cavity:** HVC12-3; See page 9.112.1

**Cavity Tool:** HCT10-3X-XX; See page 8.600.1

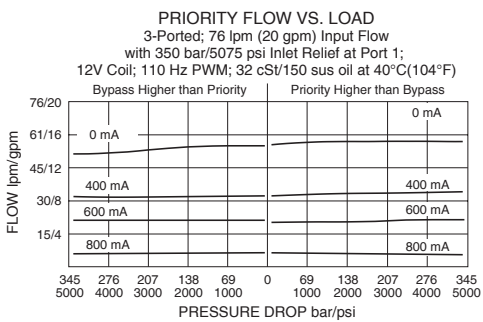
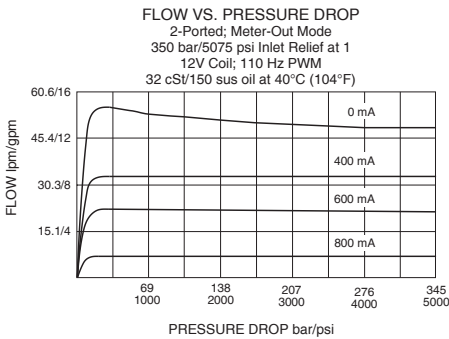
**Seal Kit:** HSK12-3X-0; See page 8.650.1 for seal kit options and appropriate seals based on application temperature range.

**Coil Nut:** Part No. 7004420

# Normally Open, Priority Flow

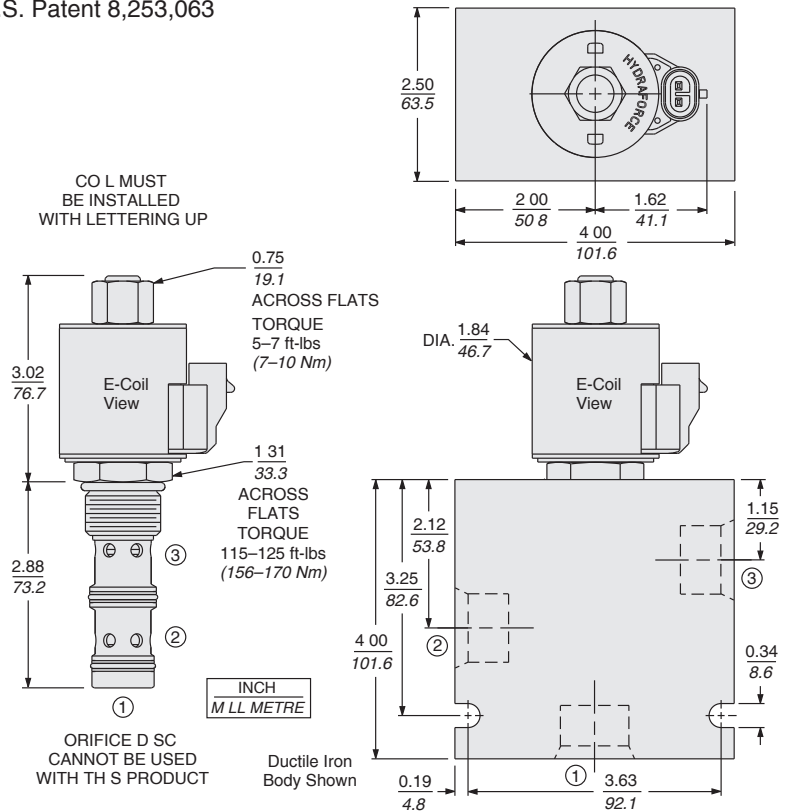
# HPV12-31

## PERFORMANCE (Continued)



## DIMENSIONS

U.S. Patent 8,253,063



## MATERIALS

**Cartridge:** Weight (without coil and nut): 0.32 kg. (0.71 lbs.) Steel with hardened work surfaces. PPDI urethane seals without back-up rings standard.

**Ported Body:** Weight: 4.0 kg (8.93 lbs.) H-Series ductile iron standard. Rated to 345 bar (5000 psi). See page 8.012.1.

**10-size E-Coil:** Weight: 0.41 kg. (0.9 lbs.) Fully encapsulated with rugged external metal shell. IP69K rated. See page 3.400.1.

## TO ORDER

HPV12-31 -

**Porting**  
Cartridge Only **0**  
SAE 12 **12HT**  
3/4" BSP\* **6HB**

\*BSP body; UK Mfg only

**Seals**  
PPDI Urethane **U**

**Coil Terminations**  
IP69K Rated  
Deutsch DT04-2P **ER**  
Metri-Pack® 150 **EY**  
Dual Leads **EL**

Coils with internal diode are available. Consult factory. See coil option info. on page 3.400.1

**Voltage**  
**0** Less Coil  
**12** 12 VDC  
**24** 24 VDC

Note: PPDI Urethane seals are recommended for pressures over 241 bar (3500 psi).

Note: Consult factory for additional seal options.