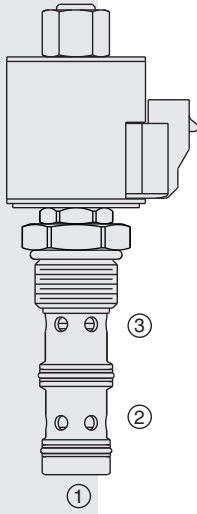
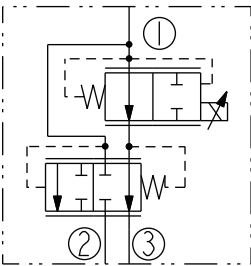


HPV16-31 HyPerformance™ Proportional Flow,

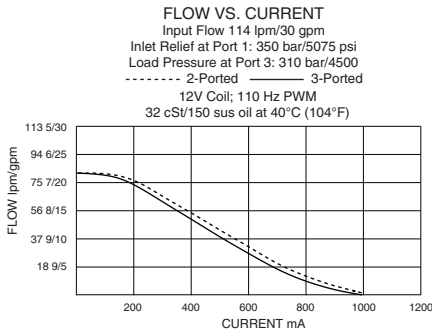
U.S. Patent
8,253,063



ISO SYMBOL



PERFORMANCE



Performance info. continued
on following page.

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

DESCRIPTION

A high pressure, solenoid-operated, pressure-compensated, spool-type, normally open, priority type 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 HPV16-31 will regulate priority flow out of port 3 regardless of system working pressure, with flow rate inversely proportional to the current applied to the solenoid. Excess flow will bypass out of port 2. The bypass flow 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: 1241 bar (18,000 psi)

Flow Rating: 114 lpm (30 gpm) nominal input; 151 lpm (40 gpm) maximum input; priority type 81 lpm (21.5 gpm) maximum; restrictive type 81 lpm (21.5 gpm) maximum.

Maximum 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 to 107°C (-65°F to 225°F) with PPDI 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	950
24	973	50	475

Hysteresis: ± 2.8 lpm (0.75 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: HVC16-3; See page 9.116.1

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

Seal Kit: HSK16-3U-0; See page 8.650.1 for seal kit options and appropriate seals based on application temperature range.

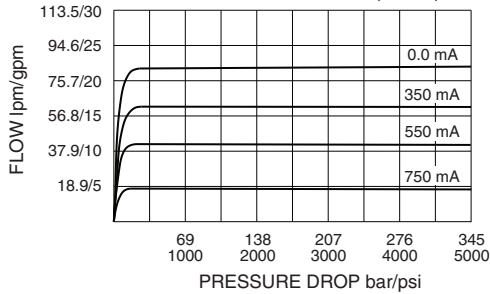
Coil Nut: Part No. 7004420

Normally Open, Priority Flow

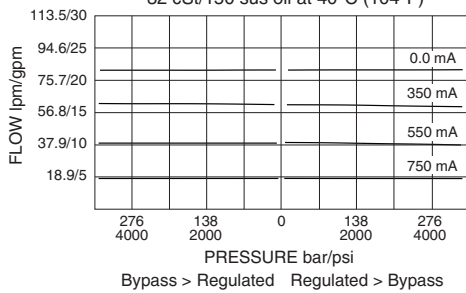
HPV16-31

PERFORMANCE (Continued)

FLOW VS. PRESSURE DROP
(2 Ported; Meter out Mode)
Inlet Relief at Port 1: 350 bar/5075 psi
12V Coil; 200 Hz PWM
32 cSt/150 sus oil at 40°C (104°F)

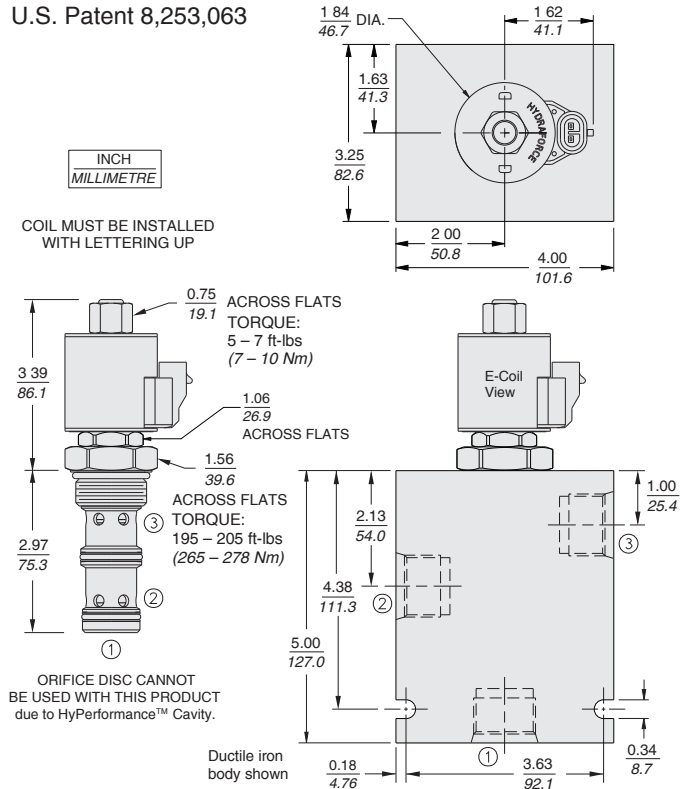


PRIORITY FLOW VS. LOAD
(3 Ported)
Input Flow 114 lpm/30 gpm
Inlet Relief at Port 1: 350 bar/5075 psi
12V Coil; 110 Hz PWM
32 cSt/150 sus oil at 40°C (104°F)



DIMENSIONS

U.S. Patent 8,253,063



MATERIALS

Cartridge: Weight (without coil and nut): 0.49 kg. (1.09 lbs.) Steel with hardened work surfaces. PPDI urethane seals without back-up rings standard.

Ported Body: Weight: 6.57 kg. (14.5 lbs.) H-Series ductile iron standard. Rated to 345 bar (5000 psi). See page 8.016.1.

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

HPV16-31 -

Porting
Cartridge Only **0**
SAE 16 **16HT**
1" BSP* **8HB**

*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.