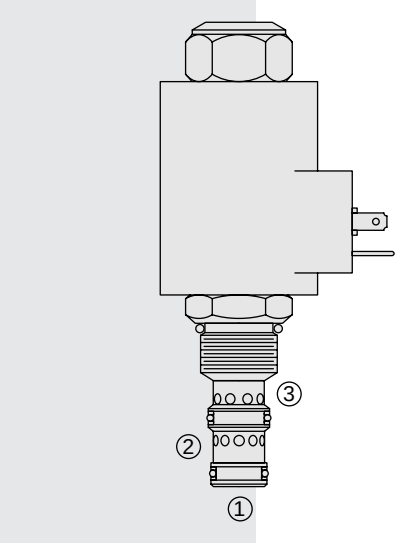
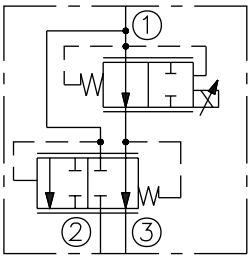
PV70-31 Proportional Flow Control Cartridge,

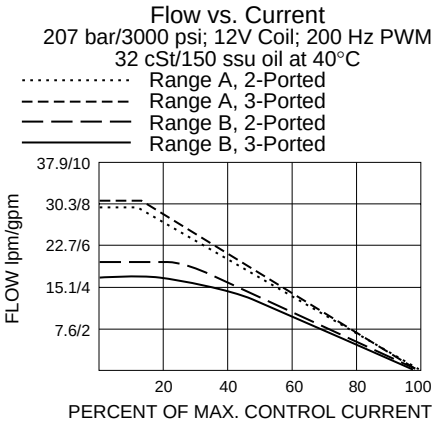


SYMBOLS

USASI/ISO:



PERFORMANCE



Performance information continued on following page.

DESCRIPTION

A 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 two-way, pressure-compensated flow regulator when the bypass line (port ②) is blocked.

OPERATION

The **PV70-31** will regulate flow out of port ③ regardless of system working pressure. With increasing current applied to the solenoid, the PV70-31 will decrease output flow.

Note: When used as a bypass flow control in applications where the priority flow port will be blocked by external valving, bypass pressure drop will increase unless a small amount of leakage is provided for the priority port. Consult factory.

Operation of Manual Override:

To Engage: Turn clockwise approximately 1 turn to reach start point. Continue another approximately 5 turns to full shift.

To Disengage: Turn counterclockwise approximately 6 turns to positive stop.

FEATURES

- Excellent linearity and hysteresis.
- Hardened spool and cage for long life.
- Optional coil voltages and terminations.
- Efficient wet armature construction.
- Cartridges voltage interchangeable.
- Unitized, molded coil design.
- Coil waterproofing standard.
- Manual override option.

RATINGS

Operating Pressure: Inlet: 240 bar (3500 psi); Ports ② and ③: 207 bar (3000 psi)

Regulated Flow Rate: Bypass Blocked, Range A: 26 lpm (7 gpm)
Bypass Blocked, Range B: 17 lpm (4.5 gpm)
Bypass Open, Range A: 30 lpm (8 gpm)
Bypass Open, Range B: 17 lpm (4.5 gpm)

Maximum Input Flow: Bypass Open, Range A: 50 lpm (13 gpm)
Bypass Open, Range B: 26 lpm (7 gpm)

Internal Leakage: 197 cc/min. (12 cu. in./min.) fully closed at 207 bar (3000 psi)

Electrical: 2 standard voltage ratings

Coil Voltage	Threshold Current	Max. Control Current
12 VDC	150 ± 70 mA	1400 ± 200 mA
24 VDC	75 ± 35 mA	700 ± 100 mA

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.

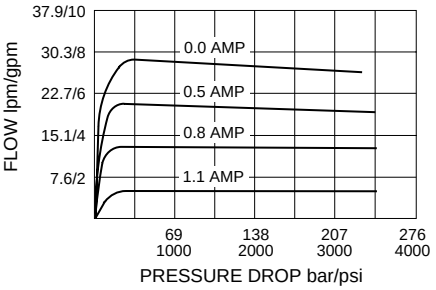
Cavity: VC10-3; See page 9.110.1; **Cavity Tool:** CT10-3X-XX; See page 8.600.1

Seal Kit: SK10-3X-MM; See page 8.650.1 for seal kit options and appropriate seals based on application temperature range.

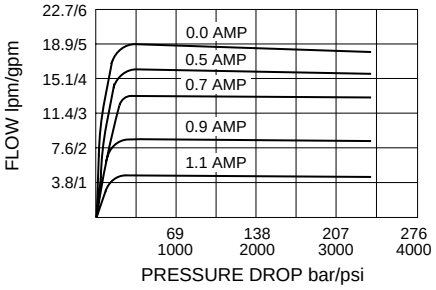
Recommended Electronic Controllers:
See page 2.001.1 or our Electronics catalog.

PERFORMANCE (Continued)

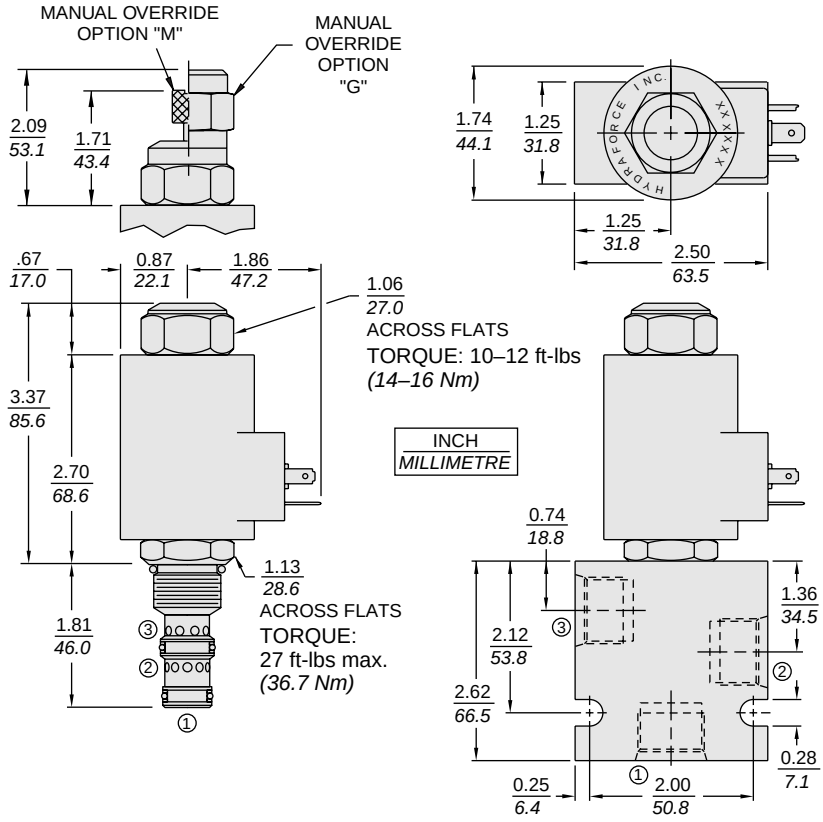
Regulated Flow vs. Pressure Drop
2-Ported; Flow Range A
240 bar/3500 psi Inlet
12V Coil; 200 Hz PWM
32 cSt/150 ssu oil at 40°C



Regulated Flow vs. Pressure Drop
2-Ported; Flow Range B
240 bar/3500 psi Inlet
12V Coil; 200 Hz PWM
32 cSt/150 ssu oil at 40°C



DIMENSIONS



MATERIALS

Cartridge: Weight: 0.19 kg. (0.42 lbs.) Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N O-rings and polyester elastomer back-ups standard.

Standard Ported Body: Weight: 0.36 kg. (0.80 lbs.) Anodized high-strength 6061 T6 aluminum alloy, rated to 207 bar (3000 psi). Ductile iron bodies available; dimensions may differ. See page 8.010.1

70-Size "D" Coil: Weight: 0.32 kg. (0.7 lbs.) Unitized thermoplastic encapsulated, Class H high temperature magnet-wire. See page 3.200.7.

70-Size "E" Coil: Weight: 0.41 kg. (0.9 lbs.) Fully encapsulated with rugged external metal shell. IP69K rated. See page 3.400.13.

TO ORDER

PV70-31 ___ ___ - ___ ___ ___ - ___ - ___ ___ ___ ___

Flow Range
Required. See Performance Curves.
- **A**
- **B**

Porting
- **0** Cartridge Only
- **6T** SAE 6
- **8T** SAE 8
- **2B** 1/4 in. BSP*
- **3B** 3/8 in. BSP*

*BSP Body; U.K. Mfr. Only

Option(s)
- None (Blank)
- Manual Override **M**
- Manual Override with Guard **G**

Seals
- Buna N (Std.) **N**
- Fluorocarbon **V**

Terminations D-Coil
- **DS** Dual Spades
- **DG** DIN 43650
- **DL** Leadwires (2)
- **DL/W** Leads w/Weatherpak® Connectors

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

Coils with internal diode are available. Consult factory.

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