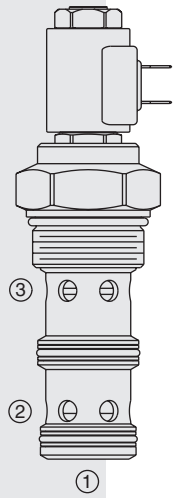
PV42-M30 Proportional Flow Control Cartridge,

U.S. Patent
6,966,329



DESCRIPTION

A solenoid-operated, two-stage, three-port, pressure-compensated, spool-type, normally closed when de-energized, proportional flow control valve. It can be used as a priority-type flow regulator with pressure-compensated, regulated and bypass flow.

OPERATION

The **PV42-M30** will regulate flow out of port 3 regardless of system working pressure at 3 or at bypass port 2. Two priority flow ranges are provided for better resolution: Range A for priority flow up to 170 lpm/45 gpm, and Range B for priority flow up to 132 lpm/35 gpm. For either range, the input flow at 1 can be up to 225 lpm/60 gpm.

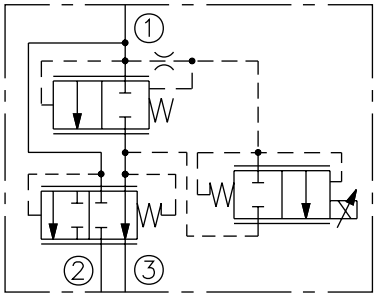
Note: When used as a bypass flow control in applications where the priority flow port will be blocked by external valving, bypass pressure drop will increase unless a small amount of leakage is provided for the priority port. Consult factory.

Operation of Manual Override: To Engage: Turn clockwise approximately 3 turns to reach start point. Continue another approximately 2 more turns to full shift. To Disengage: Turn counterclockwise approximately 5 turns to positive stop.

FEATURES

- Choice of two regulated flow ranges.
- Optional coil voltages and terminations.
- Hardened spool and cage for long life.
- Excellent linearity and hysteresis characteristics.
- Manual override options.
- Efficient wet armature construction.

ISO SYMBOL



RATINGS

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

Input Flow: Range A: 170-225 lpm (45-60 gpm)
Range B: 112-225 lpm (30-60 gpm)

Regulated Flow Max: Range A: 190 lpm (50 gpm) maximum
Range B: 132 lpm (35 gpm) maximum

Maximum Internal Leakage: 1.52 lpm (0.40 gpm) at zero current

Electrical Parameters: With EHPR08 coils

Coil Voltage Rating (VDC)	Resistance at 20°C Ω	Threshold Current (mA)	Maximum Control Current (mA)
12	5.4	400 ± 100	1400 ± 150
24	21.7	200 ± 50	700 ± 75

Dither/PWM Frequency Range: 100-200 Hz

Operating Fluid Temperature: -40 to 100°C (-40 to 212°F) with Buna N seals; -26 to 204°C (-15 to 400°F) with fluorocarbon seals

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

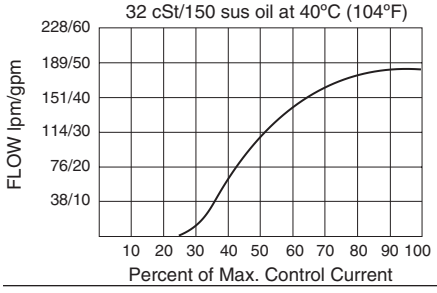
Installation: No restrictions; See page 9.020.1.

Cavity: VC42-M3; See page 9.142.1; **Cavity Tool:** CT42-M3X-XX; See page 8.600.1

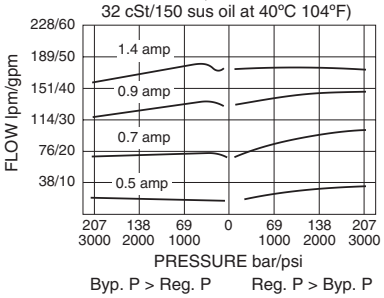
Seal Kit: SK42-3X-MM; See page 8.650.1 for seal kit options.

PERFORMANCE

Range A
Regulated Flow vs. Current
207 bar/3000 psi at Port 3
at 190 lpm/50 gpm Input Flow
12V Coil; 110 Hz PWM
32 cSt/150 sus oil at 40°C (104°F)



Range A, 3-Way
Regulated Flow vs. Load
240 bar/3500 psi, 190 lpm/50 gpm Inlet
12V Coil; 110 Hz PWM
32 cSt/150 sus oil at 40°C 104°F)

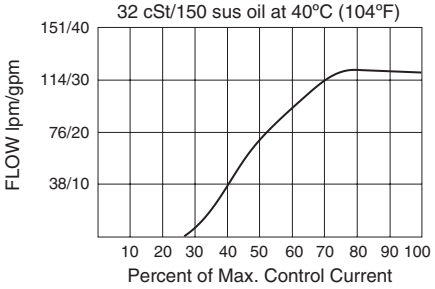


Recommended Electronic Controllers:
See page 2.001.1 or our Electronics catalog.

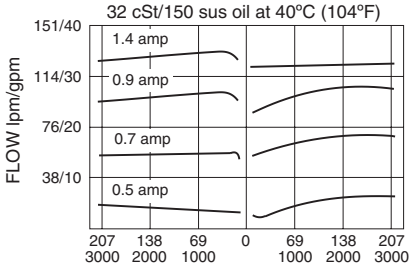
Normally Closed PV42-M30

PERFORMANCE (continued)

Range B
Regulated Flow vs. Current
207 bar/3000 psi at Port 3
125 lpm/33 gpm Input Flow
12V Coil; 110 Hz PWM
32 cSt/150 sus oil at 40ºC (104ºF)



Range B, 3-Way
Regulated Flow vs. Load
240 bar/3500 psi, 125 lpm/33 gpm Inlet
12V Coil; 110 Hz PWM
32 cSt/150 sus oil at 40ºC (104ºF)



DIMENSIONS

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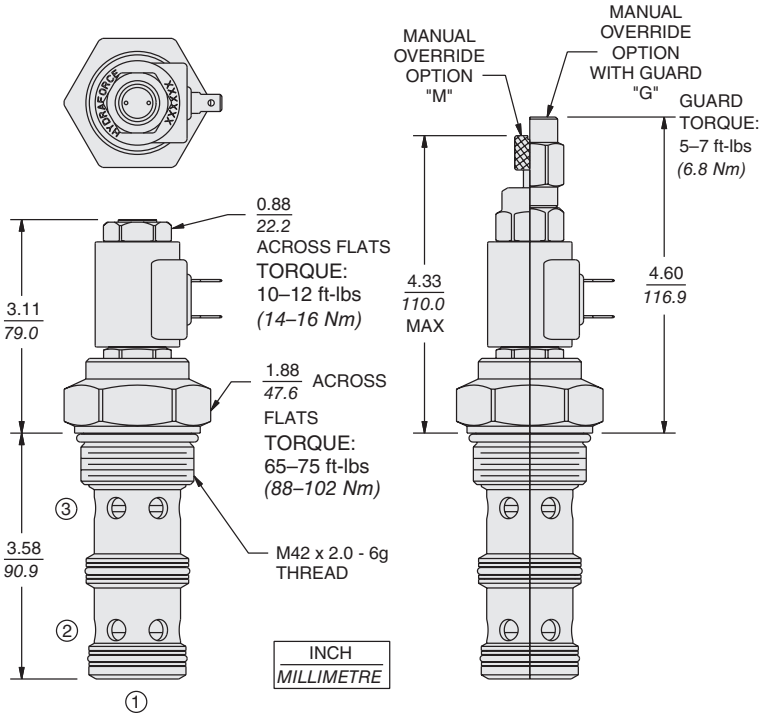

MATERIALS

Cartridge: Weight: 0.89 kg. (1.97 lbs.); Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N O-rings and polyester elastomer back-ups standard.

Ported Body: Consult factory. Anodized high-strength aluminum alloy, rated to 207 bar (3000 psi) Ductile iron bodies available; dimensions may differ. See page 8.042.1.

EHPR Series Coil: D-Series weight: 0.10 kg. (0.22 lb.) E-Series weight: 0.14 kg. (0.30 lb.) Unitized thermoplastic encapsulated, Class H high temperature magnet-wire. See page 3.200.8.

TO ORDER

PV42-M30 ___ ___ - ___ ___ ___ - ___ - ___ ___ ___ ___

Flow Range
190 lpm (50 gpm) **A**
Up to 132 lpm (35 gpm) **B**

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

Porting
SAE 20
(Aluminum) **20T**
(Ductile Iron) **20TD**

Seals
Buna N (Std.) **N**
Fluorocarbon **V**
Polyurethane **P**

Terminations
DS Dual Spades
DG DIN 43650
DL Leadwires (2)
DL/W Leads w/Weatherpak® Connector
ER Deutsch DT04-2P

Coils with internal diode are available. Consult factory.

Voltage
0 Less Coil
12 12 VDC
24 24 VDC