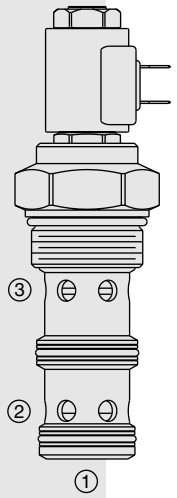
PV42-M30 Proportional Flow Control Cartridge,

Patent Pending



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 190 lpm/50 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.

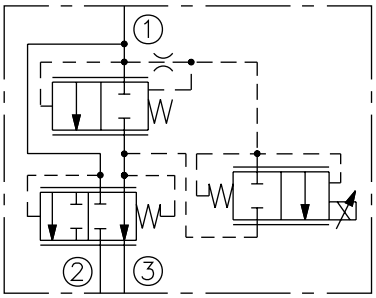
Operation of Manual Override: To Engage: Turn clockwise approximately 3 turns to reach start point. Continue another approximately 2 more turns to full shift. To Disengage: Turn counterclockwise approximately 5 turns to positive stop.

FEATURES

- Excellent linearity and hysteresis characteristics.
- Hardened spool and cage for long life.
- Optional coil voltages and terminations.
- Efficient wet armature construction.

SYMBOLS

USASI/ISO:



RATINGS

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

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

Maximum Input Flow: 225 lpm (60 gpm)

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

Electrical: 2 standard voltage ratings

Coil Voltage	Resistance @ 20°C	Threshold Current	Max. Control Current
12 VDC	5.4 ohms	400 ± 100 mA	1400 ± 150 mA
24 VDC	21.7 ohms	200 ± 50 mA	700 ± 75 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 ssu)

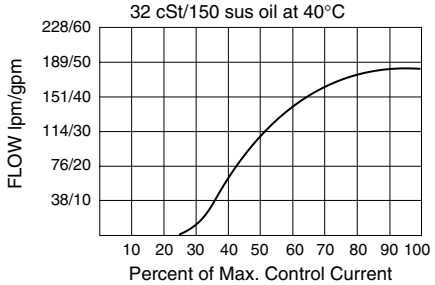
Installation: No restrictions; See page 9.020.1.

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

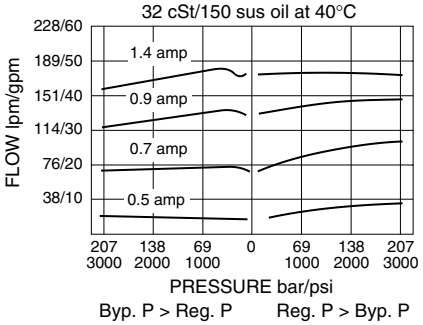
Seal Kit: SK42-3X-MM; See page 8.650.1

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



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



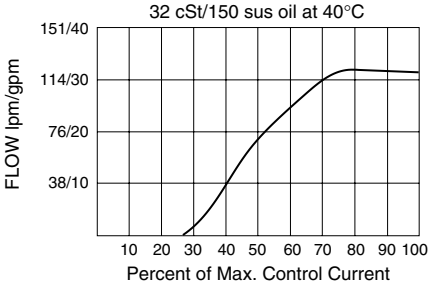
Recommended Controllers (See Section 3)

Input Sig. w/12V Coil	DIN Coil Mount	PCB Board	Metal Box	DIN Rail Mount
0-5 VDC	7114950	4000046	4000049	4000136
0-10 VDC	4000070	4000141	4000124	4000137
4-20 mA	4000123	4000143	4000130	4000139
PWM	—	4000144	4000133	4000140
w/24V Coil				
0-5 VDC	4000161	4000194	4000174	4000136
0-10 VDC	4000165	4000141	4000182	4000137
4-20 mA	4000169	4000143	4000186	4000139
PWM	—	4000144	4000133	4000140

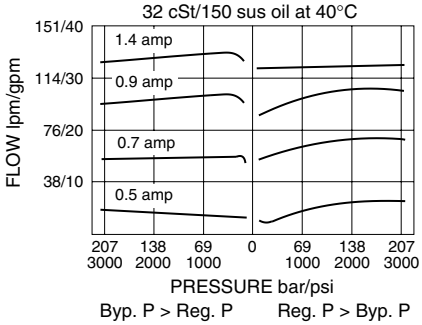
Normally Closed — PV42-M30

PERFORMANCE (continued)

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

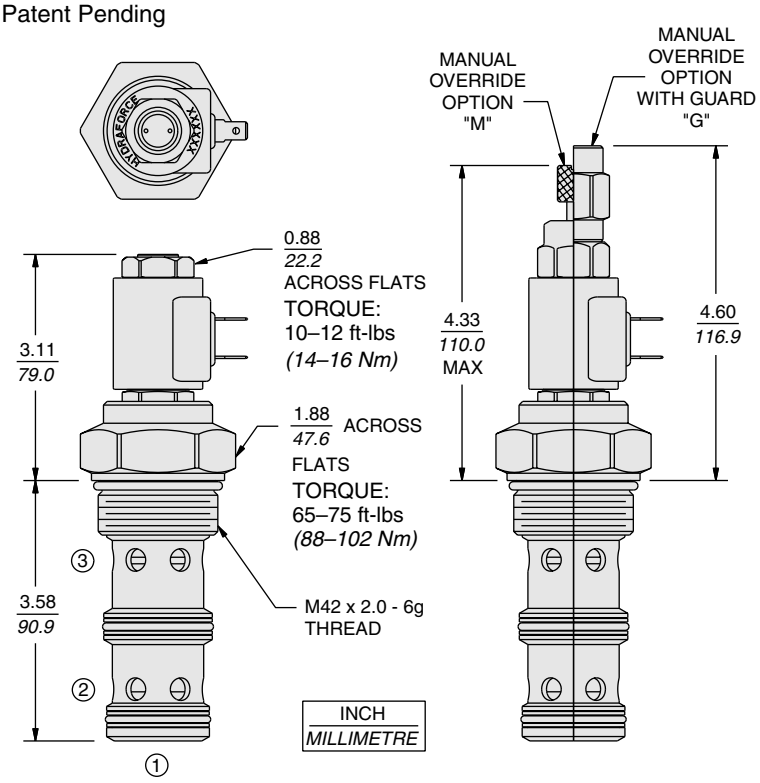


Range B, 3-Way
Regulated Flow vs. Load
240 bar/3500 psi, 125 lpm/33 gpm Inlet
12V Coil; 110 Hz PWM
32 cSt/150 sus oil at 40°C



DIMENSIONS

Patent Pending



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.

EHPR Series Coil: Weight: 0.32 kg. (0.7 lbs.); Unitized thermoplastic encapsulated, Class H high temperature magnet-wire; See page 3.200.8.

TO ORDER

PV42-M30 ___ - ___ - ___ - ___

Flow Range
Up to 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
Consult Factory

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

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

Coils with internal diode are available. Consult factory.

Voltage
0 Less Coil
12 12 VDC
24 24 VDC