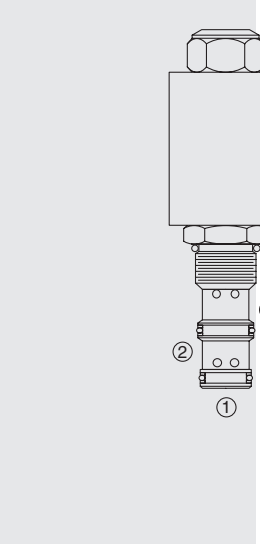
PV72-30 Proportional Flow Control, Bypass,



DESCRIPTION

A solenoid-operated, 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. It can also be used as a restrictive-type 2-way, pressure-compensated flow regulator when the bypass line (port 2) is blocked.

OPERATION

The **PV72-30** provides priority-regulated flow at port 3 with pressure-compensated regulated and bypass flow. The regulated flow is proportional to electric current applied to the solenoid.

Operation of Manual Override:

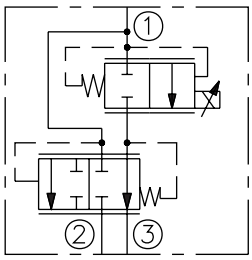
To Engage: Turn clockwise approximately 1 turn to reach start point. Continue another approximately 5 turns to full shift.

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

FEATURES

- Choice of two regulated flow ranges.
- Excellent linearity and hysteresis.
- Efficient wet armature construction.
- Optional coil voltages and terminations.
- Cartridges voltage interchangeable.
- Unitized, molded coil design.
- Coil waterproofing standard.
- Manual override options.

ISO SYMBOL



RATINGS

Operating Pressure: 240 bar (3500 psi)

Proof Pressure: 345 bar (5000 psi)

Burst Pressure: 896 bar (13000 psi)

Flow Rating: Range A: 0-57 lpm (0-15 gpm); Range B: 0-38 lpm (0-10 gpm)

Internal Leakage: 0.38 lpm (0.1 gpm) max @ 0 current

Electrical Parameters: (with size 70 E-series and D-series coils):

Coil Voltage (VDC)	Valve Inductance (mH)		Threshold Current (mA)	Max Control Current (mA)
	E-Coil	D-Coil		
12	240	200	350±100	1600±200
24	700	600	175± 50	800±100

Hysteresis: 1.9 lpm **(**0.50 gpm) max

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: Install D-series coils with two O-rings above and below the coil. Install E-series coils with only one O-ring above the coil. Manual override options M and G require Coil Nut Kits. See part numbers below. See Cartridge Installation, page 9.020.1 for cartridge, coil and coil retainer installation. To assure proper function, coil retainer must be installed.

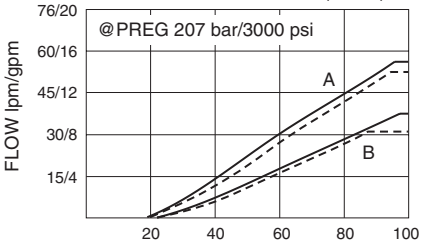
Cavity: VC12-3; See page 9.112.1; **Cavity Tool:** CT12-3X-XX; See page 8.600.1

Seal Kit: SK12-3X-MM; See page 8.650.1 for seal kit options and appropriate seals based on application temperature range.

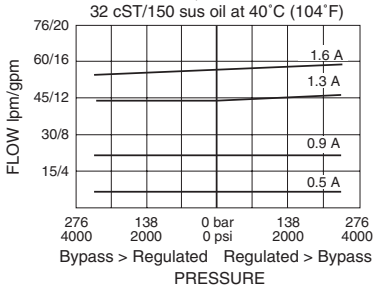
Coil Nut Kits (for Manual Override Option G): 4001214; (for Manual Override Option M): 420218

PERFORMANCE

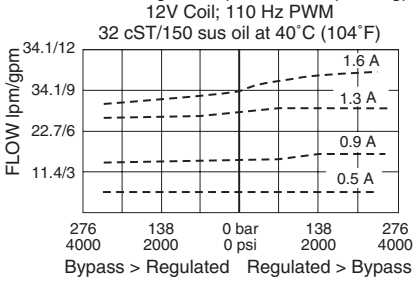
Flow vs. Current
Input Flow: 76 lpm/20 gpm
12V Coil; 110 Hz PWM
3-Ported —— ; 2 Ported - - - -
32 cSt/150 sus oil at 40°C (104°F)



Regulated Flow vs. Load
3-Ported - Range A - Input Flow: 76 lpm/20 gpm
12V Coil; 110 Hz PWM
32 cST/150 sus oil at 40˚C (104˚F)

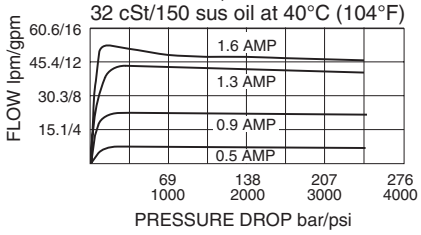


Regulated Flow vs. Load
3-Ported Range B - Input Flow: 76 lpm/20 gpm
12V Coil; 110 Hz PWM
32 cST/150 sus oil at 40˚C (104˚F)

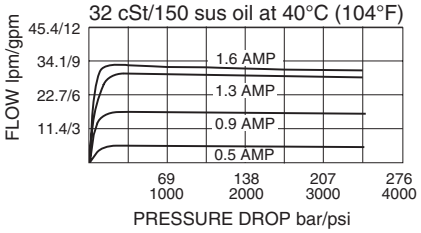


PERFORMANCE

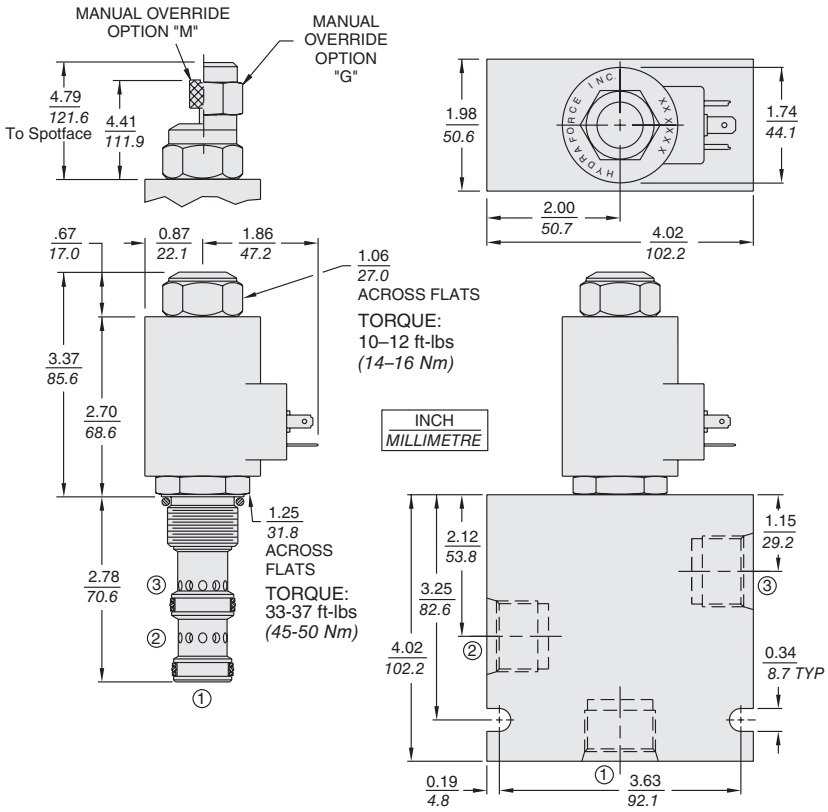
Flow vs. Pressure Drop
2-Ported; Flow Range A
240 bar/3500 psi Inlet
12V Coil; 110 Hz PWM
32 cSt/150 sus oil at 40°C (104°F)



Flow vs. Pressure Drop
2-Ported; Flow Range B
240 bar/3500 psi Inlet
12V Coil; 110 Hz PWM
32 cSt/150 sus oil at 40°C (104°F)



DIMENSIONS



MATERIALS

Cartridge: Weight: 0.42 kg. (0.93 lb.); with M option: 0.47 kg; (1.03 lb.); with G option 0.56 kg. (1.23 lb.). Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N O-rings and polyester elastomer back-ups standard.

Standard Ported Body: Weight: 1.09 kg. (2.4 lbs.) Anodized high-strength aluminum alloy, rated to 207 bar (3000 psi). Ductile iron bodies available; dimensions may differ. See page 8.012.1

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

PV72-30 __ __ - __ __ __ - __ - __ __ __ __

Flow Range
0-57 lpm (0-15 gpm) **A**
0-38 lpm (0-15 gpm) **B**

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

* Requires Coil Nut Kit P/N 4202180
** Requires Coil Nut Kit P/N 4001214

Porting
0 Cartridge Only
8T SAE 8
10T SAE 10
12T SAE 12
12TD SAE 12
4B 1/2 in. BSP*
6B 3/4 in. BSP*

*BSP Body; U.K. Mfr. Only

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

Voltage
0 Less Coil
12 12 VDC
24 24 VDC

Terminations D-Coil
DS Dual Spades
DL Leadwires (2)

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