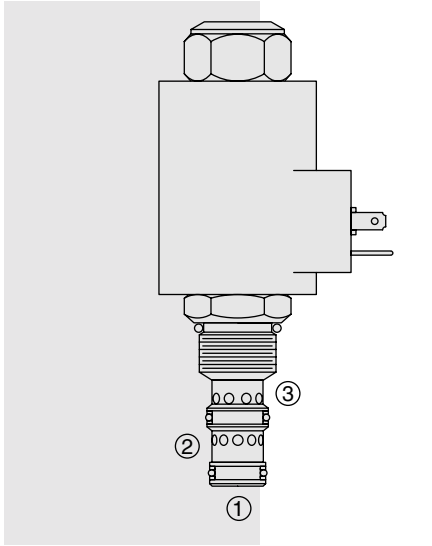


ELECTRO-PROPORTIONAL VALVES—FLOW CONTROLS

PV70-33 Proportional Flow Control Cartridge,



DESCRIPTION

A linear solenoid-driven, two-way normally closed, screw-in cartridge valve designed for use with a pressure compensator to function as an electrically stroked variable flow regulator.

OPERATION

With increasing electric current, the **PV70-33** changes from full closed to full open with flow from port ③ to port ②. Port ① is used only to pressure balance the spool and should be plugged. The proportional valve is intended to function in tandem with standard HydraForce pressure compensators at pressure differentials of 21 bar (300 psid) or less, or alone in variable volume pressure-compensated circuits with load sense capability.

The valve is designed to work with industry-common controllers which typically feature current capability to 2 amps @ 12 VDC, PWM, and start/stop trim adjustments (I-min./I-max.). Consult factory for details and potential sourcing.

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 characteristics.
- Optional control orifice sizes.
- 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: 207 bar (3000 psi)

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 (mA)		Max. Control Current (mA)	
	A & B Range	C Range	A & B Range	C Range
12 VDC	300 ± 70	360 ± 70	1500 ± 200	1400 ± 200
24 VDC	150 ± 35	180 ± 35	750 ± 100	700 ± 100

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.

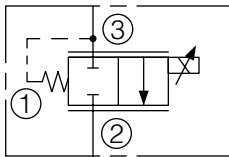
Cavity: VC10-3; See page 9.110.1

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

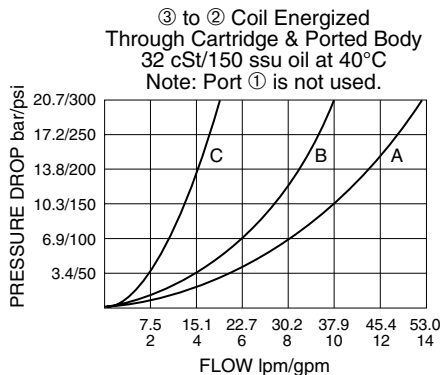
Seal Kit: SK10-3X-MM; See page 8.650.1

SYMBOLS

USASI/ISO:



PERFORMANCE



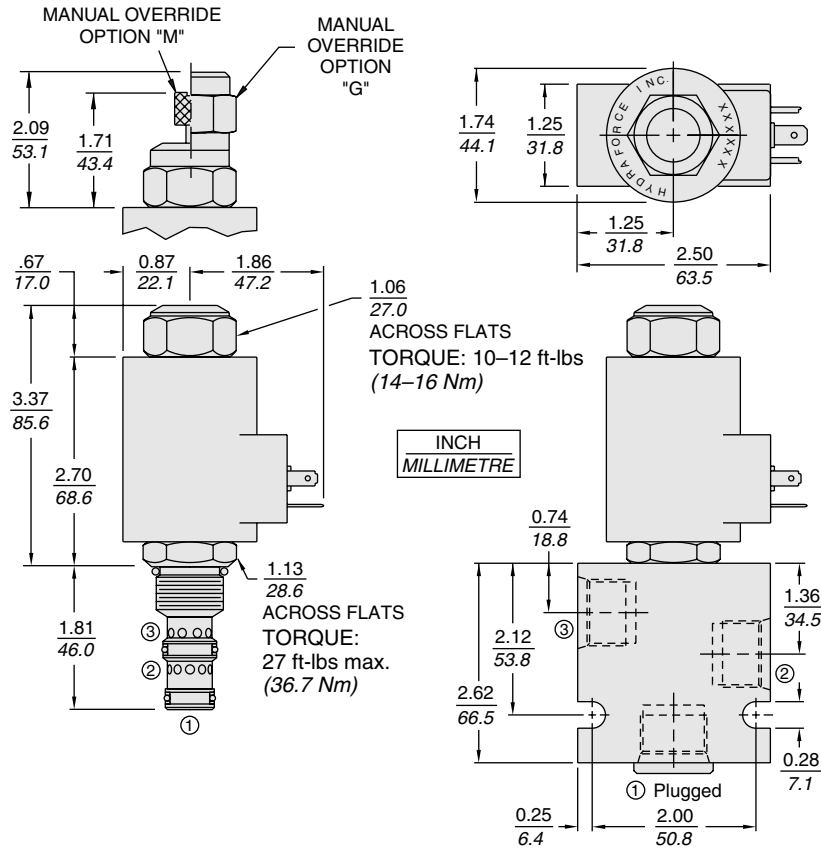
Recommended Controllers (See Section 3)

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

PV70-33

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 240 bar (3500 psi); See page 8.010.1. Steel and Ductile Iron bodies available; dimensions may differ; consult factory.

PV70 Series Coil: Weight: 0.32 kg. (0.7 lbs.); Unitized thermoplastic encapsulated, Class H high temperature magnet-wire; See page 3.200.7.

Port Plug: For SAE 6 Port: 6103006
For SAE 8 Port: 6103008;
See page 8.500.1.

TO ORDER

PV70-33		-	-	-	-
Flow Range (Refer to Performance Curves.)	A B C	Porting 0 Cartridge Only 6T SAE 6 8T SAE 8 2B 1/4 in. BSP* 3B 3/8 in. BSP*	Terminations Std. Coil DS Dual Spades DG DIN 43650 DL Leadwires (2) DL/W Leads w/Weatherpak® Connectors	Terminations E-Coil ER Deutsch DT04-2P (IP69K Rated)	
Option(s) None (Blank) Manual Override Manual Override with Guard	M G	*BSP Body; U.K. Mfr. Only			
		Seals Buna N (Std.) Fluorocarbon	N	Voltage 0 Less Coil 12 12 VDC 24 24 VDC	
			V		

Coils with internal diode are available. Consult factory.