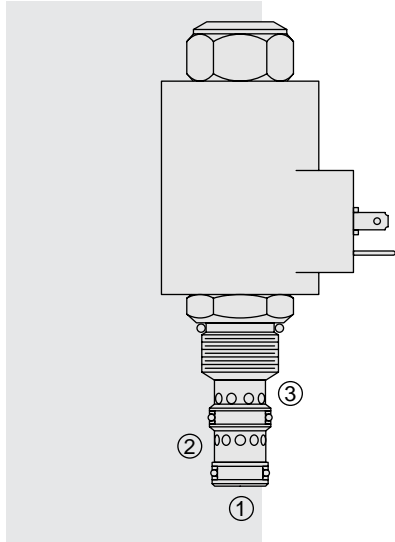


## ELECTRO-PROPORTIONAL VALVES—FLOW CONTROLS

## 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.

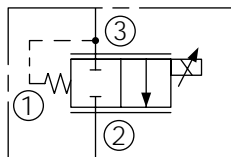
To Disengage: Turn counterclockwise approximately 6 turns to positive stop.

## FEATURES

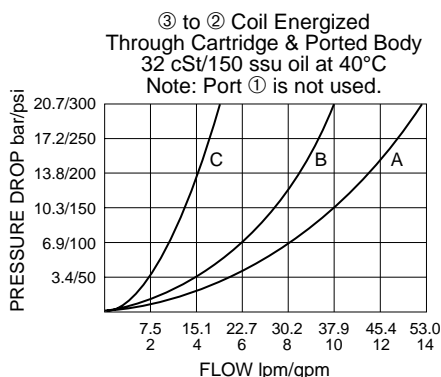
- Excellent linearity and hysteresis.
- Cartridges voltage interchangeable.
- Optional control orifice sizes.
- Unitized, molded coil design.
- Hardened spool and cage for long life.
- Coil waterproofing standard.
- Optional coil voltages and terminations.
- Manual override option.
- Efficient wet armature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

## SYMBOLS

## USASI/ISO:



## PERFORMANCE



## 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 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.

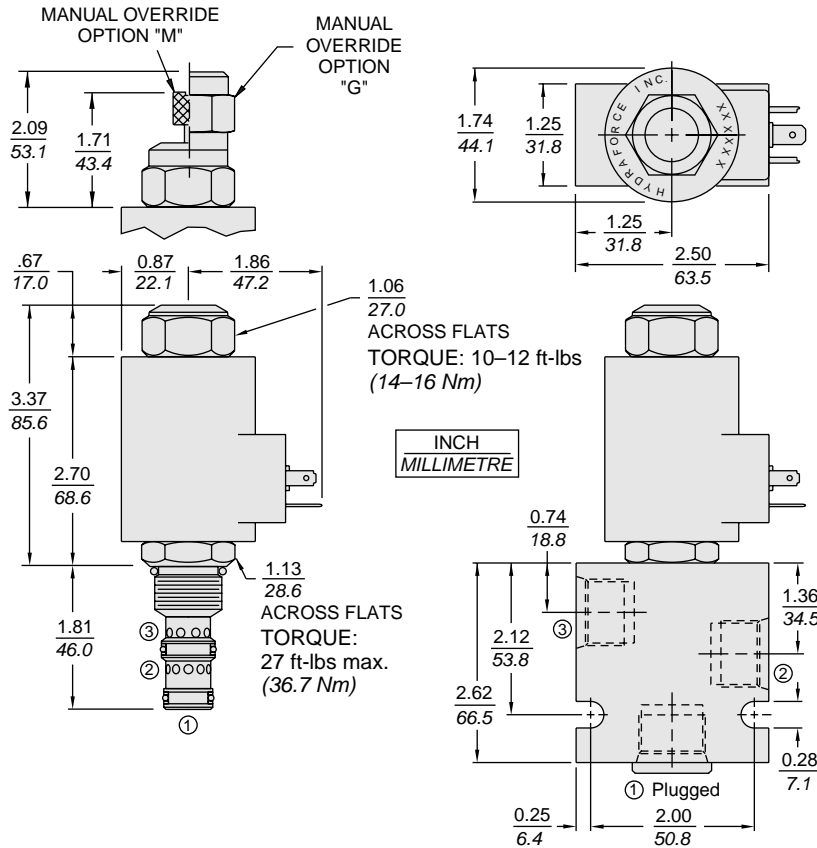
## Recommended Electronic Controllers:

See page 2.001.1 or our Electronics catalog.

# 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 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.

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

## TO ORDER

