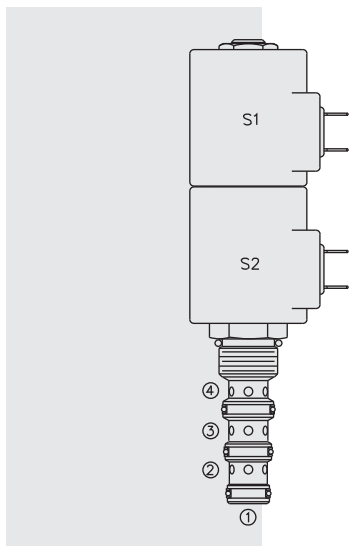
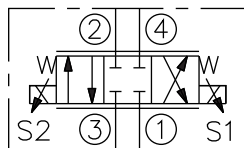


## ELECTRO-PROPORTIONAL VALVES—DIRECTIONAL CONTROL

**SP10-47C Spool, 4-Way, 3-Position, Closed Center****ISO SYMBOL****DESCRIPTION**

A proportional solenoid-operated, four-way, three-position, spool-type, closed center, screw-in hydraulic cartridge valve.

**OPERATION**

When de-energized, the **SP10-47C** blocks flow to all ports. When coil S1 is energized, flow is allowed from 3 to 4, and from 2 to 1. When coil S2 is energized, flow is allowed from 3 to 2, and from 4 to 1.

Initial meter-in flow begins at a nominal 0.4 amp on a 12 VDC system. Full flow of 6 gpm occurs at 1.1 to 1.2 amp on a 12 VDC system. Each coil has its own metering characteristics, which are quite similar (see performance chart).

While port 1 may be fully pressurized, it is not intended for use as the valve's inlet.

In circuits where work port flows are unequal due to cylinder ratios, the higher return flow should be directed to port 2.

**FEATURES**

- Continuous-duty rated solenoids.
- Hardened precision spool and cage for long life.
- Optional coil voltages and terminations.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Optional waterproof E-Coils rated up to IP69K.
- Optional manual override.
- Industry-common cavity.
- Designed for good linearity and hysteresis.

**RATINGS**

**Operating Pressure:** 250 bar (3625 psi)

**Flow Rating:** 22.7 lpm (6 gpm) max.; 20.8 lpm (5.5 gpm) with manual override B or M

**Internal Leakage:** 310 ml/minute (19 in<sup>3</sup>/minute) max. per side at 207 bar (3000 psi)

**Hysteresis:** Less than 10% of flow rating between 1.0 to 5.5 gpm

**Temperature:** -40 to 100°C (-40 to 212°F) with standard Buna seals; -26 to 204°C (-15 to 400°F) with fluorocarbon seals; -26 to 107°C (-65 to 225°F) with polyurethane seals

**Coil Duty Rating:** Standard Coils and E-Coils: Continuous up to 115% of nominal voltage

**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

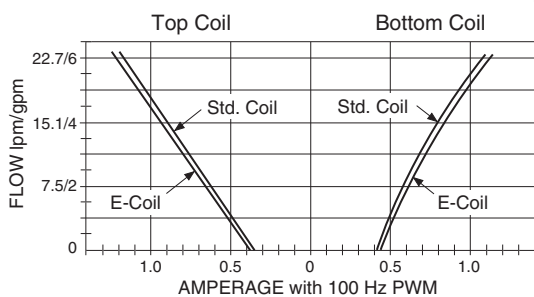
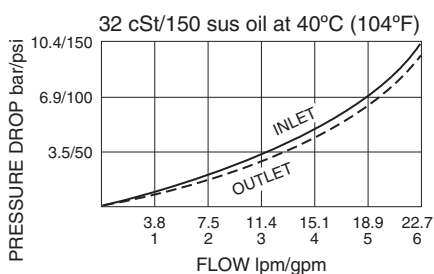
**Installation Recommendation:** When possible, the valve should be mounted below the reservoir oil level. This will maintain oil in the armature preventing trapped air instability. If this is not feasible, mount the valve horizontally for best results. See page 9.020.1

**Cavity:** VC10-4; See page 9.110.1; **Cavity Tool:** CT10-4XX; See page 8.600.1

**Seal Kit:** SK10-4X-MMM; See page 8.650.1

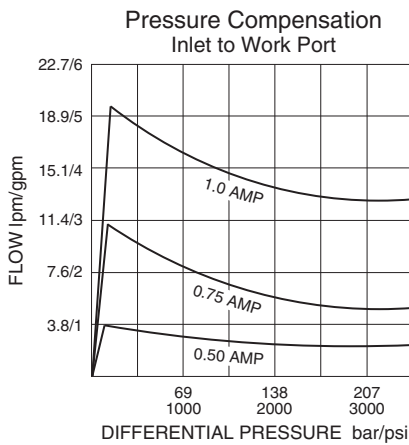
**Coil Nut:** Part No. 7004400; **Manual Override Coil Nut:** Part No. 4528180

**Coil Spacer:** Std. D-Coil Spacer Part No. 7009280; E-Coil Spacer Part No. 4539700; If cartridge is ordered "Less Coil," D-Coil spacer will be provided unless an E is specified in the Coil Termination To Order section.

**PERFORMANCE** (Cartridge Only)

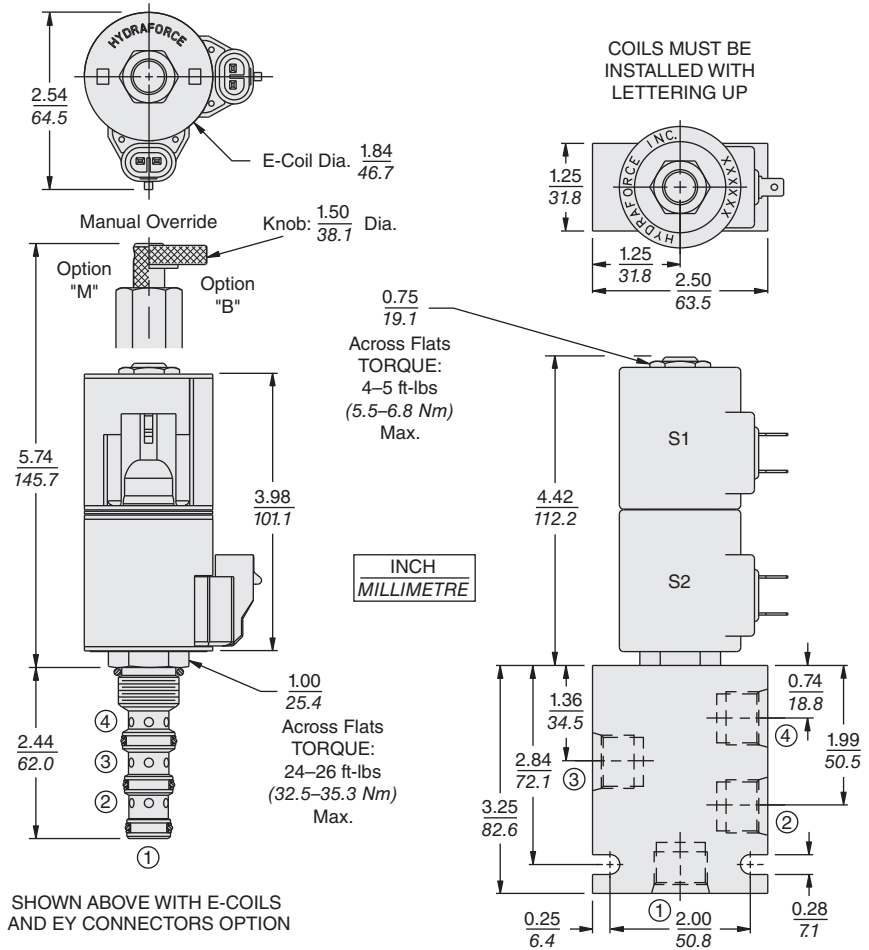
Performance information continued on following page.

**PERFORMANCE** (cont'd.)



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

**DIMENSIONS**



SHOWN ABOVE WITH E-COILS AND EY CONNECTORS OPTION

**MATERIALS**

**Cartridge:** Weight: 0.30 kg. (0.65 lbs.) Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N O-rings and back-ups std.

**Standard Ported Body:** Weight: 0.36 kg. (0.80 lbs.) Anodized high-strength aluminum alloy, rated to 207 bar (3000 psi). Ductile iron bodies available; dimensions may differ. See page 8.010.1.

**Standard Coil:** Weight each: 0.27 kg. (0.60 lbs.) Unitized thermoplastic encapsulated, Class H high temperature magnet wire. See page 3.200.1

**E-Coil:** Weight: 0.41 kg. (0.9 lbs.); Perfect wound, fully encapsulated with rugged external metal shell; Rated up to IP69K with integral connectors. See page 3.400.1

**TO ORDER**

**SP10-47C** - - -

- 1,000 Hour Salt Spray Coating **G**
- Option**
  - None (Blank)
  - Manual Override **M**
  - Manual Override **B**
- For Manual Override options see page 1.001.1
- Porting**
  - Cartridge Only **0**
  - SAE 6 **6T**
  - SAE 8 **8T**
  - 1/4 in. BSP\* **2B**
  - 3/8 in. BSP\* **3B**
- \*BSP Body; U.K. Mfr. Only
- Voltage Std. D-Coil**
  - 00** Less Coil\*\*
  - 12** 12 VDC
  - 24** 24 VDC
- \*\*Includes D-Coil Nut and Spacer.
- E-Coil**
  - 12** 12 VDC
  - 24** 24 VDC
- Seals**
  - N** Buna N (Std.)
  - V** Fluorocarbon
  - P** Polyurethane
- Coil Termination**
  - Less Coil w/Spacer **E**
  - Deutsch DT04-2P **ER** (IP69K)
  - Metri-Pack® 150 **EY** (IP69K)
  - Dual Lead Wires **EL** (IP69K)
  - Amp Jr. Timer **EJ** (IP67)
  - DIN 43650 **EG** (IP65)
  - Dual Spades **—**
- E-Coil**
  - E**
  - ER** (IP69K)
  - EY** (IP69K)
  - EL** (IP69K)
  - EJ** (IP67)
  - EG** (IP65)
  -
- D-Coil**
  - 
  - DR** (IP65)
  - DY** (IP65)
  - DL** (IP65)
  - 
  - DG** (IP65)
  - DS** (IP65)

For Coils with Zener Diode, add "Z" to option code. For example: "ER/Z". Not available on all models. See coil option info. on pages 3.200.1 & 3.400.1