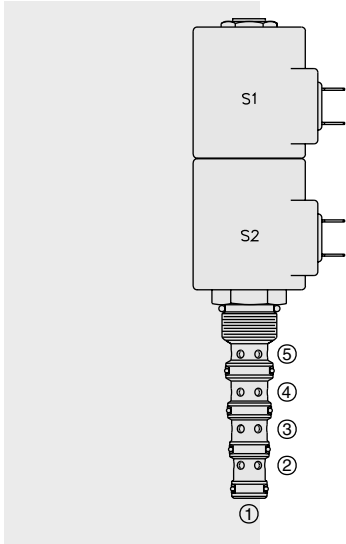


# ELECTRO-PROPORTIONAL VALVES—DIRECTIONAL CONTROL

## SP10-57D Spool, 5-Way, 3-Position . . .



### DESCRIPTION

A solenoid-operated, 5-way, 3-position, proportional, screw-in hydraulic cartridge valve with integral load-sense port.

### OPERATION

When de-energized, the **SP10-57D** blocks flow at ⑤ while allowing flow from both ② and ④ to ③. When coil #1 is energized, flow is allowed from ⑤ to ②, and from ④ to ③. When coil #2 is energized, flow is allowed from ⑤ to ④, and from ② to ③. Load sense is connected to port ⑤ when the spool is in shifted positions.

**Note:** If low voltage is expected on the machine, 12 or 24 volt systems will require the use of 10 volt or 20 volt coils respectively. See “SP Valves and Coil Operating Parameters,” page 2.002.1.

### FEATURES

- Continuous-duty rated solenoid.
- Hardened precision spool and cage for long life.
- Optional coil voltages and terminations.
- Optional manual override.
- Optional waterproof E-Coils rated up to IP69K.
- Cartridges are voltage interchangeable.

### RATINGS

**Operating Pressure:** 250 bar (3625 psi) with standard Buna N seals

**Flow:** 22.8 lpm (6 gpm) max. See performance chart

**Internal Leakage:** 246 cc/minute (15 cu. in./minute) max. at 207 bar (3000 psi)

**Temperature:** -40 to 120°C with standard Buna seals

**Coil Duty Rating:** Continuous from 85% 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)

**Installation:** No restrictions; See page 9.020.1

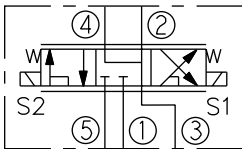
**Cavity:** VC10-5; See page 9.110.1; **Cavity Tool:** CT10-5XX; See page 8.600.1

**Seal Kit:** SK10-5X-MMMM; See page 8.650.1

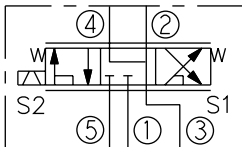
**Coil Nut:** Part No. 7004400; **Coil Spacer** for E-Coils: Part No. 4539700

### SYMBOLS

#### USASI:



#### ISO:



#### Recommended Controller

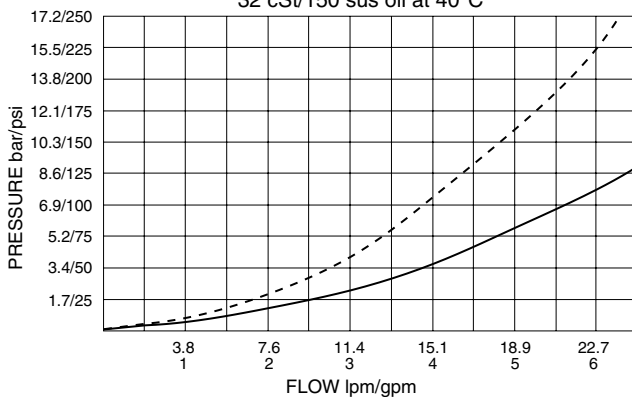
**Dual Solenoid Driver**  
**Part No. 4000149**  
 (See page 3.550.1)

### PERFORMANCE (Cartridge Only)

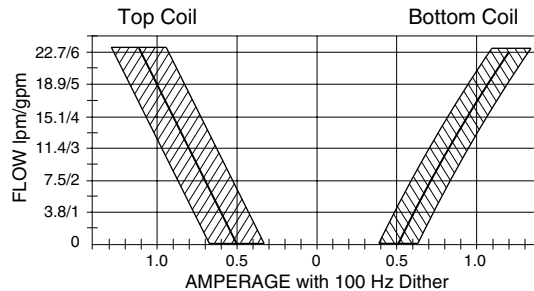
⑤ to ② or ⑤ to ④ at 100% current, S1 or S2 energized: - - - - -

④ to ③ or ② to ③ at 100% current, S1 or S2 energized: ————

32 cSt/150 sus oil at 40°C



Performance with 12 VDC Coils  
 and 10.3 bar/150 psi inline compensator  
 (for other voltages consult factory)

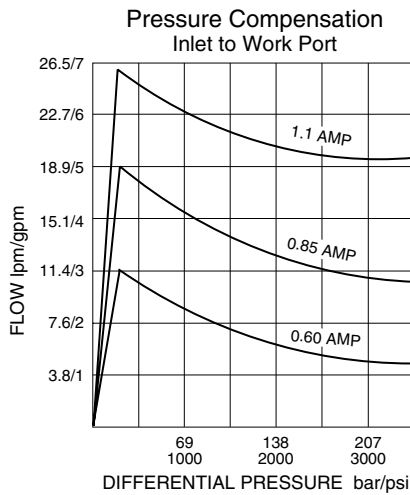


Performance information continued on following page.

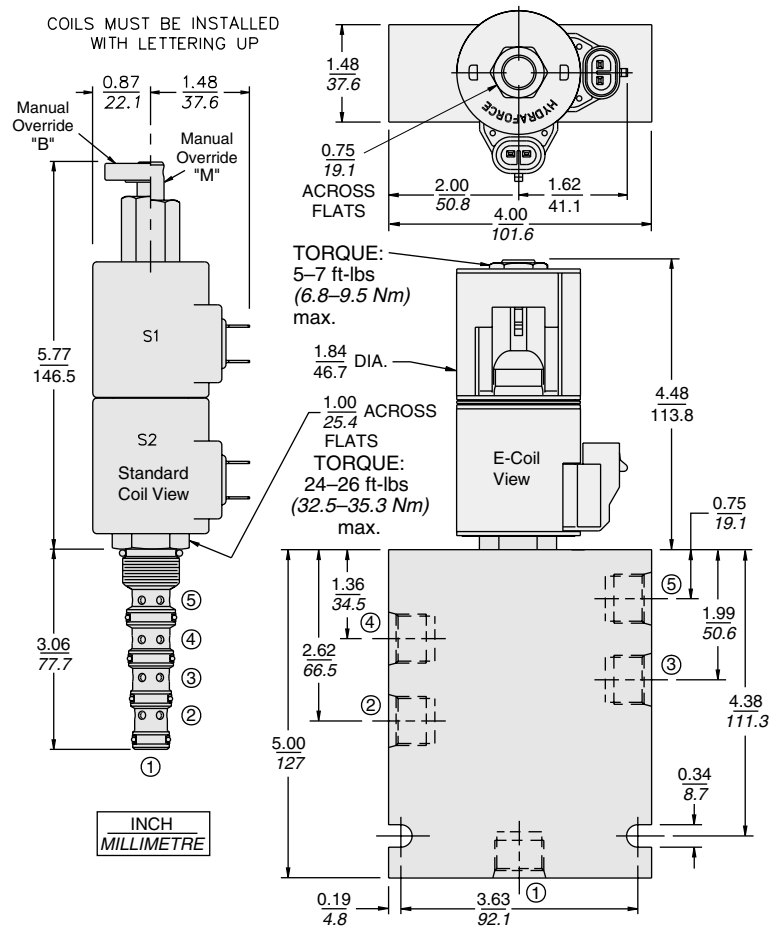
# for Load Sense Applications

# SP10-57D

## PERFORMANCE (Continued)



## DIMENSIONS



## MATERIALS

**Cartridge:** Weight: 0.36 kg. (0.80 lbs.); Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N O-rings and polyester elastomer back-up standard.

**Standard Ported Body:** Weight: 0.41 kg. (0.85 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.

**Standard Coils:** Weight each: 0.27 kg. (0.60 lbs.); Unitized thermoplastic encapsulated, Class H high temperature magnetwire; See page 3.200.1.

**E-Coils:** Weight each: 0.41 kg. (0.9 lbs.); Fully encapsulated with rugged external metal shell; Rated up to IP69K with integral connectors.

## TO ORDER

<b>SP10-57D</b>			
<b>Option</b>		<b>Voltage Std. Coil</b>	<b>Termination (VDC) Std. Coil</b>
None (Blank)		0 Less Coil**	DS Dual Spades
Manual Override B		10 10 VDC†	DG DIN 43650
Manual Override M		12 12 VDC	DL Leadwires (2)
		20 20 VDC	DL/W Leads w/Weatherpak® Connectors
		24 24 VDC	DR Deutsch DT04-2P
<b>Porting</b>		**Includes coil nut and coil spacer	<b>Termination (VDC) E-Coil</b>
Cartridge Only 0		† DS, DW or DL terminations only	ER Deutsch DT04-2P (IP69K Rated)
SAE 6 6T			EY Metri-Pack® 150 (IP69K Rated)
SAE 8 8T		<b>E-Coil</b>	
		10 10 VDC	
<b>Seals</b>		12 12 VDC	
Buna N (Std.) N		20 20 VDC	
Fluorocarbon V		24 24 VDC	

Coils with internal diode are available. Consult factory.