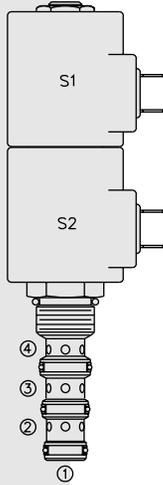


ELECTRO-PROPORTIONAL VALVES—DIRECTIONAL CONTROL

SP10-47D Spool, 4-Way, 3-Position, "Motor Spool"



DESCRIPTION

A proportional solenoid-operated, 4-way, 3-position, spool-type, motor spool, screw-in hydraulic cartridge valve.

OPERATION

When de-energized, the **SP10-47D** blocks flow to ③ while allowing flow from ② to ①, and from ④ to ①. 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 port 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: 207 bar (3000 psi)

Flow: 22.7 lpm (6 gpm) max. (see performance chart)

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

Hysteresis: Less than 7%

Temperature: -40 to 120°C with standard Buna 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 ssu)

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

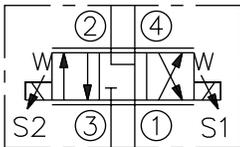
Coil Nut: Part No. 7004400; **Manual Override Coil Nut:** Part No. 4528180

Coil Spacer: Part No. 4539700

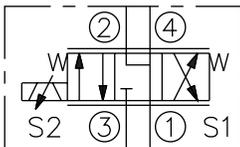
For E-coils manufactured prior to 1-1-04, see page 3.400.1 for coil nut & spacer info.

SYMBOLS

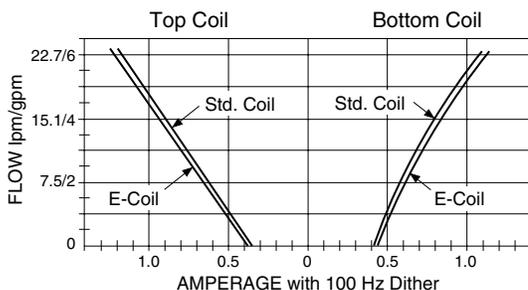
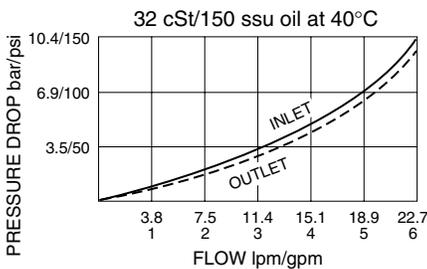
USASI:



ISO:



PERFORMANCE (Cartridge Only)



Recommended Controller

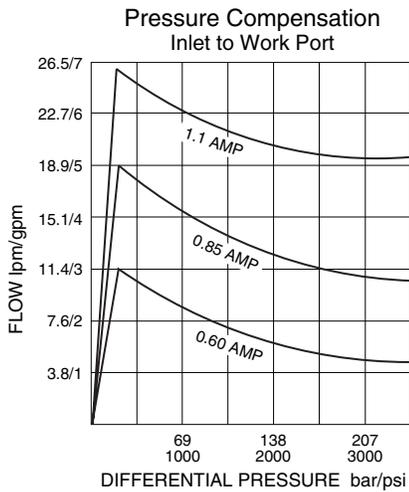
Dual Solenoid Driver

Part No. 4000149

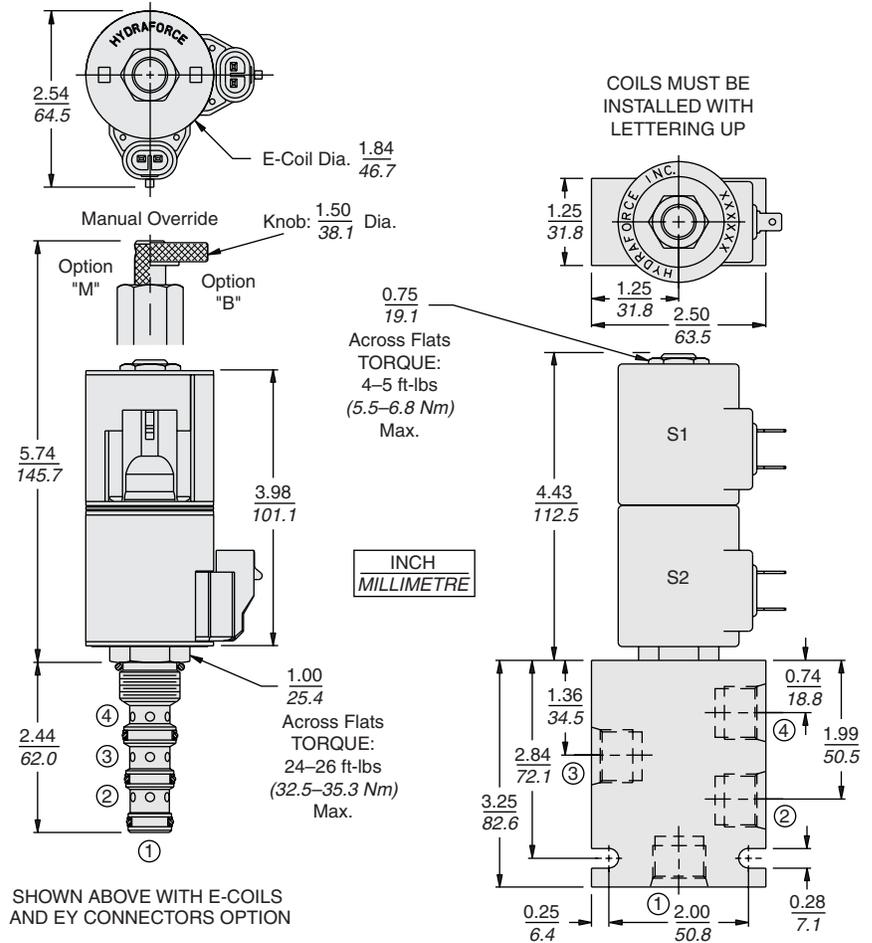
(See page 3.550.1)

Performance information continued on following page.

PERFORMANCE (cont'd.)



DIMENSIONS



MATERIALS

Cartridge: Weight: 0.30 kg. (0.65 lbs.) Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N O-rings and single-turn polyester elastomer back-ups standard.

Standard Ported Body: Weight: 0.34 kg. (0.75 lbs.); Anodized high-strength 6061 T6 aluminum alloy, rated to 240 bar (3500 psi); See page 8.010.1. Ductile iron and steel bodies available; consult factory.

Standard Coil: (2 required) Weight each: 0.27 kg. (0.60 lbs.); Unitized thermoplastic encapsulated, Class H high temperature magnetwire; See page 3.200.1.

E-Coil: (2 required) Weight each: 0.41 kg (0.9 lbs.); Fully encapsulated with external metal shell; See page 3.400.1.

TO ORDER

SP10-47D

