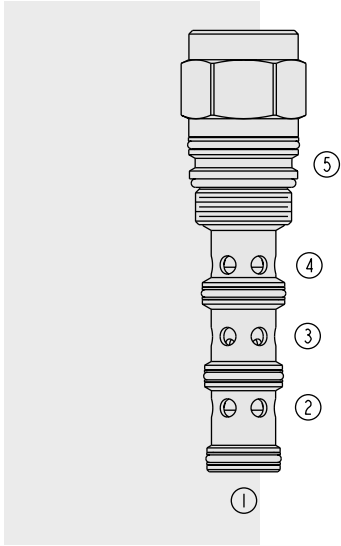


# DIRECTIONAL VALVES

## PD16-S51 Piloted 3-Way Spool



### DESCRIPTION

A screw-in, cartridge-style, pilot-operated, spool-type, hydraulic directional valve.

### OPERATION

When in neutral the PD16-S51 allows flow between ports ②, ③ and ④. On remote pilot signal at ①, the valve's spool shifts to block all ports. The spring chamber is vented to the tank through port ⑤. The vented spring chamber allows the valve to be fully pressurized at ports ①, ②, ③, and ④ without affecting required pilot pressure. Pressure at port ⑤ will affect required pilot pressure.

### FEATURES

- Hardened spool and cage for long life.
- 70, 90 and 170 psi bias springs available.

### RATINGS

**Operating Pressure:** 240 bar (3500 psi)

**Flow:** 0–151 lpm (0–40 gpm); See Performance Chart

**Internal Leakage at 207 bar (3000 psi):** 410 ml/minute (25 cu. in./minute) between ports ③ and ②. 820 ml/minute (50 cu. in./minute) between ports ③ and ④.

**Pilot Pressure Required:** 4.1 bar (60 psi) minimum

**Oil Volume Required to Full Shift:** 1.83 cc (0.11 cu. in.)

**Temperature:** -40 to 120°C

**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

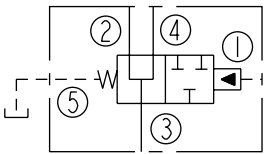
**Cavity:** VC16-S5; See page 9.116.1

**Cavity Tool:** CT16-S5XX; See page 8.600.1

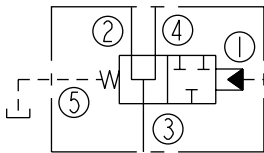
**Seal Kit:** SK16-S5X-BMMM; See page 8.650.1

### SYMBOLS

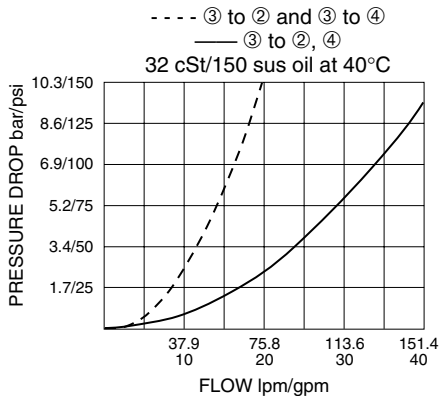
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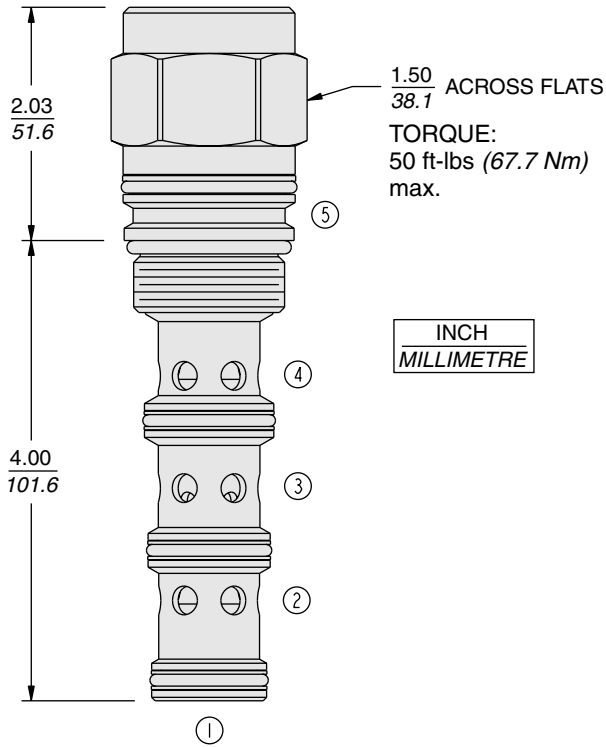
#### ISO:



### PERFORMANCE (Cartridge Only)



**DIMENSIONS**



**MATERIALS**

**Cartridge:** Weight: 0.25 kg. (0.55 lbs.);  
Steel with hardened work surfaces.  
Zinc-plated exposed surfaces. Buna  
N O-rings and polyester elastomer  
back-ups standard.

**Ported Body:** Consult factory.

**TO ORDER**

**PD16-S51 -**

**Porting**  
Cartridge Only **0**

**Bias Spring†**

- 70** 4.8 bar (70 psi)
- 90** 6.2 bar (90 psi)
- 170** 11.7 bar (170 psi)

Optional bias springs considered  
on OEM request.

†Note: 90 psi bias spring is the  
minimum required for use with  
sealed spool.

**Seals**

- N** Buna N (Std.)
- V** Fluorocarbon
- NS** Buna N w/Sealed Spool ① to ② only
- VS** Fluorocarbon w/Sealed Spool ① to ② only