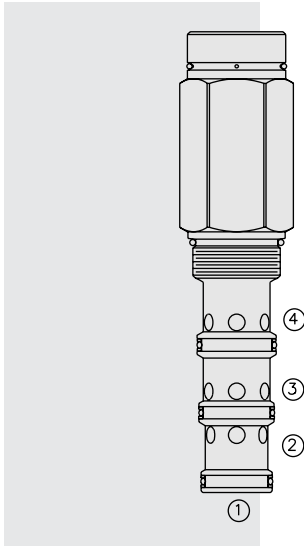


# DIRECTIONAL VALVES

## PD42-M41 Piloted 3-Way Spool, Internal Vent



### DESCRIPTION

A screw-in, cartridge-style, pilot-operated, spool-type, hydraulic directional valve for three-way circuits requiring remote pilot actuation.

### OPERATION

In neutral (unpiloted), the **PD42-M41** allows flow from ③ to ④ while ② is blocked. On remote pilot signal at ①, the valve shifts to open from the ③ to ② flow path, while blocking flow to ④.

Note that ④ is common to the spring chamber. Pressure on ④ will directly (1:1) affect required pilot pressure and must always be added to the bias spring value.

**Note:** Consult factory for applications where bi-directional flow is required when the valve is in the normal or spring-offset position.

### FEATURES

- Hardened spool and cage for long life.
- Optional sealed pilot.
- Industry-standard ISO cavity.

### RATINGS

**Maximum Operating Pressure:** With Polyurethane Seals: Ports ①, ②, & ③: 345 bar (5000 psi); Port ④: 210 bar (3000 psi)

**Flow:** See Performance Chart

**Internal Leakage at Maximum Operating Pressure:**

Ports ②, ③, & ④: 246 cc/minute (15 cu. in./minute);

Port ①: 524 cc/minute (32 cu. in./minute)

With the sealed pilot there is no leakage at ① at maximum operating pressure.

**Pilot Pressure Required:**

To Begin Spool Movement: 11 bar (160 psi)

To Bring Spool to Cross-Over Point: 16.2 bar (235 psi)

To Fully Shift the Spool: 18.3 bar (265 psi)

**Oil Volume Required to Full Shift:** 2.5 cc (0.15 cu. in.)

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

**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

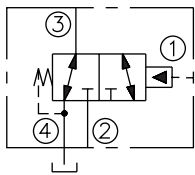
**Cavity:** VC42-M4; See page 9.142.1

**Cavity Tool:** CT42-M4XX; See page 8.600.1

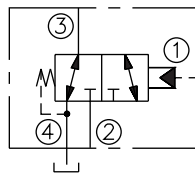
**Seal Kit:** SK42-4X-MMM; See page 8.650.1

### SYMBOLS

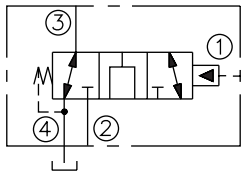
**USASI:**



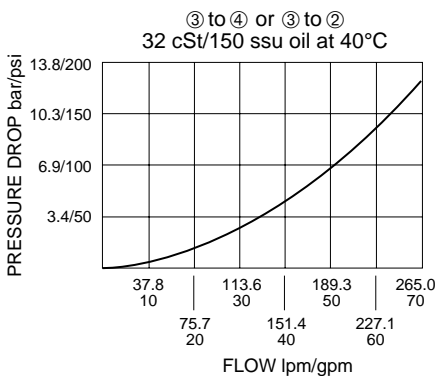
**ISO:**



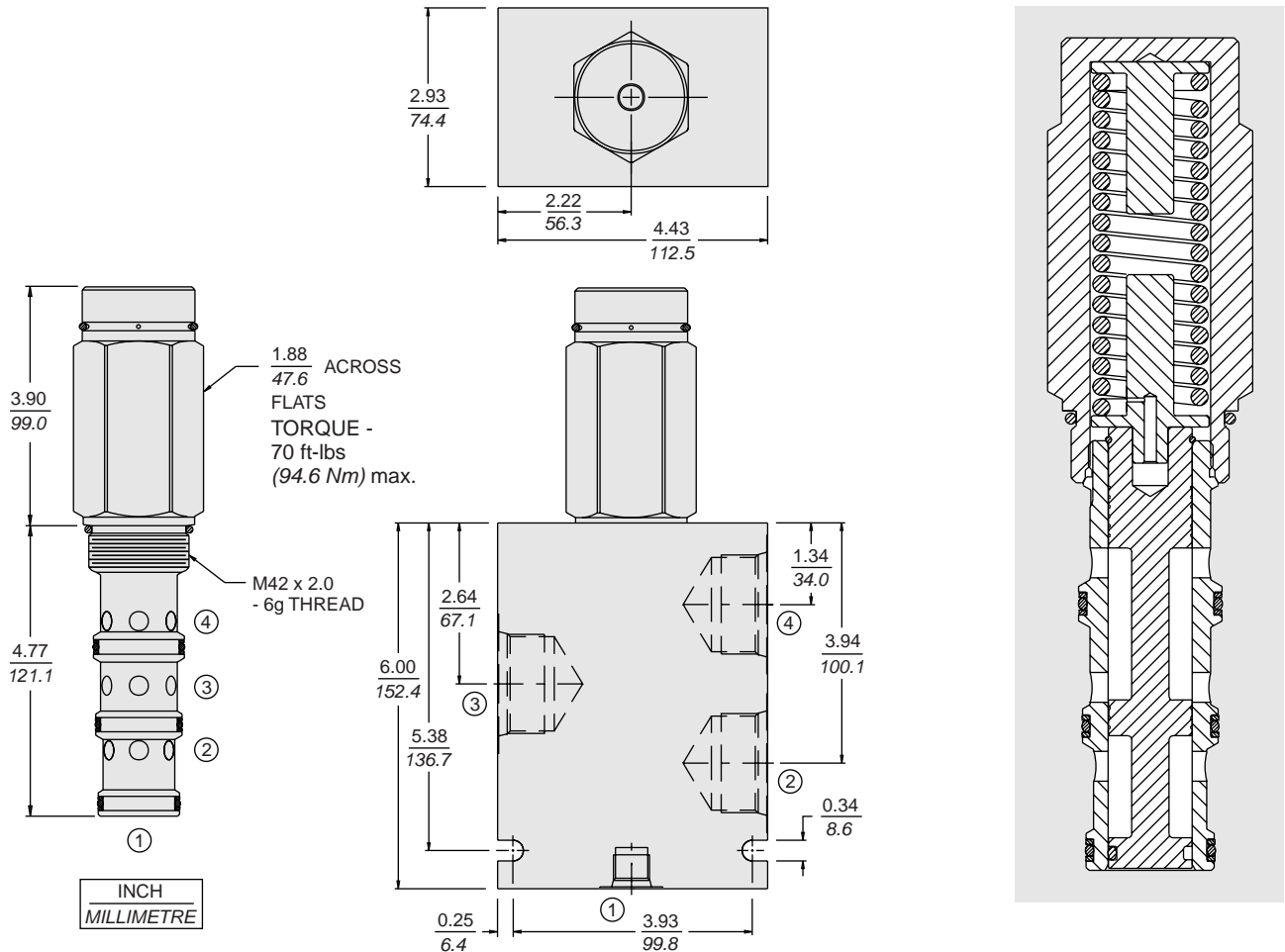
**OPEN TRANSITION:**



### PERFORMANCE (Cartridge Only)



## DIMENSIONS



## MATERIALS

**Cartridge:** Weight: 0.52 kg. (1.15 lbs.)  
 Steel with hardened work surfaces.  
 Zinc-plated exposed surfaces.  
 Buna N O-rings and polyester elastomer back-ups standard.

**Standard Ported Body:** Weight: 2.8 kg. (6.2 lbs.)  
 Anodized high-strength 6061 T6 aluminum alloy, rated to 207 bar (3000 psi). Ductile iron bodies available; dimensions may differ. See page 8.042.1

## TO ORDER

**PD42-M41 - - -160<sup>†</sup>**

**Option**

- None (Blank)
- Open Transition **N**

**Porting**

- Cartridge Only **0**
- SAE 16, SAE 6 Pilot **16T**
- \*SAE 16, SAE 6 Pilot **16TD**
- SAE 20, SAE 6 Pilot **20T**

**Seals**

- N** Buna N (Std.)
- NS** Buna N with Sealed Spool
- V** Fluorocarbon
- VS** Fluorocarbon with Sealed Spool
- P** Polyurethane\*\*
- PS** Polyurethane with Sealed Spool\*\*

**†**160 psi bias spring standard. Optional bias springs considered on OEM request.

\*Ductile iron body for pressures over 207 bar/3000 psi

Note: All bodies are PD type.

\*\*Required for pressures over 3500 psi