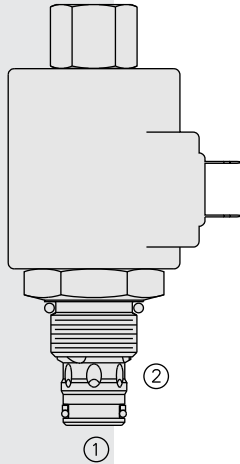


# ELECTRO-PROPORTIONAL VALVES—PRESSURE CONTROLS

## TS10-26 Proportional Electric Relief w/Internally

Patent Pending



### DESCRIPTION

A screw-in, cartridge-style, pilot-operated, spool-type hydraulic relief valve, which can be infinitely adjusted across a prescribed range using a variable electric input. Pressure output is proportional to DC current input. This valve is intended for use as a pressure limiting device in demanding applications.

### OPERATION

The **TS10-26** blocks flow from ① to ② until sufficient pressure is present at ① to open the pilot section by offsetting the electrically induced solenoid force. With no current applied to the solenoid, the valve will relieve at approximately 100 psi.

The optional manual override allows the valve to be set when the electric supply is lost. The manual setting is added to the electric setting. To prevent the system from being over pressurized, the manual override should always be disengaged prior to applying power to the coil.

### FEATURES

- Optional Manual Override.
- Optional waterproof E-Coils rated up to IP69K.
- 12 and 24 volt coils standard.
- Industry common cavity.

### RATINGS

**Maximum Operating Pressure:** 241 bar (3500 psi)

**Maximum Control Current:** 1.10 amps for 12 VDC coil; 0.55 amps for 24 VDC coil

**Relief Pressure Range from Zero to Maximum Control Current:**

**A:** 6.9–207 bar (100–3000 psi)

**C:** 6.9–117 bar (100–1700 psi)

**B:** 6.9–159 bar (100–2300 psi)

**Rated Flow:** 94.6 lpm (25 gpm),  $\Delta P=13.1$  bar (190 psi), Cartridge only, ① to ② coil de-energized

**Maximum Pilot Flow:** 0.76 lpm (0.2 gpm)

**Hysteresis:** Less than 3%

**Flow Path:** Free Flow: ① to ② coil de-energized; Relieving: ① to ② coil energized

**Temperature:** -40 to 100°C (-40 to 212°F) with standard Buna N 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 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.

**Cavity:** VC10-2; See page 9.110.1; **Cavity Tool:** CT10-2XX; See page 8.600.1

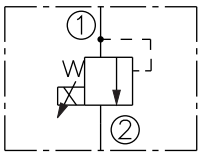
**Seal Kit:** SK10-2N-B; See page 8.650.1

**Coil Nut:** Part No. 4540560;

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

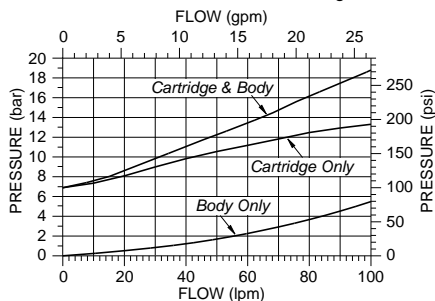
### SYMBOLS

#### USAS/ISO:

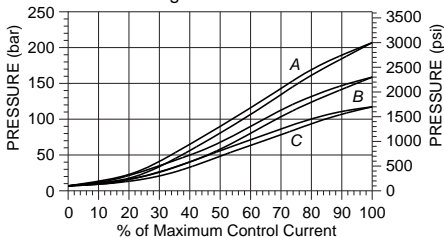


### PERFORMANCE

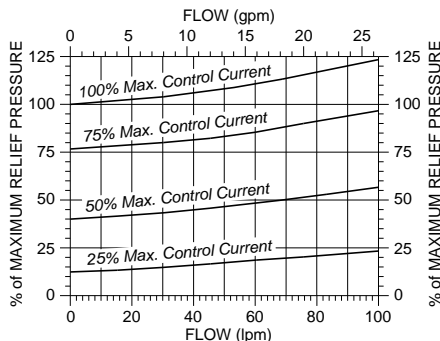
Pressure Drop vs. Flow Characteristic For Flow ① to ② with Coil De-energized



Relief Pressure vs. Current (DC) Characteristic 200 Hz PWM Relieving Pressure ① to ②



Typical Relief Pressure vs. Flow Characteristic Typical Relieving Pressure ① to ② at Various %'s of Maximum Control Current Pressure Range "A" (207 bar/3000 psi); Cartridge in Body



#### Recommended Electronic Controllers:

Model **EFDR2** Multi-Input Fan Drive Controller. For more information go to: <http://www.hydraforce.com/Electro/fandrive.htm> or

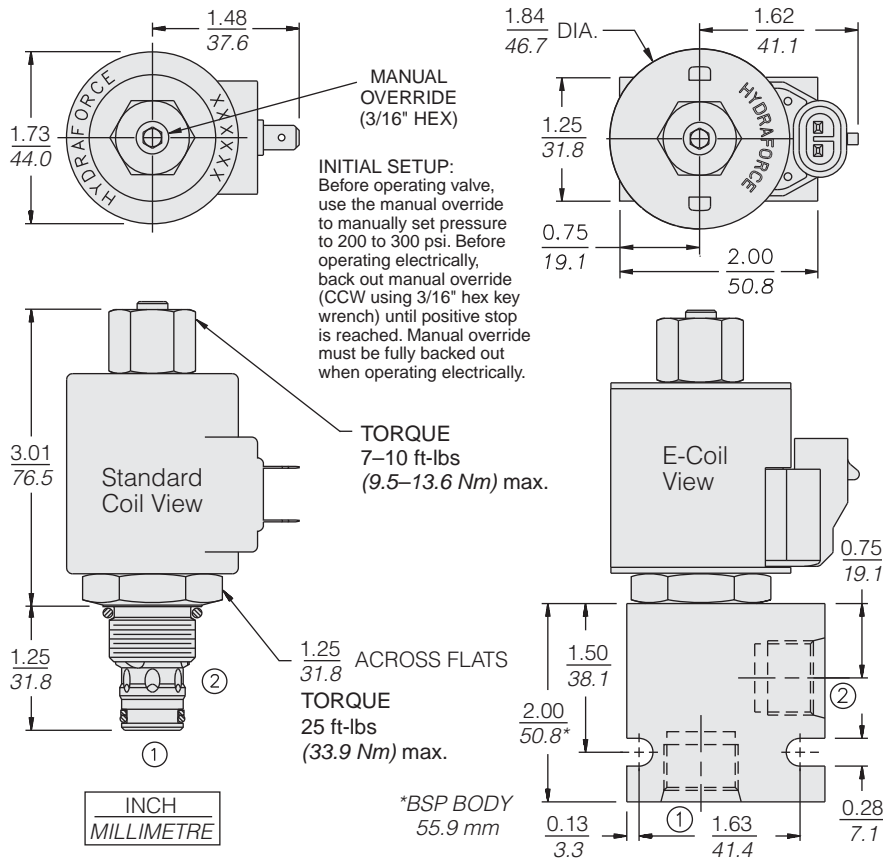
Recommended Electronic Controllers catalog page 2.001.1 (Table 2)

# Piloted Spool

TS10-26

## DIMENSIONS

Patent Pending



## 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. Optional polyurethane seals with fluorocarbon back-up recommended for pressures over 240 bar (3500 psi).

**Standard Ported Body:** Weight: 0.16 kg. (0.35 lbs.)  
Anodized high-strength 6061 T6 aluminum alloy, rated to 207 bar (3000 psi). Ductile iron bodies available; dimensions may differ. See page 8.010.1

**Standard Coil:** Weight: 0.32 kg. (0.7 lbs.)  
Unitized, thermoplastic encapsulated, Class H high temperature magnetwire. See page 3.200.1

**E-Coil:** Weight: 0.41 kg. (0.9 lbs.) Fully encapsulated with rugged external metal shell. Rated up to IP69K with integral connectors. **Note: See page 3.400.1 for all E-Coil retrofit applications.**

## TO ORDER

### TS10-26

**Maximum Relief Pressure**

- 207 bar (3000 psi) **A**
- 159 bar (2300 psi) **B**
- 117 bar (1700 psi) **C**

**Option**

- None (Blank)
- Manual Override **M**

**Porting**

- Cartridge Only **0**
- SAE 6 **6T**
- SAE 8 **8T**
- 3/8 in. BSP\* **3B**
- 1/2 in. BSP\* **4B**

\*BSP Body; U.K. Mfr. Only

**Seals**

- Buna N (Std.) **N**
- Fluorocarbon **V**

**Termination Std. Coil**

- DS** Dual Spades
- DG** DIN 43650
- DL** Leadwires (2)
- DL/W** Leads w/Weatherpak® Connectors
- DR** Deutsch DT04-2P

**Termination E-Coil**

- ER** Deutsch DT04-2P (IP69K Rated)
- EY** Metri-Pack® 150 (IP69K Rated)

Coils with internal diode are available. Consult factory.

**Voltage**

- 0** Less Coil
- 10** 10 VDC (1.30 amps max.)
- 12** 12 VDC (1.10 amps max.)
- 20** 20 VDC (0.65 amps max.)
- 24** 24 VDC (0.55 amps max.)