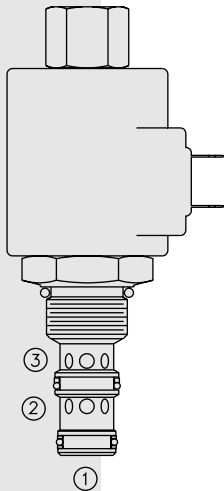


TS10-36 Proportional Electric Reducing/Relieving

Patent Pending



DESCRIPTION

A screw-in, cartridge-style, pilot-operated, spool-type reducing/relieving 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 TS10-36 allows flow from ② to ① until sufficient pressure is present at ① to open the pilot section by offsetting the electrically induced solenoid force. Increasing electric current will increase the control (reduced) pressure at ①. With no current applied to the solenoid, the valve will maintain pressure at ① at approximately 100 psi, regardless of pressure at ②.

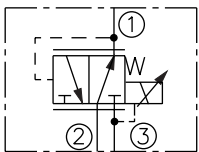
The TS10-36 has an optional manual override feature. This allows the valve to be set when the electric supply is lost. The manual setting is added to the electric setting, so when using the manual override feature to establish a minimum setting, care is required to prevent the system from becoming over-pressurized.

FEATURES

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

SYMBOLS

USAS/ISO:



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); **B:** 6.9–159 bar (100–2300 psi)

C: 6.9–117 bar (100–1700 psi)

Rated Flow: 56.8 lpm (15 gpm), $\Delta P=22.8$ bar (330 psi), Cartridge only, ① to ③ coil de-energized

Maximum Pilot Flow: 0.76 lpm (0.2 gpm)

Flow Path: Free Flow: ① to ③ coil de-energized; Reduced: ② to ① coil energized; Relieving: ① to ③ coil energized

Temperature: -40 to 120°C (-40 to 250°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 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.

Cavity: VC10-3; See page 9.110.1; **Cavity Tool:** CT10-3XX; See page 8.600.1

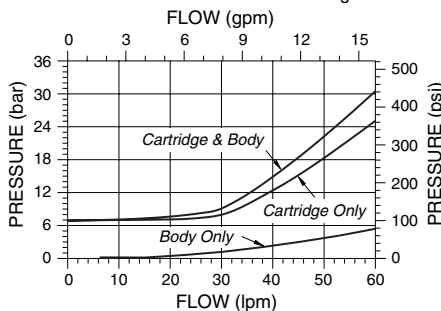
Seal Kit: SK10-3N-BM; See page 8.650.1

Coil Nut: Part No. 4540560;

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

PERFORMANCE

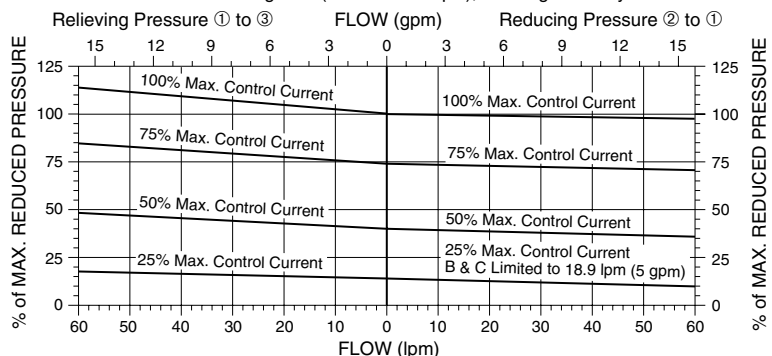
Pressure Drop vs. Flow Characteristic
For Flow ① to ③ with Coil De-energized



Typical Relieving/Reducing Pressure vs. Flow Characteristic

Typical Relieving Pressure at Various %'s of Maximum Control Current

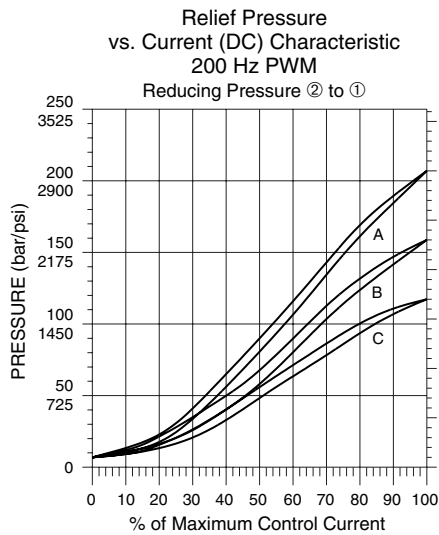
Pressure Range "A" (207 bar/3000 psi); Cartridge in Body



Valve w/Internally Piloted Spool

TS10-36

PERFORMANCE (continued)

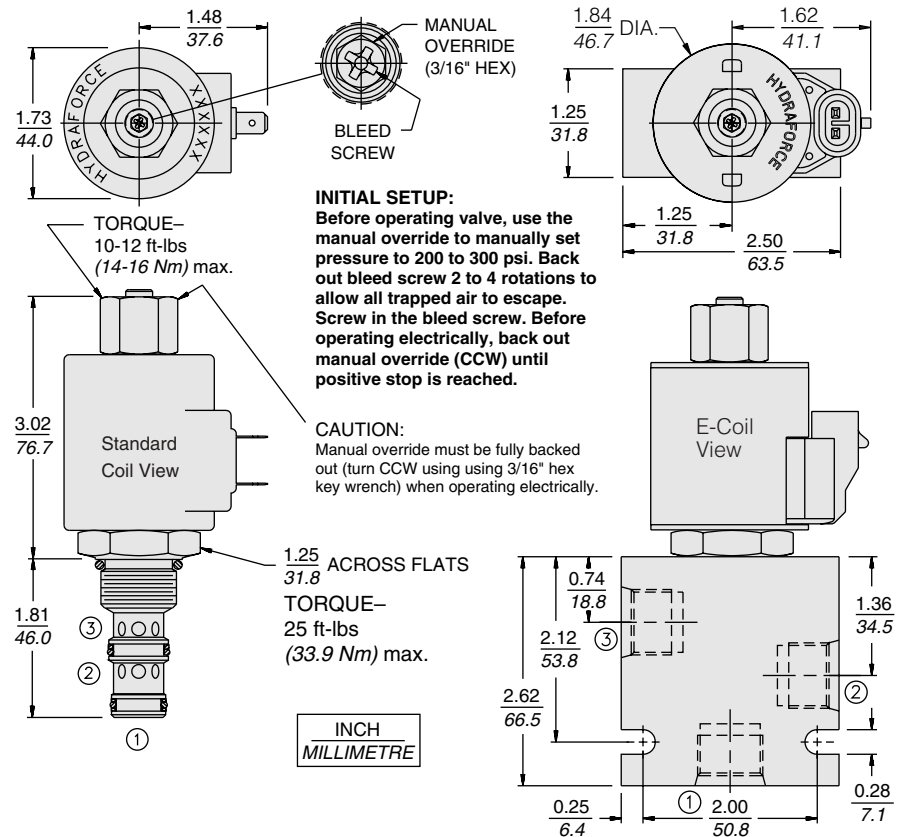


Recommended Controllers (See Section 3)

Input Sig. w/12V or 24V Coil	DIN Coil Mount	PCB Board	Metal Box	DIN Rail Mount
0-5 VDC	4000161	4000194	4000174	4000136
0-10 VDC	4000165	4000141	4000182	4000137
4-20 mA	4000169	4000143	4000186	4000139
PWM	—	4000144	4000133	4000140

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 240 bar (3500 psi); See page 8.010.1. Ductile iron and steel bodies available; dimensions may differ; consult factory.

Standard Coil: Weight: 0.27 kg. (0.6 lbs.); Unitized thermoplastic encapsulated, Class H high temperature magnet-wire; 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

TS10-36

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.)