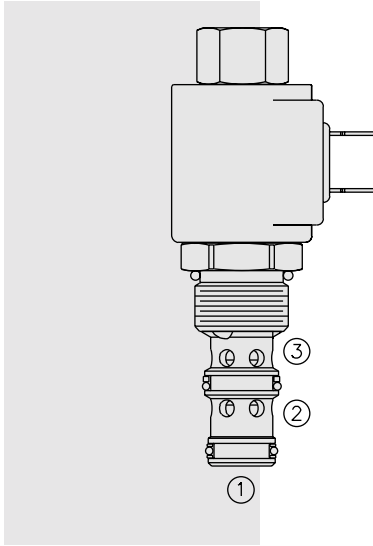


TS80-30 Proportional Reducing/Relieving Valve



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 control device in demanding applications.

OPERATION

The **TS80-30** allows free flow from ① to ③ when no current is applied to the coil. When the coil is energized, ② is connected to ①. Increasing current applied to the coil will increase the control (reduced) pressure proportionally. If pressure at ① exceeds the setting induced by the coil, pressure from ① is relieved to ③.

Note: Back pressure on port ③ becomes additive to the pressure setting at a 1:1 ratio.

FEATURES

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

RATINGS

Maximum Inlet Pressure: 40 bar (580 psi)

Maximum Control Current: 0.65 amps for 12 VDC coil; 0.33 amps for 24 VDC coil

Reducing/Relieving Pressure Range from Zero to Maximum Control Current: 0–20 bar (0–290 psi)

Rated Flow: 20.8 lpm (6.0 gpm), $\Delta P=7.6$ bar (110 psi), Cartridge only, ① to ③ coil de-energized

Maximum Pilot Flow: 0.76 lpm (0.2 gpm)

Hysteresis: Less than 3%

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

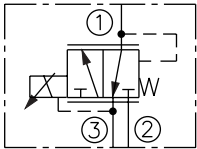
Seal Kit: SK10-3X-BM; See page 8.650.1

Coil Nut: Part No. 7004410;

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

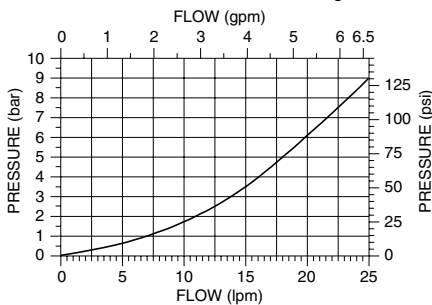
SYMBOLS

USAS/ISO:

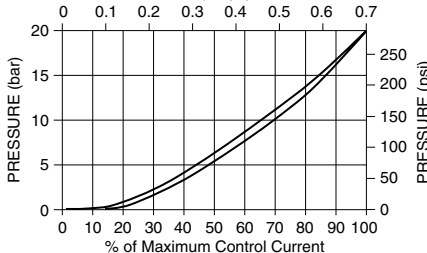


PERFORMANCE

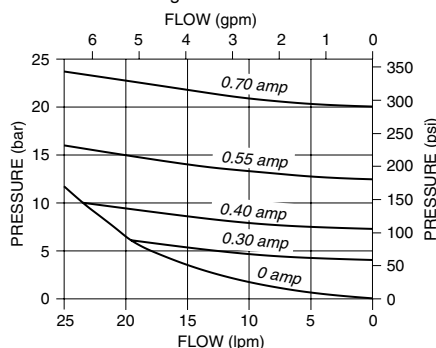
Pressure Drop vs. Flow Characteristic
For Flow ① to ③ with Coil De-energized



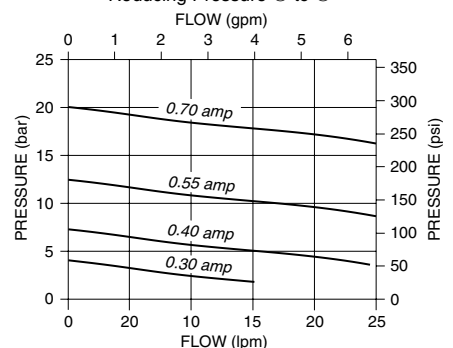
Regulated Pressure
vs. Current Characteristic, 200 Hz PWM
Control Current (Amps), Smooth DC



Reduced Pressure vs. Flow
Relieving Pressure ① to ③



Reduced Pressure vs. Flow
Reducing Pressure ② to ①



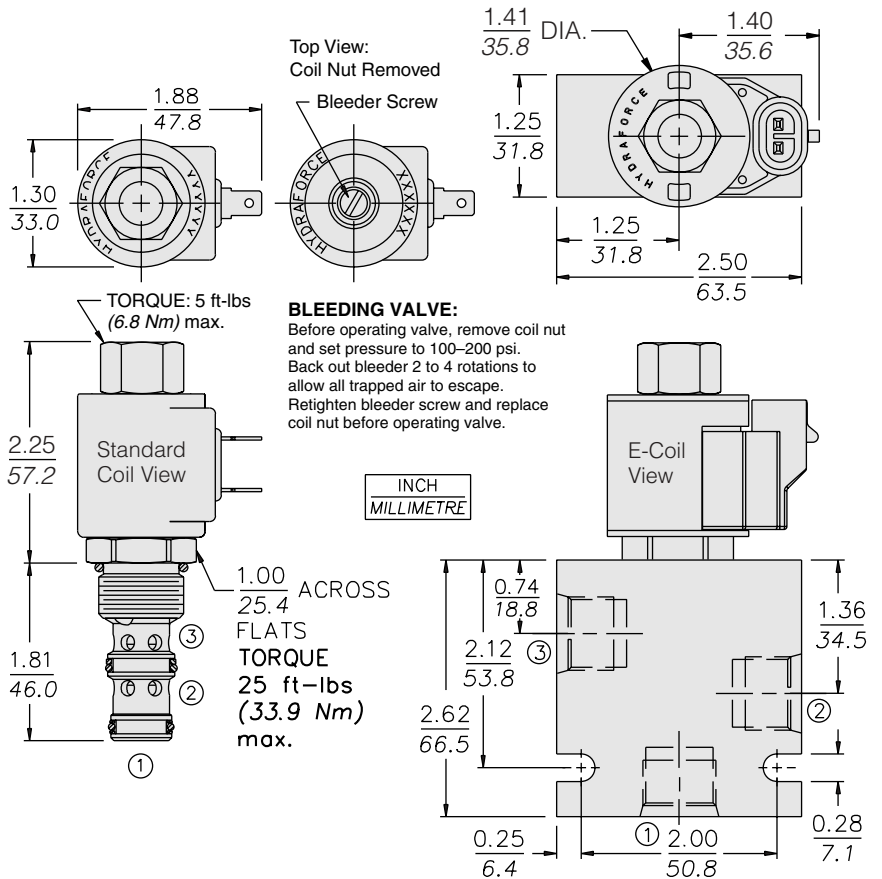
Note: This product, the TS80-30, is obsolete effective Oct. 2005. Consult the Hydraforce applications group for alternatives that will meet your system requirements.

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

Note: This product, the TS80-30, is obsolete effective Oct. 2005. Consult the Hydraforce applications group for alternatives that will meet your system requirements.

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.

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: 0.14 kg. (0.3 lbs.); Perfect wound, 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

TS80-30 - - - -		
Porting		Termination Std. Coil
Cartridge Only	0	DS Dual Spades
SAE 6	6T	DG DIN 43650
SAE 8	8T	DL Leadwires (2)
3/8 in. BSP*	3B	DL/W Leads w/Weatherpak® Connectors
1/2 in. BSP*	4B	DR Deutsch DT04-2P
*BSP Body; U.K. Mfr. Only		Termination E-Coil
		ER Deutsch DT04-2P (IP69K Rated)
		EY Metri-Pack® 150 (IP69K Rated)
		Coils with internal diode are available. Consult factory.
Seals		Voltage
Buna N (Std.)	N	0 Less Coil
Fluorocarbon	V	10 10 VDC (0.80 amps max.)
		12 12 VDC (0.65 amps max.)
		20 20 VDC (0.40 amps max.)
		24 24 VDC (0.33 amps max.)