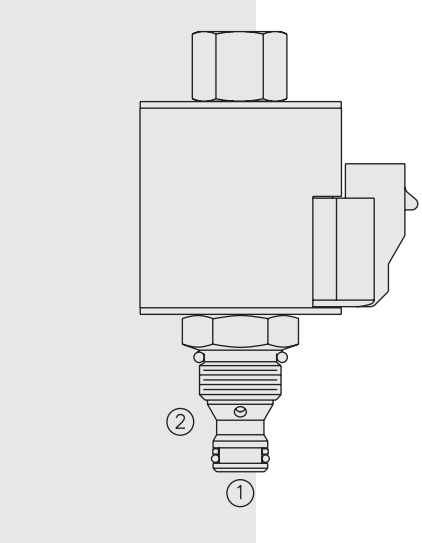
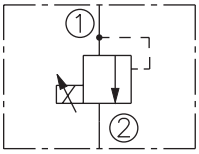
TS58-20 Proportional Electric Relief Valve

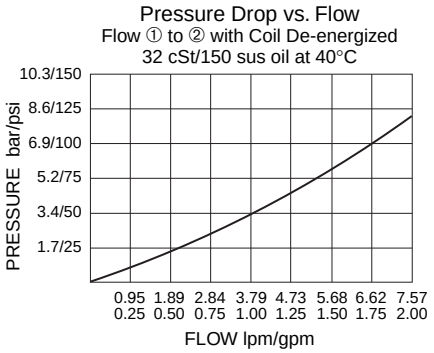


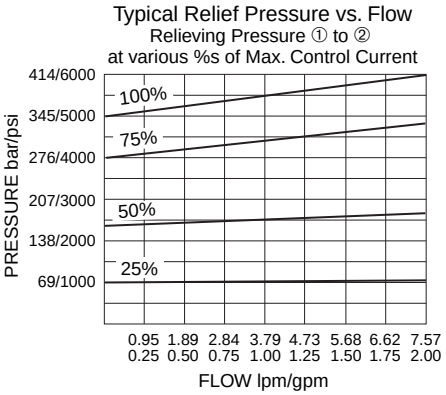
SYMBOLS

USASI/ISO:



PERFORMANCE





DESCRIPTION

A screw-in, cartridge-style, direct acting, poppet-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 **TS58-20** blocks flow from ① to ② until sufficient pressure is present at ① to offset the electrically induced solenoid force. With no current applied to the solenoid, the valve will free flow from ① to ②.

Note: Back pressure on port ② becomes additive to the pressure setting at a 1:1 ratio.

FEATURES

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

RATINGS

Maximum Operating Pressure: 345 bar (5000 psi)

Maximum Tank Port Pressure: 69 bar (1000 psi)

Relief Pressure Range: Model Code 40: 0–276 bar (0–4000 psi);
Model Code 50: 0–345 bar (0–5000 psi)

Note: Minimum pressure setting is dependent on flow through the valve. (See Pressure Drop Curve)

Flow: See Performance Charts

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

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

Control Signal: DC or PWM (Significant improvements in valve performance occur with superimposed dither, with either control method.)

Dither Frequency: 150 Hz or higher

Hysteresis with Dither 250 Hz: 3.3% (7% maximum without dither)

Step Response: T_{ON} <50 ms; T_{OFF} <7 ms

Operating Temperature: with standard Buna N seals: -40 to 120°C (-40 to 250°F)
with Fluorocarbon seals: -35 to 204°C (-31 to 400°F)
with Polyurethane seals: -54 to 107°C (-65 to 225°F)

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: VC08-2; See page 9.108.1; **Cavity Tool:** CT08-2XX; See page 8.600.1

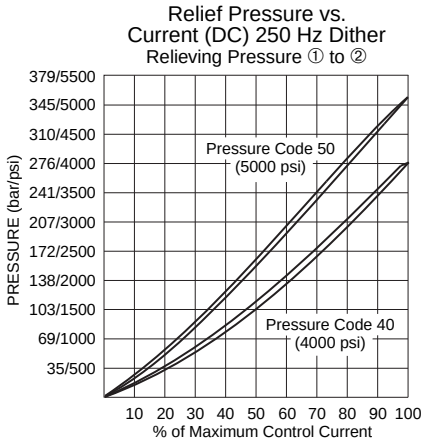
Seal Kit: SK08-2X-B; See page 8.650.1

Coil Nut: Part No. 4540560

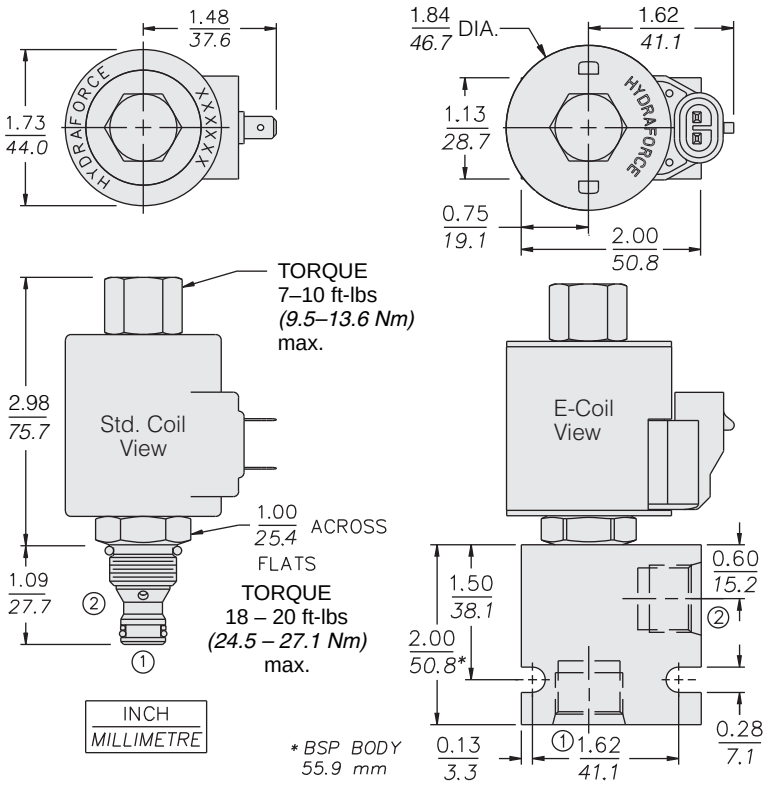
Recommended Electronic Controllers:
See page 2.001.1 or our Electronics catalog.

Performance info. continued on following page.

PERFORMANCE (continued)



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 207 bar (3000 psi). Ductile iron bodies available; dimensions may differ. See page 8.008.1

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

TS58-20 ___ - ___ - ___ - ___ - ___ ___

Option
None (Blank)
Screen **S**

Pressure Code
276 bar (4000 psi) **40**
345 bar (5000 psi) **50**

Porting
Cartridge Only **0**
SAE 6 **6T**
3/8 in. BSP* **3B**
1/2 in. BSP* **4B**
*BSP Body; U.K. Mfr. Only

Seals
Buna N (Std.) **N**
Fluorocarbon **V**
Polyurethane **P**

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.)

Coils with internal diode are available. Consult factory.

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)