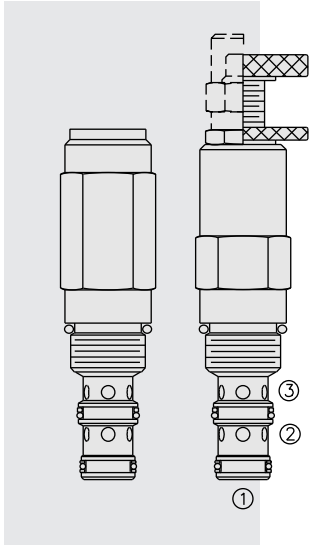


PR50-38 Pressure Reducing/Relieving Spool Valve



DESCRIPTION

A screw-in, cartridge-style, direct-acting, spool-type, hydraulic pressure reducing/relieving valve, with internal spring-chamber drain and spool damping chamber. It is designed to act as a pressure regulating valve for secondary circuits. Internal damping makes this valve particularly suitable for use in circuits with unstable input flows in demanding applications requiring enhanced stability.

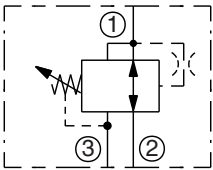
OPERATION

In its steady state, the **PR50-38** allows flow to pass bidirectionally from port 2 to port 1, with the spring chamber constantly drained at port 3. Upon attainment of a predetermined pressure at 1, the spool shifts to block flow at 2, thereby regulating pressure at 1. In this mode, the valve will also relieve from port 1 to port 3, at a variable value over the set reducing pressure. Tank port pressure is additive to the pressure setting at a ratio of 1:1.

FEATURES

- Adjustments cannot be backed out of the valve.
- Adjustments prohibit springs from going solid.
- Optional spring ranges to 227.5 bar (3300 psi).
- Optional 233 micron screen at port 2.
- Industry common cavity.

ISO SYMBOL



RATINGS

Pressure Rating: 345 bar (5000 psi) at ports 1 and 2; 68.9 bar (1000 psi) at port 3; 241 bar (3500 psi) max for F and H Adjustment options.

Proof Pressure: 48.2 bar (7000 psi) at ports 1 and 2; 68.9 bar (1000 psi) at port 3

Burst Pressure: 1034 bar (5000 psi)

Regulated Pressure Range: 10.3 to 227.5 bar (150 to 3300 psi)

Maximum Rated Flow: See Performance Chart

Maximum Internal Leakage to Port 3: 82 ml per minute (5.0 cu. in. per minute)

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

-26 to 204°C (-15 to 400°F) with fluorocarbon seals;

-54 to 107°C (-65 to 225°F) with polyurethane 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

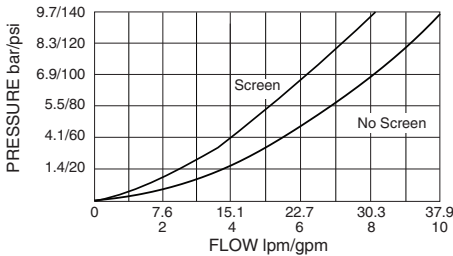
Cavity: VC10-3; See page 9.110.1

Cavity Tool: CT10-3XX; See page 8.600.1

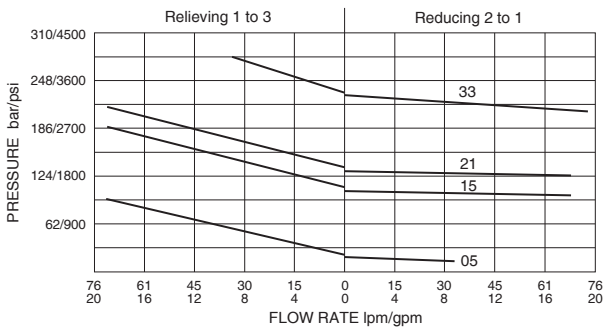
Seal Kit: SK10-3X-BM; See page 8.650.1

PERFORMANCE (Cartridge Only)

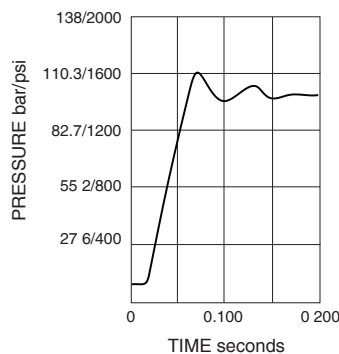
Fully Open Pressure Drop
Port 2 to Port 1 & Port 1 to Port 3
32 cSt/150 sus oil at 40°C



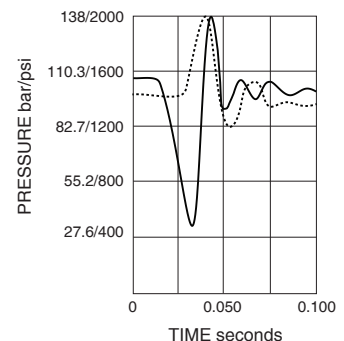
Typical Relieving and Reducing Pressure vs. Flow
at Maximum Pressure Setting for Different Spring Ranges
32 cSt/150 sus oil at 40°C



Response To Inlet Pressure Step
Time (sec.) Step Up: 0.040
Inlet Pressure Port 2 to Port 1
Supporting Valve Upstream Inlet Pressure Steps
Between 241.3 bar (3500 psi) and 10.3 bar (150 psi)



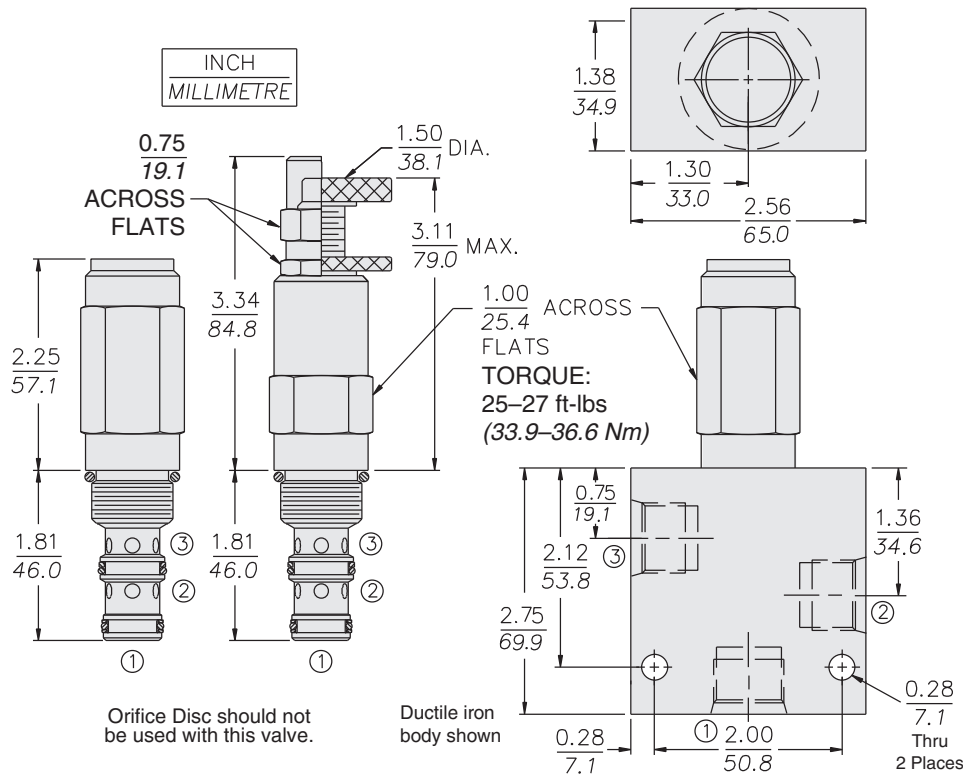
Pressure Step Response
in Reducing Mode Time (sec)
Step Up: 0.014 — Step Down: 0.043
Inlet Pressure Port 2 to Port 1
Supporting Valve Downstream Reducing Flow Steps
Between 0 lpm (0 gpm) and 18.9 lpm (5 gpm)



Damped, Direct-Acting

PR50-38

DIMENSIONS



MATERIALS

Cartridge: Weight: 0.27 to 0.31 kg. (0.59 to 0.69 lbs.) depending on adjustment type. Steel with hardened work surfaces. Zinc-plated exposed surfaces. Buna N O-rings and polyester elastomer back-ups standard. Anodized aluminum knobs and caps.

Standard Ported Body: Weight: 0.36 kg. (0.80 lbs.) Anodized high-strength 6061 T6 aluminum alloy, rated to 207 bar (3000 psi). Ductile iron (code D) bodies are required for operation over 207 bar (3000 psi), dimensions may differ; consult factory. See page 8.010.1

TO ORDER

PR50-38 - - - - /

Adjustment Option		Setting in bar[†]	
1/4 in. Hex Allen Head	A	(Blank)	for Adjustable, or
1-1/2 in. Dia. Alum. Knob	B	M25	Specify, for example:
Option A w/Cover Cap	C	M100	25 bar
Factory Preset Non-Adj.	F*		100 bar
Factory Preset Hidden Adj.	H*	Setting in psi[†]	
(See page 6.003.1)		(Blank)	for Adjustable, or
Option C w/Lockwire Holes	L	9.0	Specify, for example:
		21.5	900 psi
			2150 psi
Screen		Seals	
No Screen	(blank)	Buna N (Std.)	N
233 Micron Screen	S	Fluorocarbon	V
		Polyurethane	P
Porting		Spring Range	
Cartridge Only	0	05	10.3 to 37.9 bar
SAE 6	6T		(150 to 550 psi)
SAE 6	6TD	15	6.9 to 103 bar
SAE 8	8T		(100 to 1500 psi)
SAE 8	8TD	21	27.6 to 144.8 bar
1/4 in. BSP*	2B		(400 to 2100 psi)
1/4 in. BSP*	2BD	33*	55.2 to 227.5 bar
3/8 in. BSP*	3B		(800 to 3300 psi)
3/8 in. BSP*	3BD		

Note: Polyurethane seals are required for operation over 241 bar (3500 psi).

[†] Adjustable valves will be pre-set to approx. 50% of spring max. potential.

* 241 bar (3500 psi) max for F and H Adjustment options.

*BSP Body; U.K. Mfr Only