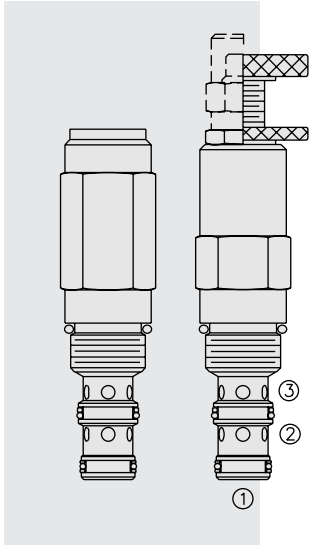


PR50-38 Pressure Reducing/Relieving Spool Valve



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. Port 2 may be protected with a 60 mesh 250 micron rated screen.

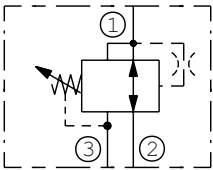
OPERATION

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.

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 60 mesh, 250 micron screen at port 2.
- Corrosion protection of 960 hours salt spray per ASTM B117.
- 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.

Optional screen at port 2 adds 1.73 bar (25 psi) @ 22.7 lpm (6 gpm) and 2.41 bar (35 psi) @ 30.31 lpm (8 gpm).

Proof Pressure: 482.6 bar (7000 psi) at ports 1 and 2; 68.9 bar (1000 psi) at port 3

Burst Pressure: 1034 bar (15000 psi)

Standard Spring Ranges: 10.3 to 227.5 bar (150 to 3300 psi)

Shown in To Order section. Due to manufacturing tolerances, it may be possible to adjust the valve either lower or higher than the nominal ratings shown. **If the valve is adjusted beyond the recommended maximum pressure range for F and H style adjuster options, the valve may not open to relieve pressure.**

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 and urethane seals

Filtration: See page 9.010.1

Fluids: Mineral-based or synthetics with lubricating properties at viscosities of

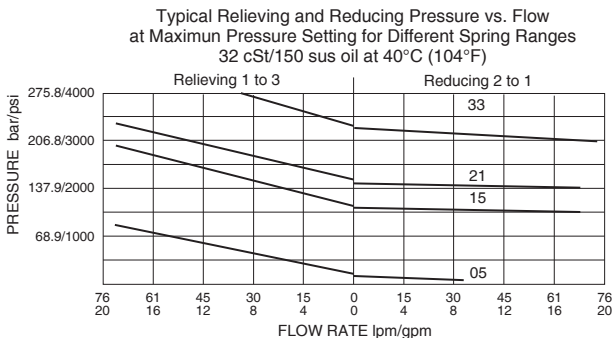
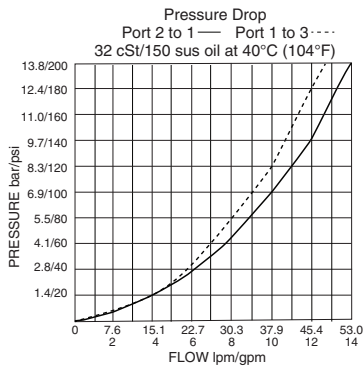
7.4 to 420 cSt (50 to 2000 sus); See Temperature and Oil Viscosity, page 9.060.1

Installation: No restrictions; See page 9.020.1

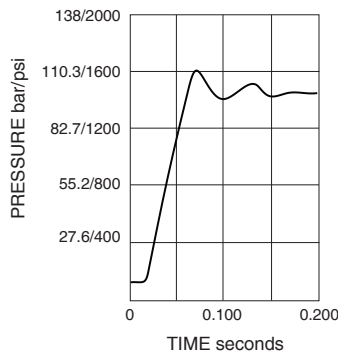
Cavity: VC10-3; See page 9.110.1 **Cavity Tool:** CT10-3XX; See page 8.600.1

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

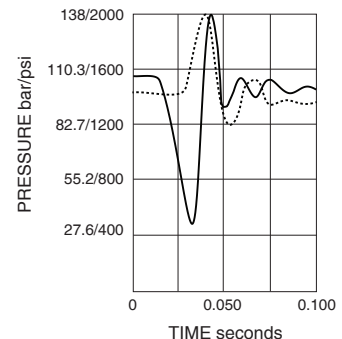
PERFORMANCE (Cartridge Only)



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)



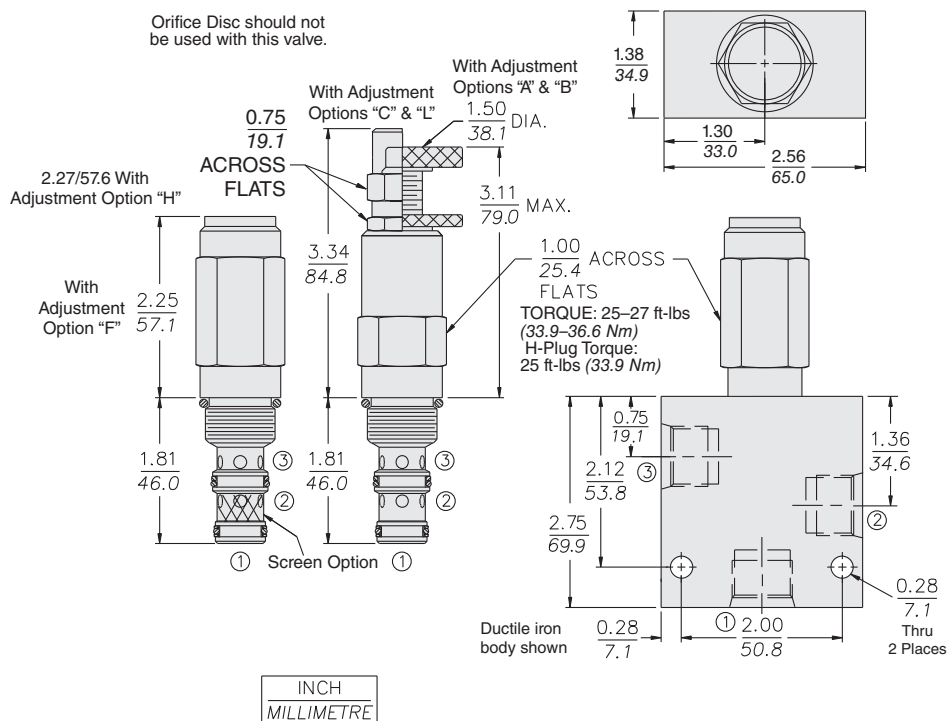
Pressure Step Response
in Reducing Mode Time (sec)
Step Up: 0.014 — Step Down: 0.043
Inlet Pressure Port 2 to Port 1
Supporting Valve Downstream Reducing Flow Steps
Between 0 lpm (0 gpm) and 18.9 lpm (5 gpm)



Damped, Direct-Acting

PR50-38

DIMENSIONS



INCH
MILLIMETRE

MATERIALS

Cartridge: Weight: 0.27 to 0.31 kg (0.59 to 0.69 lb) 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:

Ductile iron (code D) bodies are required for operation over 207 bar (3000 psi). Anodized high-strength aluminum alloy, rated to 207 bar (3000 psi) also available, dimensions may differ; consult factory. See page 8.010.1

TO ORDER

PR50-38

Adjustment Option	
1/4 in. Hex Allen Head	A
1-1/2 in. Dia. Alum. Knob	B
Option A w/Cover Cap	C
Factory Preset Non-Adj.	F*
Factory Preset Hidden Adj. (See page 6.003.1)	H*
Option C w/Lockwire Holes	L
Screen	
No Screen	(blank)
250 Micron Screen	S
Porting	
Cartridge Only	0
SAE 6	6T
SAE 6	6TD
SAE 8	8T
SAE 8	8TD
1/4 in. BSP*	2B
1/4 in. BSP*	2BD
3/8 in. BSP*	3B
3/8 in. BSP*	3BD

*If the valve is adjusted beyond the recommended maximum pressure range for the F and H style adjuster options, the valve may not open to relieve system pressure.

Seals	
Buna N (Std.)	N
Fluorocarbon	V
Polyurethane	P
Urethane	U

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

Setting in bar	
(Blank) [†] for Adjustable, or Specify, for example:	
25 bar	M25
100 bar	M100
Setting in psi	
(Blank) [†] for Adjustable, or Specify, for example:	
900 psi	9.0
2150 psi	21.5

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

Spring Range	
10.3 to 37.9 bar (150 to 550 psi)	05
6.9 to 103 bar (100 to 1500 psi)	15
27.6 to 144.8 bar (500 to 2100 psi)	21
55.2 to 227.5 bar (800 to 3300 psi)	33*

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