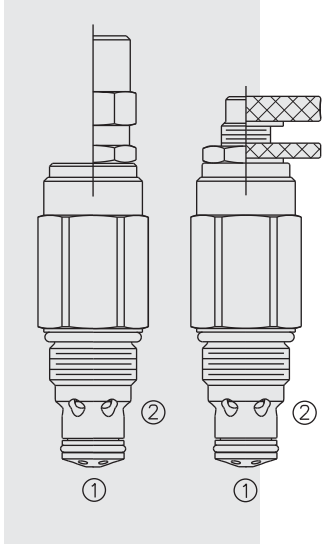


RVD50-20 Relief, Poppet-Type, High Pressure



DESCRIPTION

A screw-in, cartridge-style, direct-acting, poppet-type, hydraulic relief valve intended for use as a pressure limiting device for common hydraulic circuit protection.

OPERATION

The **RVD50-20** blocks flow from ① to ② until sufficient pressure is present at ① to force the poppet from its seat.

The cartridge offers fast response to load changes in typical hydraulic circuits requiring low hysteresis, low pressure rise and low internal leakage.

For cross-over applications, maximum recommended flow is 37.9 lpm (10 gpm) and maximum pressure is 207 bar (3000 psi). See Ordering Table.

FEATURES

- Adjustments cannot be backed out of the valve.
- Height of the adjuster does not change when the pressure setting is adjusted.
- Adjustment options A, B, and C: positive stops prevent springs from going solid.
- Hardened poppet and cage for long life.
- Optional spring ranges to 345 bar (5000 psi).
- Rapid response to pressure surges.
- Industry common cavity.

RATINGS

Maximum Operating Pressure: 350 bar (5075 psi)

Flow: The Performance Chart illustrates flow handling capacity at maximum setting for each spring range option. Pressure rise will vary with spring (range) and with setting within range due to flow forces. Consult factory for specific flow characteristic values.

Internal Leakage: 0.25 cc/minute (5 drops/minute) max. to 80% of nominal setting

Crack (Set) Pressure Defined: bar (psi) evident at 0.95 lpm (0.25 gpm) attained

Reseat Pressure: Nominal 85% of crack pressure

Standard Spring Ranges: Due to manufacturing tolerances, it may be possible to adjust the valve either lower or higher than the nominal ratings shown below.

Model Code **08:** 13.7 bar to 58.6 bar (200 psi to 850 psi)

Model Code **15:** 41.4 bar to 103.4 bar (600 psi to 1500 psi)

Model Code **24:** 96.5 bar to 165.5 bar (1400 psi to 2400 psi)

Model Code **32:** 137.9 bar to 220.6 bar (2000 psi to 3200 psi)

Model Code **42:** 206.8 bar to 289.6 bar (3000 psi to 4200 psi)

Model Code **50:** 275.8 bar to 344.7 bar (4000 psi to 5000 psi)

Storage Temperature: -40°C to 120°C with standard Buna N seals

-35°C to 204°C with Fluorocarbon seals

-54°C to 107°C 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: VC10-2; See page 9.110.1

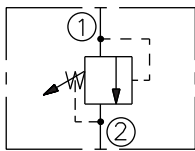
Cavity Tool: CT10-2XX; See page 8.600.1

Seal Kit: SK10-2X-B; See page 8.650.1;

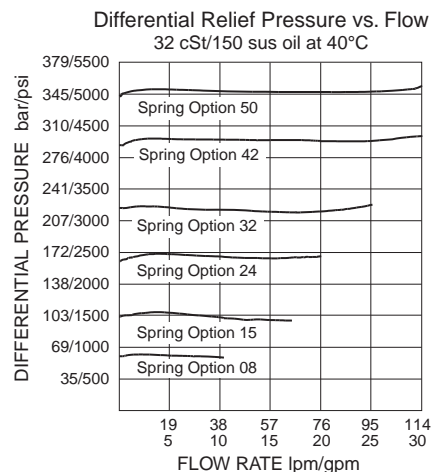
SK10-2X-M for cross-over relief application – max. pressure 207 bar (3000 psi)

SYMBOLS

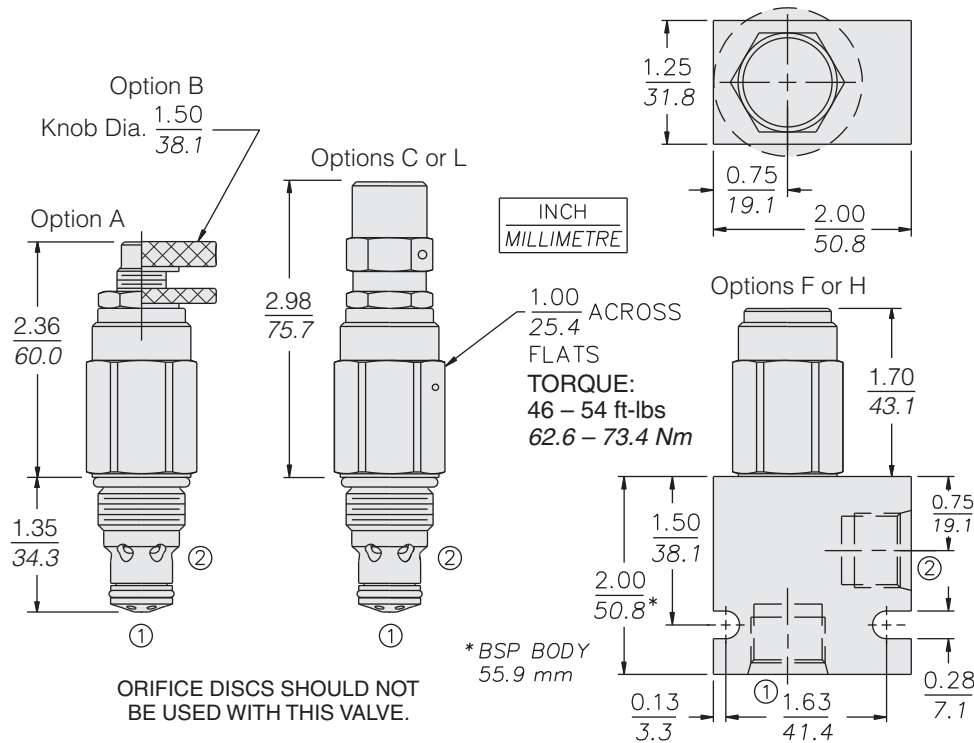
USAS/ISO:



PERFORMANCE (Cartridge Only)



DIMENSIONS



MATERIALS

Cartridge: Weight: 0.25 kg. (0.56 lbs.)
Steel with hardened work surfaces.
Zinc-plated exposed surfaces.
Buna N O-rings and polyester elastomer back-up standard;
Anodized aluminum knobs.

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 8.010.1

TO ORDER

RVD50-20

Adjustment Option
*Fixed Height Adjuster
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 Adjustment **H**
Option C w/Lockwire Holes **L**

*See page 6.003.1 for 'A-Alt' Fixed Height Adjuster details.

Porting
Cartridge Only **0**
SAE 6 **6T**
SAE 8 **8T**
1/4 in. BSP* **2B**
3/8 in. BSP* **3B**
1/2 in. BSP* **4B**

*BSP Body; U.K. Mfr. Only

Seals
Pressure on P Only:
N Buna N (Std.)
V Fluorocarbon
P Polyurethane
Bidirectional Pressure:
NC Buna N
VC Fluorocarbon
PC Polyurethane

Setting in bar†
(Blank) for Adjustable, or Specify, for example:
M25 25 bar
M100 100 bar
Setting in psi†
(Blank) for Adjustable, or Specify, for example:
9.0 900 psi
23.5 2350 psi

†Adjustable valves will be preset to approx. 50% of spring max.

Spring Range
08 13.7 to 58.6 bar (200 to 850 psi)
15 41.4 to 103.4 bar (600 to 1500 psi)
24 96.5 to 165.5 bar (1400 to 2400 psi)
32 137.9 to 220.6 bar (2000 to 3200 psi)
42 206.8 to 289.6 bar (3000 to 4200 psi)
50 275.8 to 344.7 bar (4000 to 5000 psi)