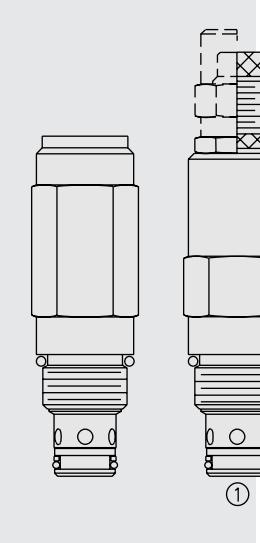
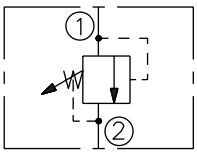
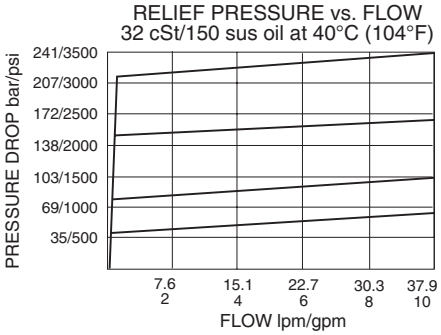
RV10-20 Relief, Direct-Acting Poppet



ISO SYMBOL



PERFORMANCE (Cartridge Only)



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 **RV10-20** 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 internal leakage.

NOTE: The RV10-20 may be used in cross-over relief applications (back pressure on 2) with the use of the "C" double back-up ring seal option. See Ordering Table.

FEATURES

- Adjustments cannot be backed out of the valve.
- Adjustment options A, B, and C: positive stops prevent springs from going solid.
- Hardened poppet and cage for long life.
- Optional spring ranges to 228 bar (3300 psi).
- Rapid response to pressure surges.
- Industry common cavity.

RATINGS

Operating Pressure: 228 bar (3300 psi)

Proof Pressure: 517 bar (7500 psi)

Burst Pressure: 1038 bar (15,000 psi)

Flow Rating: 113.6 lpm (30 gpm) at maximum pressure.
NOTE: 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: 3.4 to 227.5 bar (50 to 3300 psi) Shown in To Order section on next page. Due to manufacturing tolerances, it may be possible to adjust the valve either lower or higher than the nominal ratings shown below. **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.**

Spring	Pressure/Turn	
	Pressure Adjustment Options A, B, C and L	Options F and H
-6	4.5 bar/65 psi	5.6 bar/81 psi
-12	9 bar/130 psi	11.2 bar/162 psi
-23	16.6 bar/241 psi	20.8 bar/302 psi
-33	24.8 bar/359 psi	31 bar/449 psi

Temperature: -40 to 120°C (-40 to 250°F) for Buna N seals; -35 to 204°C (-31 to 400°F) for fluorocarbon seals; -54 to 107°C (-65 to 225°F) for 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

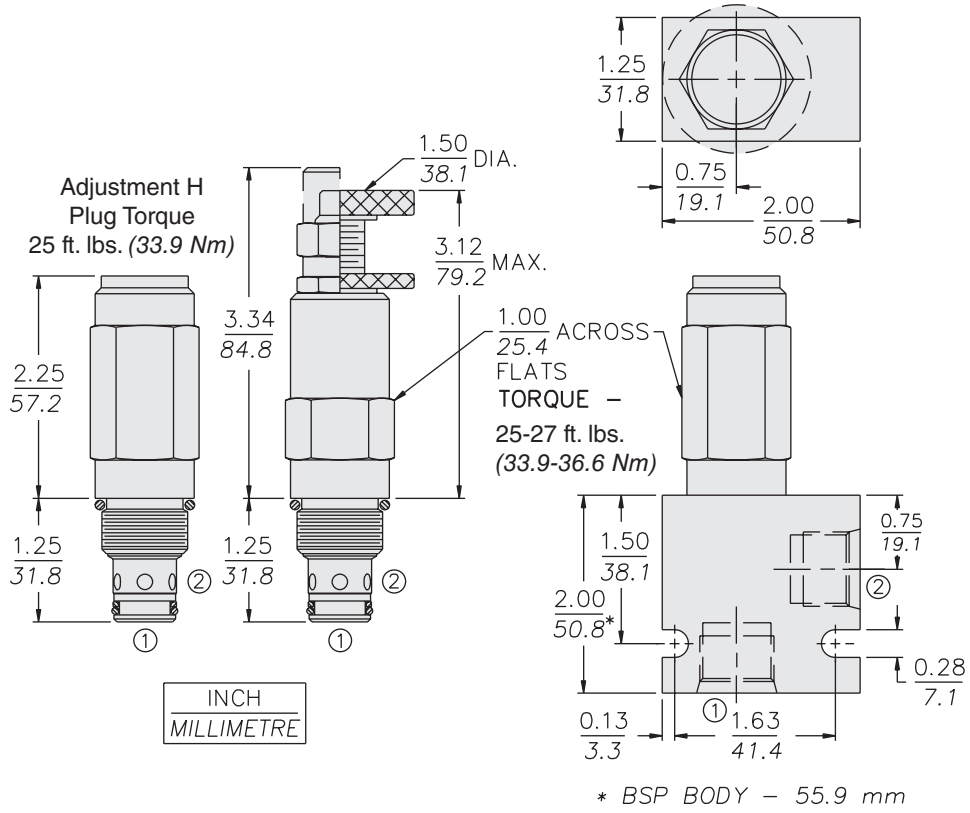
Installation: No restrictions; See page 9.020.1

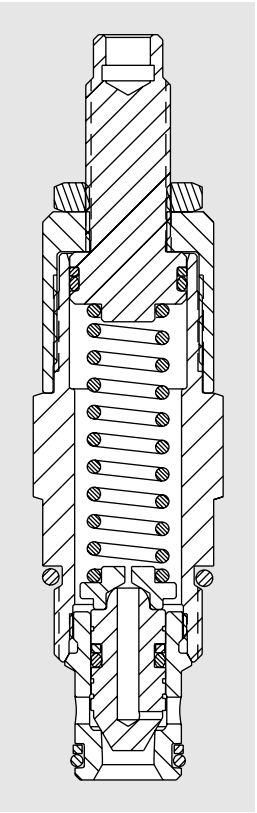
Cavity: VC10-2; See page 9.110.1

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)

DIMENSIONS





MATERIALS

Cartridge: Weight: Depending on adjustment option, ranges from 0.22 to 0.28 kg. (0.49 to 0.61 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 aluminum alloy, rated to 207 bar (3000 psi). Ductile iron bodies available; dimensions may differ. See page 8.010.1

TO ORDER

RV10-20__ - __ __ __ - __ - __ __ / __ __ __ __

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.	**H***
Option C w/ Lockwire Holes	**L**

*** 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.**

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

6	3.4 to 41.3 bar (50 to 600 psi)
12	10.34 to 82.7 bar (150 to 1200 psi)
23	17.2 to 158.6 bar (250 to 2300 psi)
33	17.2 to 227.5 bar (250 to 3300 psi)

Due to manufacturing tolerances, it may be possible to adjust the valve either lower or higher than the nominal ratings shown above.