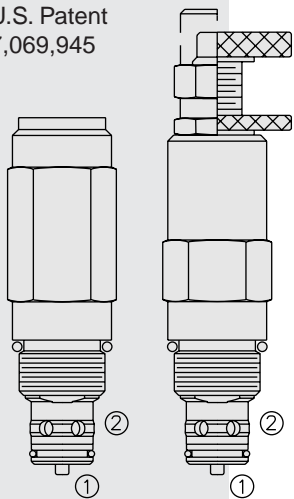


RV10-28 Relief, Pilot-Operated w/Reverse Check

U.S. Patent
7,069,945



DESCRIPTION

A screw-in, cartridge-style, pilot-operated, two-stage, hydraulic relief valve with reverse flow check valve. It is intended for use as a pressure limiting device in demanding hydraulic circuits which require fast response, low hysteresis, low leakage, low pressure overshoot and reverse free flow features.

OPERATION

The RV10-28 blocks flow from ① to ② until sufficient pressure is present at ① to force the pilot stage open, allowing the main stage to shift, opening ① to ②.

The relief flow path is from ① to ②. Reverse flow, from ② to ①, occurs when the pressure at ② is at least 2.1 bar (30 psi) higher than at port ①.

FEATURES

- Adjustments cannot be backed out of the valve.
- Hardened spool and cage for long life.
- Fast response.
- Industry common cavity.

RATINGS: Relief Valve Mode

Operating Pressure Range: 240 bar (3500 psi)

Flow: 7.6 to 113.6 lpm (2 to 30 gpm)

Internal Leakage: 0.5 ml/minute (10 drops/minute) max. to 80% of nominal setting

Crack Pressure Defined: bar (psi) evident at 7.6 lpm (2.0 gpm) attained

Reseat Pressure: Nominal 90% of crack pressure

Pressure Rise: at 240 bar (3500 psi): 0.15 bar/lpm (8 psi/gpm)

Response Time: Relief to Check switch under 250 bar/53 lpm (3500 psi/14 gpm)
condition: 0.6 seconds

RATINGS: Check Valve Mode

Crack Pressure: 2.1 bar (30 psi)

Response Time: Check to Relief switch under 250 bar/53 lpm (3500 psi/14 gpm)
condition: 0.3 seconds

RATINGS: Overall

Operating Temperature: with Buna N seals: -54 to 135°C (-65 to 275°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: No restrictions; See page 9.020.1

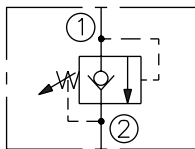
Cavity: VC10-2, Variation "A"; See page 9.110.1

Cavity Tool: CT10-2XX; See page 8.600.1

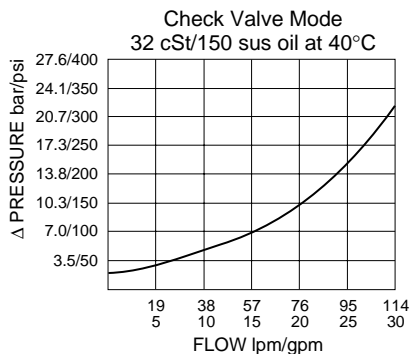
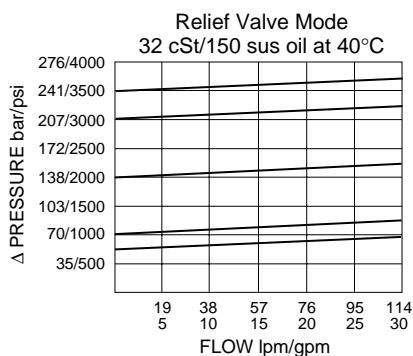
Seal Kit: SK10-2X-M; See page 8.650.1

SYMBOLS

USAS/ISO:



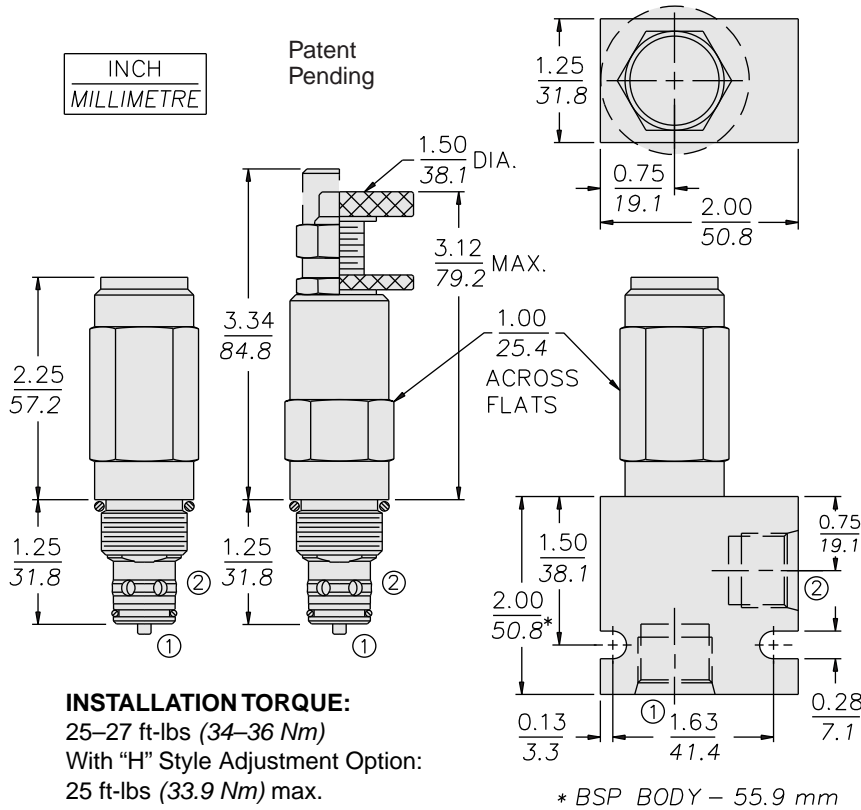
PERFORMANCE (Cartridge Only)



Note: This new model RV10-28 should be used instead of the older model RV10-24 (page 6.062.1) which is being discontinued. For applications that do not require low-overshoot and reverse free-flow features, see model RV10-23 (page 6.060.1).

DIMENSIONS

U.S. Patent 7,069,945



INSTALLATION TORQUE:
 25–27 ft-lbs (34–36 Nm)
 With "H" Style Adjustment Option:
 25 ft-lbs (33.9 Nm) max.

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.
 Anodized aluminum knobs.
 Optional polyurethane seals with Fluorocarbon back-up recommended for pressures over 240 bar (3500 psi).

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

RV10-28 - - - /

- 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**

- Porting**
 Cartridge Only **0**
 SAE 6 **6T**
 SAE 8 **8T**
 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

- Setting in bar[†]**
 (Blank) for Adjustable, or Specify, for example:
M52 52 bar (Minimum)
M100 100 bar
Setting in psi[†]
 (Blank) for Adjustable, or Specify, for example:
7.5 750 psi (Minimum)
23.5 2350 psi

- Spring Range**
35 51.7 to 241.4 bar (750 to 3500 psi)

[†]Adjustable valves will be preset to approx. 50% of spring max. potential, or 52 bar (750 psi), whichever is less.