



Overview

Description

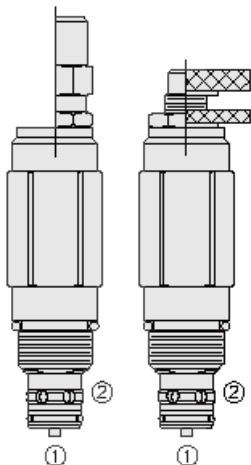
The RV50-28X is a screw-in, cartridge style, pilot operated, relief valve with reverse free flow check valve, intended for use as a pressure limiting device in demanding hydraulic circuits which require fast response, low hysteresis, low leakage, low pressure override and reverse free flow features.

Operation

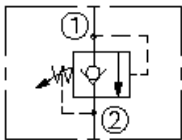
The RV50-28X blocks flow from port 1 to port 2 until sufficient pressure is present at port 1. Relief flow path from port 1 to port 2. Reverse flow from port 2 to port 1 occurs when pressure at port 2 is higher than pressure at port 1.

Features

- Rated for higher operating pressure 345 bar (5000 psi).
- Variety of adjustment options; adjustments cannot be backed out of the valve.
- Can be operated in relief valve mode or check valve mode.
- Reverse flow check valve built-in.
- Hardened spool and cage for long life.
- Fast response.
- Industry-common cavity.



Symbol



Ratings

Pressure Ratings

Pressure rating	344.7 bar (5000 psi)	- Note: Port 1
	68.9 bar (1000 psi)	- Note: Port 2
Proof pressure	620.5 bar (9000 psi)	- Note: Port 1
Burst pressure	1275.5 bar (18500 psi)	- Note: Port 1
Adjustable pressure range	13.8 to 344.7 bar (200 to 5000 psi)	
Crack pressure defined	Pressure evident at 7.6 lpm (2.0 gpm)	
Reseat pressure	Nominal 90% of crack pressure	
Crack pressure	2.1 bar (30 psi)	- Note: Check valve mode
Approximate pressure increment per adjuster turn	98.6 bar (1430 psi)	

Flow Ratings

Flow rating	113.6 lpm (30 gpm)	- Note: Port 1 to 2
Maximum internal leakage	0.53 ml/min (10 drops/min)	- Note: Max 80% of nominal setting

Other Ratings

Response	0.06 s	- Note: RV to CV at 241 bar (3500 psi) 53 lpm (14 gpm)
	0.3 s	- Note: CV to RV at 241 bar (3500 psi) 53 lpm (14 gpm)

Temperature Ratings

Operating fluid temperature	-40 to 100 °C (-40 to 212 °F)	- Note: With buna N seals
	-26 to 204 °C (-15 to 400 °F)	- Note: With fluorocarbon seals
	-54 to 107 °C (-65 to 225 °F)	- Note: With polyurethane seals
	-54 to 107 °C (-65 to 225 °F)	- Note: With urethane seals
Storage temperature	-40 to 70 °C (-40 to 160 °F)	
Ambient temperature	-40 to 70 °C (-40 to 160 °F)	



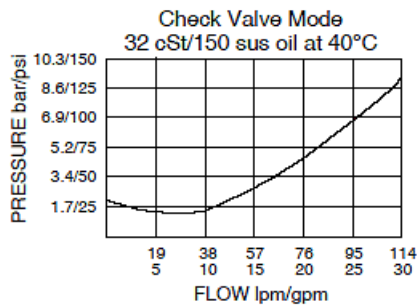
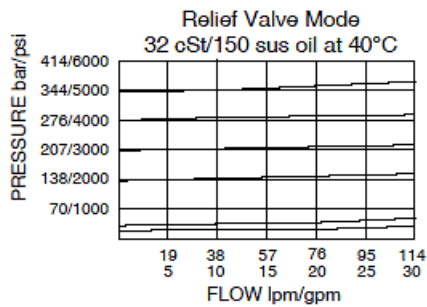
Operating Parameters

Fluids	Mineral based or synthetic with lubricating properties
Fluid viscosity range	7.4 to 420 cSt
Maximum operating contamination level	18/16/13 per ISO 4406

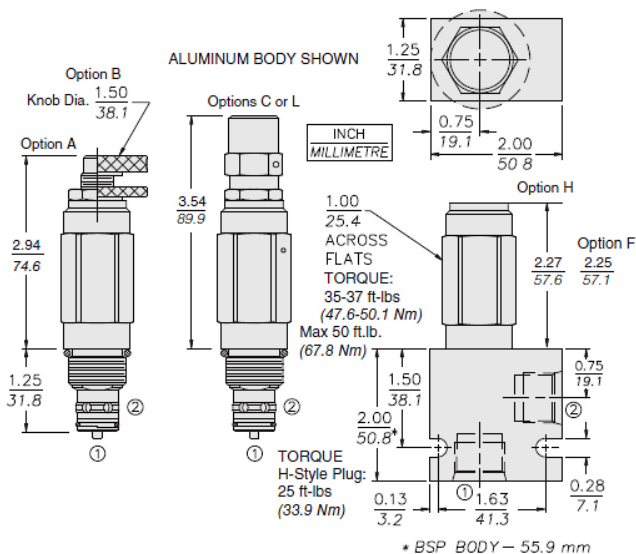
Properties

Unit weight	0.27 kg (0.59 lb)	- Note: A
	0.29 kg (0.64 lb)	- Note: B
	0.31 kg (0.68 lb)	- Note: C I
	0.244 kg (0.54 lb)	- Note: F
	0.240 kg (0.53 lb)	- Note: H
Internal wetted surface area	197 cm ² (30.6 in ²)	- Note: A b c I
	174 cm ² (26.9 in ²)	- Note: H f

Performance



Dimensions





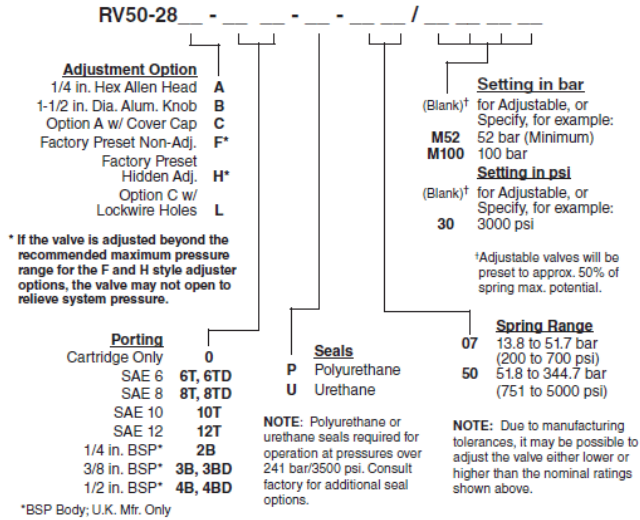
Installation Specifications

Cavity	VC10-2
Cartridge installation torque	47.6 to 50.1 N-m (35 to 37 ft-lb)
Maximum allowable torque	67.8 N-m (50 ft-lb)
H style plug torque	33.9 N-m (25 ft-lb)
Orientation restriction	None

Accessories

Seal kit	SK10-2X-B	- Note: X = n, v, P seal option
	SK10-2U-O	

Order Code



Model Options

RV50-28F-H-J-R/S

F Adjustment Option

CODE	DESCRIPTION
A	1/4" Hex Allen Head
B	1-1/2" Diameter Aluminum Knob with Aluminum Lock Knob
C	1/4" Hex Allen Head with Cover Cap
F	Factory Preset Non-Adjustable
H	Factory Preset Hidden Adjustment
L	1/4" Hex Allen Head with Cover Cap and Lockwire Holes

H Line Body

CODE	DESCRIPTION
0	No Body
6T	Aluminum SAE 6
8T	Aluminum SAE 8
6TD	Ductile Iron SAE 6
8TD	Ductile Iron SAE 8
2B	Aluminum BSPP 1/4" (2)
3B	Aluminum BSPP 3/8" (3)
4B	Aluminum BSPP 1/2" (4)
4BD	Ductile Iron BSPP 1/2" (4)

J Seal



CODE	DESCRIPTION
N	Buna-N
V	Fluorocarbon
P	Polyurethane

R Spring

CODE	DESCRIPTION
50	17.2 to 344.7 bar (250 to 5000 psi) Spring Range

S Setting

CODE	DESCRIPTION
MXXX	Spring Setting in XXX bar
XX	Spring Setting in XX psi (x 100)