



Overview

Description

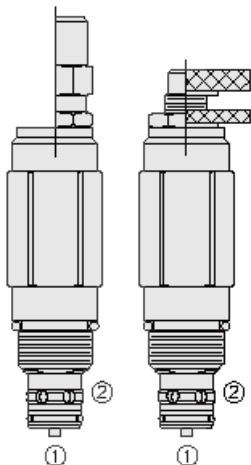
The RV50-28X is a screw-in, cartridge style, pilot operated, relief valve with reverse free flow check valve, intended for use as a pressure limiting device in demanding hydraulic circuits which require fast response, low hysteresis, low leakage, low pressure override and reverse free flow features.

Operation

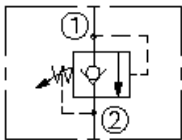
The RV50-28X blocks flow from port 1 to port 2 until sufficient pressure is present at port 1. Relief flow path from port 1 to port 2. Reverse flow from port 2 to port 1 occurs when pressure at port 2 is higher than pressure at port 1.

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 |
| Pressure setting 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) | |



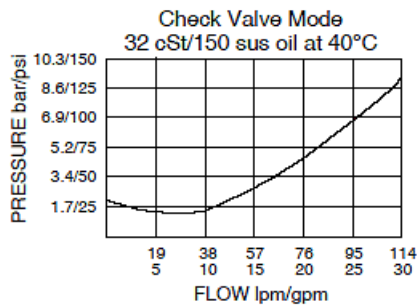
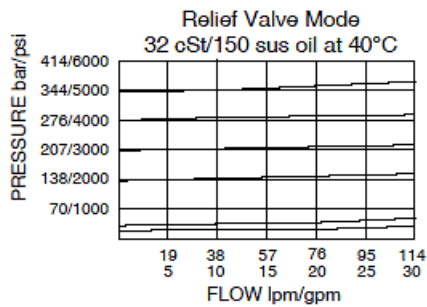
Operating Parameters

| | |
|---------------------------------------|--|
| 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 |

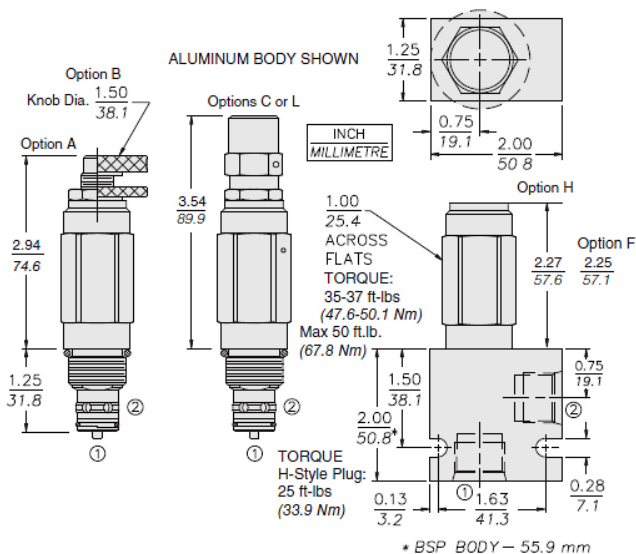
Properties

| | | |
|------------------------------|---|-----------------|
| 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





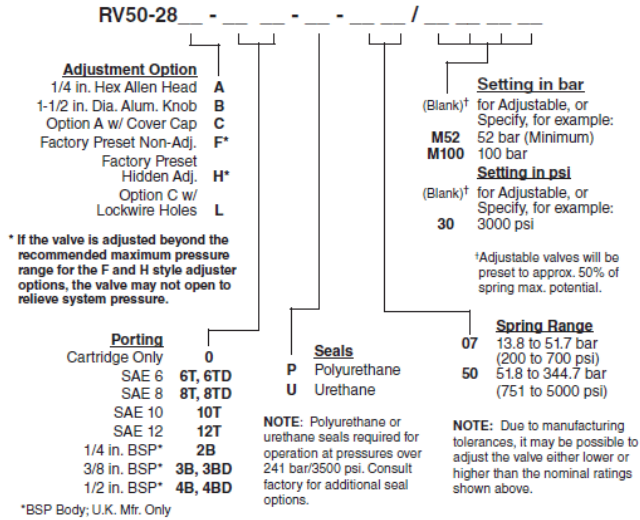
Installation Specifications

| | |
|-------------------------------|-----------------------------------|
| 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) |