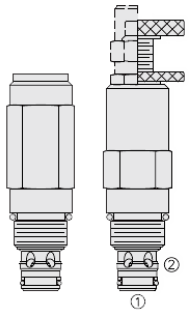
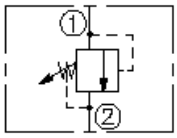
PILOT OPERATED RELIEF VALVE U.S. PATENT # 7,137,406

Overview



SYMBOL



Description

RV50-26X is a screw in, cartridge style, pilot operated (two stage), spool type hydraulic relief valve, intended for use as a pressure limiting device in demanding hydraulic circuits which require fast response and low hysteresis.

Operation

The RV50-26X blocks flow from port 1 to port 2 until sufficient pressure is present at port 1 to force the piloting relief off its seat, allowing the main (second stage) spool to shift, opening port 1 to port 2.

note: this valve cannot be used in cross-over relief applications.

Features

- Adjustments cannot be backed out of the valve.
- Adjustments prohibit springs from going solid.
- Hardened spool and cage for long life.
- Rapid, smooth response to pressure changes.
- Industry-common size.

Ratings

Pressure Ratings

Pressure rating: 344.7 bar (5000 psi)

Proof pressure: 517.1 bar (7500 psi)

Burst pressure: 1037.7 bar (15050 psi)

Relief pressure defined: Pressure evident at
7.57 lpm (2 gpm)

Reseat pressure: Nominal 90% of crack

Relief pressure range: 20.7 to 344.7 bar (300 to 5000 psi)

Flow Ratings

Flow rating: 113.6 lpm (30 gpm)

Maximum internal leakage: 147 ml/min (9 in^3/min)

Other Ratings

Cycle life: 500000 cycles at
241.3 bar (3500 psi)

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

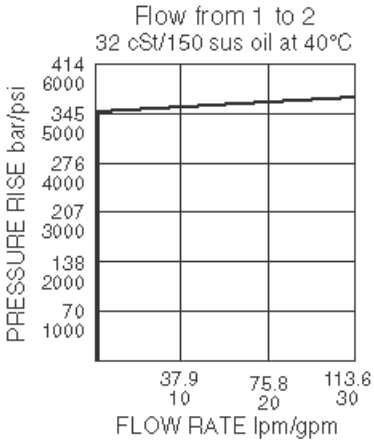
PILOT OPERATED RELIEF VALVE U.S. PATENT # 7,137,406

Maximum operating contamination level: 18/16/13 per ISO 4406

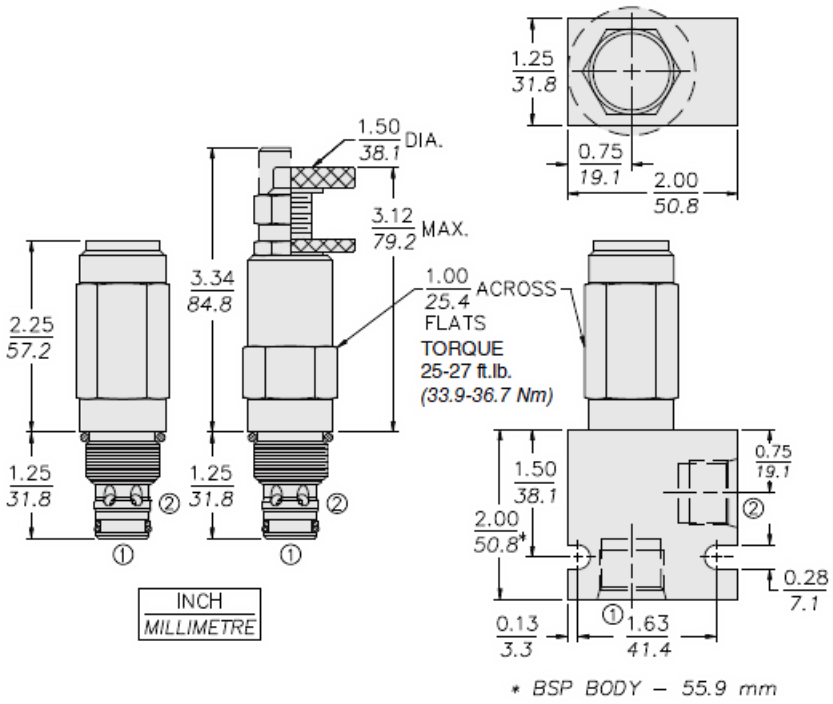
Properties

Unit weight: 0.25 kg (0.55 lb) note: A
0.27 kg (0.60 lb) note: B
0.29 kg (0.65 lb) note: C I
0.24 kg (0.53 lb) note: F h
Internal wetted surface area: 141 cm^2 (21.8 in^2) note: A b c I
161 cm^2 (24.9 in^2) note: F h

Performance



Dimensions



PILOT OPERATED RELIEF VALVE U.S. PATENT # 7,137,406

Installation Specifications

Cavity: VC10-2

10-size-2-way Cavities

Cartridge installation torque: 47.6 to 50.2 N-m (35 to 37 ft-lb)

Maximum allowable torque: 67.8 N-m (50 ft-lb)

H style plug torque: 10.8 to 13.6 N-m (8 to 10 ft-lb)

Orientation restriction: None

Accessories

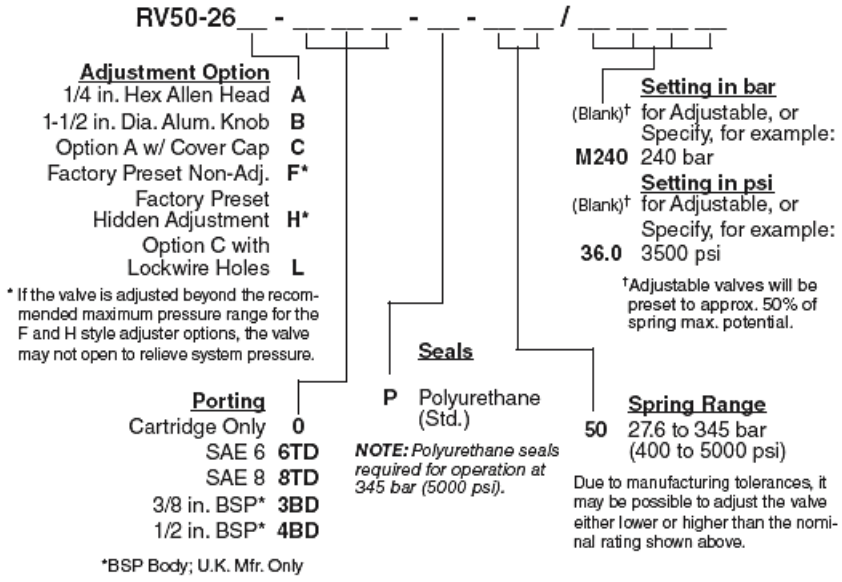
Seal kit: SK10-2X-B note: X=n,v,p

SK10-2U-O note: Urethane

Seal kit installation instructions

Housings: Available 10-2w valve bodies

Order Code



Model Options

RV50-26F-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

PILOT OPERATED RELIEF VALVE U.S. PATENT # 7,137,406

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	27.6 to 344.7 bar (300 to 5000 psi) Spring Range

S Setting

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