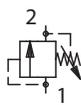
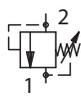
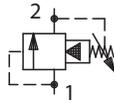
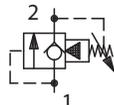
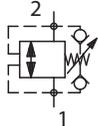
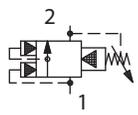
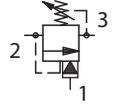
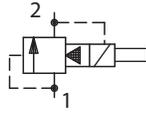
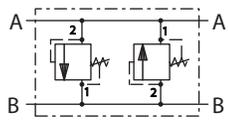
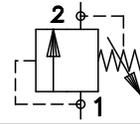


# Relief Valves

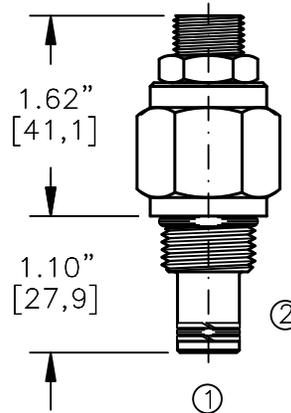
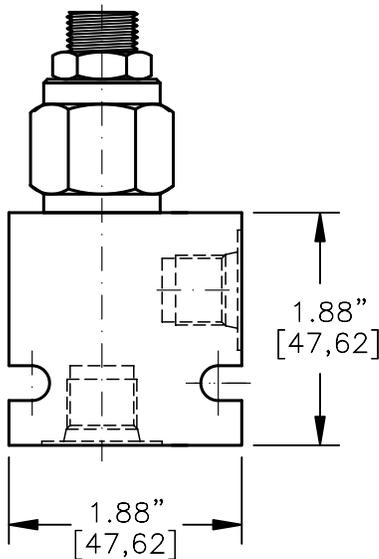
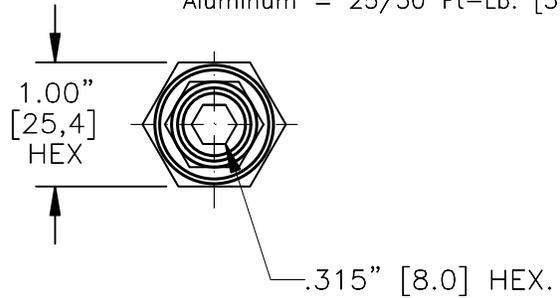
	MODEL	DESCRIPTION	FLOW	CAVITY
	RVPD-08 RVPD-10 RVDI-08 RVDI-10	DIRECT ACTING PILOT CONTROL DIRECT ACTING PILOT CONTROL DIRECT ACTING POPPET TYPE DIRECT ACTING POPPET TYPE	2 GPM 2 GPM 6 GPM 10 GPM	C0820 C1020 C0820 C1020
	RVDA-08 RVDA-10	DIFFERENTIAL AREA POPPET TYPE	10 GPM 20 GPM	C0820 C1020
	RVPS-08 RVPS-10 RVPS-12	PILOT OPERATED SPOOL TYPE	15 GPM 26 GPM 60 GPM	C0820 C1020 C1220
	RVPP-10 RVPP-12	PILOT OPERATED POPPET TYPE	26 GPM 60 GPM	C1020 C1220
	RVBD-08 RVBD-10 RVBD-12	BI-DIRECTIONAL POPPET TYPE	10 GPM 20 GPM 40 GPM	C0820 C1020 C1220
	RVBS-10	BREAKER PILOT OPERATED SPOOL TYPE	25 GPM	C1020
	PUVA-10	DIFFERENTIAL AREA UNLOADING RELIEF VALVE	1 GPM	C1030
	ESRV-10	SOLENOID VENTED RELIEF VALVE, N.O.	26 GPM	C1020
	CPRV-10	CROSS PORT RELIEF VALVE	20 GPM	C1020

RELIEF VALVE DIRECT ACTING,  
LOW FLOW, PILOT CONTROL



TORQUE:

Steel = 35/40 Ft-Lb. [47/54 Nm]  
Aluminum = 25/30 Ft-Lb. [34/41 Nm]



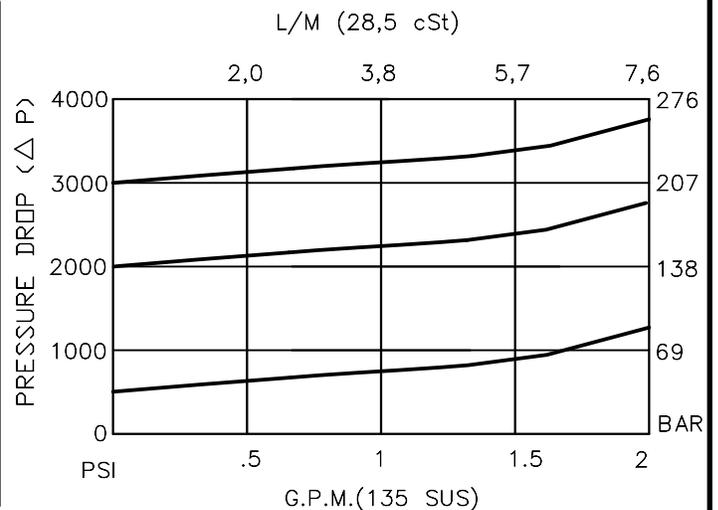
FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-011.1

**RVPD-08-X-X-X-XX**

- BASIC
- SIZE  
08 = 3/4"-16 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- ADJUSTMENT  
S = ADJUSTING SCREW  
C = CAPPED  
T = TAMPERPROOF  
K = HANDKNOB  
M = METAL HANDKNOB

- PRESSURE RANGE  
15 = 0 TO 1500 PSI  
30 = 0 TO 3000 PSI  
50 = 0 TO 5000 PSI
- PORTS  
0 = CARTRIDGE ONLY  
02BX = G 1/4" BSPP  
06TX = SAE - #6
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING

FOR ADJUSTMENT CONTROL  
OPTIONS SEE PAGE 0-050.0



**RELIEF VALVE DIRECT ACTING,  
LOW FLOW, PILOT CONTROL.****DESCRIPTION**

This unit is a DIRECT ACTING, REMOTE CONTROL FOR VALVES WITH LOW PILOT FLOW, cartridge type, steel ball, low leakage, screw in type, adjustable, pressure control valve.

**OPERATIONS**

This valve (RVPD) blocks flow from port #1 to port #2 until sufficient pressure is present at port #1 to force the steel ball from its seat thus opening the valve.

This cartridge relief valve offers a smooth transition in response to a load change in a hydraulic circuit.

**FEATURES AND BENEFITS**

Leakproof screw adjustment.

Pressure in tank port (2) will add to the bias spring setting, and is limited to 2000 PSI.

Adjustment screw can not be backed out of valve.

Overset protection – spring can not go solid.

Hardened precision steel ball & seat provides reliable, long life.

A unique self aligning (floating) cage provides very low hysteresis and reliable operation.

All external carbon steel parts are plated for longer life against the elements.

Valve is available with screw, tamperproof, capped and handknob adjustments.

All cartridge valves are 100% functionally tested.

Industry common cavity.

**SPECIFICATIONS**

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 2.0 GPM [7.6 L/M] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops/min [.25 cc/m] @ 85% of crack pressure.

DEFINITION OF CRACK: evident at 0.06 GPM [0.25 LPM]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-0822 for Buna "N".

SKV-0822 for Viton.

WEIGHT: 0.30 lb [.14 kg] cartridge only.

VALVE CAVITY: #C0820, See Page 0-011.0.

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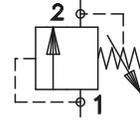
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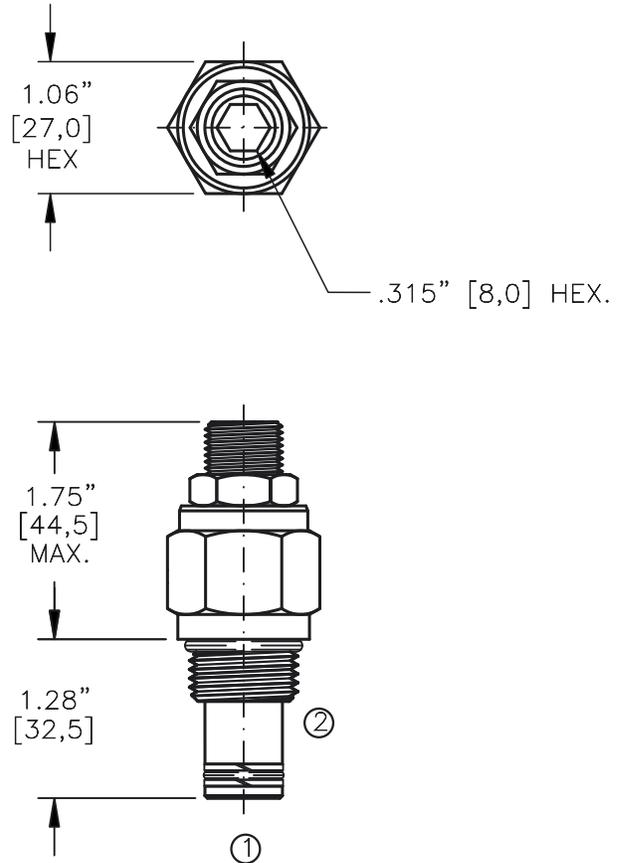
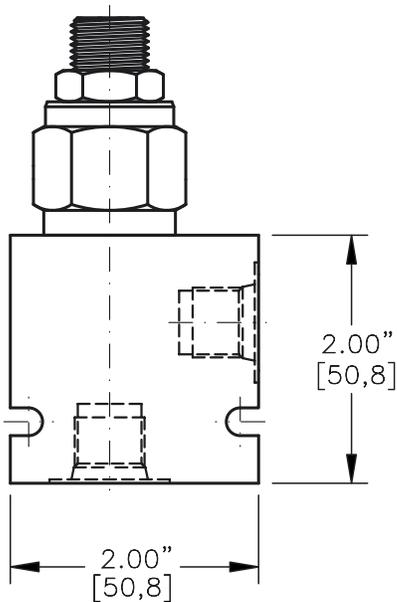
RELIEF VALVE DIRECT ACTING,  
LOW FLOW, PILOT CONTROL



Pat.#5,546,980

TORQUE:

Steel = 55/60 Ft-Lb. [74/81 Nm]  
Aluminum = 35/40 Ft-Lb. [47/54 Nm]



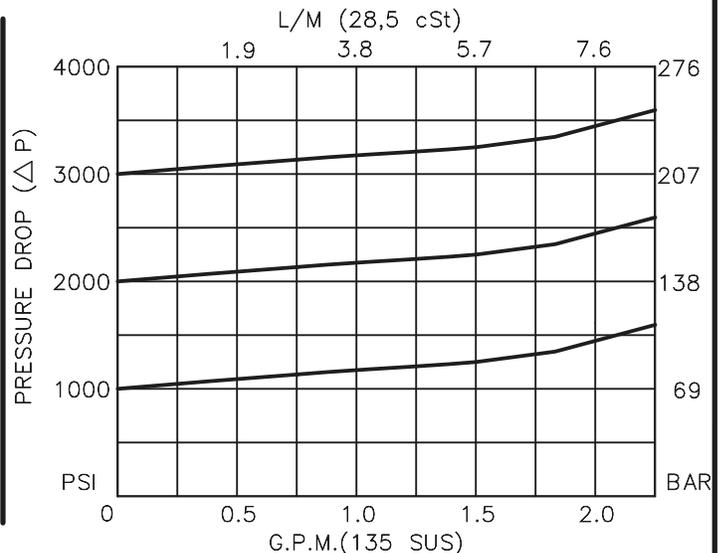
FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-012.1

**RVPD-10-X-X-X-XX**

- BASIC \_\_\_\_\_
- SIZE \_\_\_\_\_  
10 = 7/8"-14 UNF
- SEALS \_\_\_\_\_  
N = BUNA "N"  
V = VITON
- ADJUSTMENT \_\_\_\_\_  
S = ADJUSTING SCREW  
C = CAPPED  
T = TAMPERPROOF  
K = HANDKNOB  
M = METAL HANDKNOB

- PRESSURE RANGE \_\_\_\_\_  
15 = 0 TO 1500 PSI  
30 = 0 TO 3000 PSI  
50 = 0 TO 5000 PSI
- PORTS \_\_\_\_\_  
0 = CARTRIDGE ONLY  
02BX = G 1/4" BSPP  
03BX = G 3/8" BSPP  
06TX = SAE - #6  
08TX = SAE - #8
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING

FOR ADJUSTMENT CONTROL  
OPTIONS SEE PAGE 0-050.0



**RELIEF VALVE DIRECT ACTING,  
LOW FLOW, PILOT CONTROL.****DESCRIPTION**

This unit is a DIRECT ACTING, REMOTE CONTROL FOR VALVES WITH LOW PILOT FLOW, cartridge type, steel ball, low leakage, screw in type, adjustable, pressure control valve.

**OPERATIONS**

This valve (RVPD) blocks flow from port #1 to port #2 until sufficient pressure is present at port #1 to force the steel ball from its seat thus opening the valve.

This cartridge relief valve offers a smooth transition in response to a load change in a hydraulic circuit.

**FEATURES AND BENEFITS**

Leakproof screw adjustment.

Pressure in tank port (2) will add to the bias spring setting, and is limited to 2000 PSI.

Adjustment screw can not be backed out of valve.

Overset protection – spring can not go solid.

Hardened precision steel ball & seat provides reliable, long life.

A unique self aligning (floating) cage provides very low hysteresis and reliable operation.

All external carbon steel parts are plated for longer life against the elements. Valve is available with screw, tamperproof, capped and handknob adjustments.

All cartridge valves are 100% functionally tested.

Industry common cavity.

**SPECIFICATIONS**

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 2.0 GPM [7.6 L/M] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops/min [.25 cc/m] @ 85% of crack pressure.

DEFINITION OF CRACK: evident at 0.06 GPM [0.25 LPM]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as

MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-1022 for Buna "N".

SKV-1022 for Viton.

WEIGHT: 0.38 lb [.17 kg] cartridge only.

VALVE CAVITY: #C1020, See Page 0-012.0.

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## Pressure-Relief Cartridge Valve, Size SAE 08 / NG 5

$Q_{\max} = 6.0 \text{ gpm [22 l/min]}$ ,  $p_{\max} = 5000 \text{ psi [350 bar]}$   
direct acting, poppet type, adjustable  
Series RVDI-08...



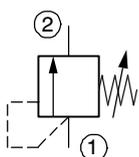
- Screw-in cartridge according to ISO 17209 – Common Cavity
- Compact construction
- For common cavities:  
C0820 or BH/C0820 – 3/4-16 UNF
- 3 pressure ranges available
- Adjustment screw can not be backed out of valve
- A unibody cage construction provides very low hysteresis, dependable and reliable operation
- Hardened precision fitted poppet & cage provides reliable long life
- Overset protection, spring can not go solid
- All external parts are zinc-plated for longer life
- All cartridges valves are 100% functionally tested

### 1 Description

Series RVDI-08... pressure-relief cartridges are size SAE 08 / NG 5, high performance screw-in cartridges with a 3/4-16 UNF mounting thread. This unit is a direct acting relief valve, cartridge type, poppet type, low leakage, screw in type, adjustable, pressure control valve. This valve blocks flow from port 1 to port 2 until sufficient pressure is present at port 1

to force the poppet from its seat thus opening the valve. This cartridge relief valve offers a smooth transition in response to a load change in a hydraulic circuit. All external parts of the cartridge are zinc plated and are thus suitable for use in the harshest operating environments.

### 2 Symbol



### 3 Technical data

General characteristics	Description, value, unit
Designation	pressure-relief cartridge
Design	direct acting, poppet type, adjustable
Mounting method	screw-in cartridge 3/4-16 UNF
Tightening torque	see chapter 5, Dimensions & sectional view
Size	SAE 08, cavity type C0820 NG 5, cavity type BH/C0820
Weight	0.33 lbs [0.15 kg]
Mounting attitude	unrestricted
Ambient temperature range	-40 °F ... +248 °F [-40 °C ... +120 °C]

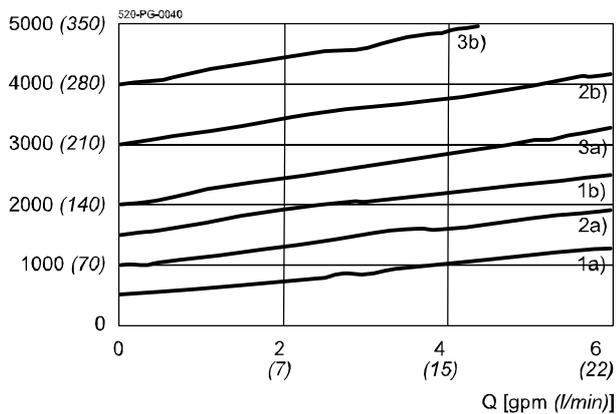
Hydraulic characteristics	Description, value, unit
Maximum operating pressure - ports 1, 2	5000 psi [350 bar]
Maximum flow rate	6 gpm [22 l/min]
Nominal pressure ranges	1500, 3000, 5000 psi [105, 210, 350 bar] For further pressure ranges, please contact BUCHER
Flow direction	1 → 2 pressure relieving
Definition of opening	visible at 0.06 gpm [0,25 l/min]
Internal leakage	15 drops/min (0.75 cc/min) @ 80% of opening pressure
Hydraulic fluid	HL and HLP mineral oil to DIN 51 524; for other fluids, please contact BUCHER
Hydraulic fluid temperature range	-13 °F ... +158 °F [-25 °C ... +70 °C]
Viscosity range	10...500 mm <sup>2</sup> /s (cSt), recommended 15...250 mm <sup>2</sup> /s (cSt)
Minimum fluid cleanliness Cleanliness class to ISO 4406 : 1999	class 18/16/13

## 4 Performance graphs

measured with oil viscosity 33 mm<sup>2</sup>/s (cSt)

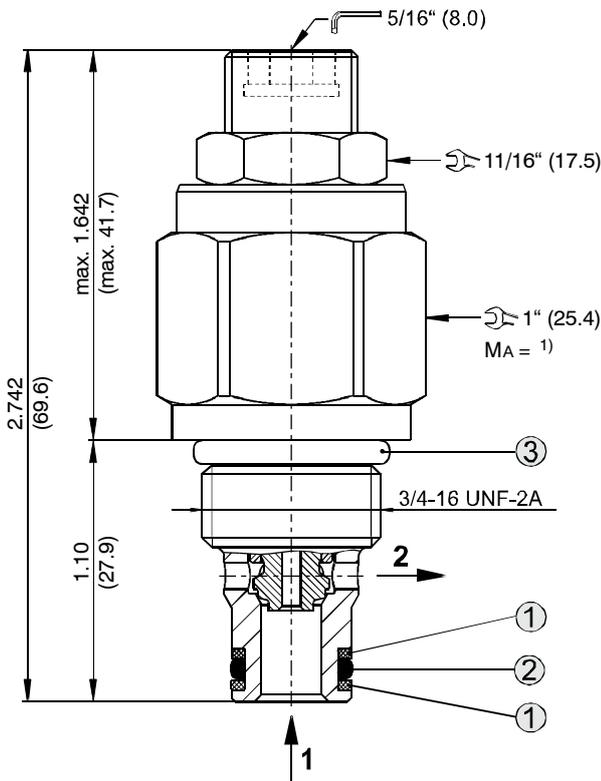
$p = f(Q)$  Pressure - Flow rate characteristic [ $p_N = 5000$  psi]

$p$  [psi (bar)]



- 1a) = 1500 PSI -  $p_N$  500 psi (34 bar)
- 1b) = 1500 PSI -  $p_N$  1500 psi (103 bar)
- 2a) = 3000 PSI -  $p_N$  1000 psi (68 bar)
- 2b) = 3000 PSI -  $p_N$  3000 psi (206 bar)
- 3a) = 5000 PSI -  $p_N$  2000 psi (137 bar)
- 3b) = 5000 PSI -  $p_N$  4000 psi (275 bar)

## 5 Dimensions & sectional view



Tightening torque  $M_A$  <sup>1)</sup>

Cavity type	C0820 – BH/C0820
When fitted in aluminium	25...30 ft-lbs (34 - 42 [Nm])
When fitted in steel	35...40 ft-lbs (47 - 54 [Nm])

## 6 Installation information



### IMPORTANT!

When fitting the cartridges, use the specified tightening torque. No adjustments are necessary, since the cartridges are set in the factory.



### ATTENTION!

Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.

Seal kit NBR no. SKN-0822 <sup>2)</sup>

Item	Qty.	Description		
1	2	Backup ring	∅ 0,390 x 0,053 x 0,048	Inch
2	1	O-ring 012	∅ 0,364 x 0,070 FKM	Inch
3	1	O-ring 908	∅ 0,644 x 0,087 FKM	Inch



### IMPORTANT!

<sup>2)</sup> Seal kit with FKM (Viton) seals, no. SKV-0822

### 7 Ordering code

Ex. RVDI - 08 - N - S - 0 - 30 - \_

- RVDI = pressure-relief valve
- 08 = nominal size SAE 08 / NG 5
- N = NBR (Nitrile) seals (standard)
- V = FKM (Viton) seals  
(special seals - please contact BUCHER)
- S = adjustment screw (standard)
- C = capped adjustment screw
- T = tamperproof adjustment screw
- K = handknob
- M = metal handknob
- 0 = cartridge only
- 06TA = line-mounting body SAE-6      aluminum
- 06TS = line-mounting body SAE-6      steel
- 15 = pressure stage 100 ... 1500 psi
- 30 = pressure stage 750 ... 3000 psi
- 50 = pressure stage 1500 ... 5000 psi
- (blank) = without pressure setting (standard)
- /XX = factory pressure setting in „100 psi“ (e.g. „/12,“ = 1200 psi) on request

### 8 Related data sheets

Reference	(Old no.)	Description
520-P-000050		The form-tool loan program
520-P-000110		Cavity type C0820
400-P-040401		Cavity type BH/0820
520-P-000111		Line-mounting body, 8 Series -2-way

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[www.bucherhydraulics.com/commoncavity](http://www.bucherhydraulics.com/commoncavity)

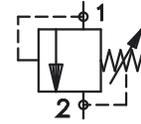
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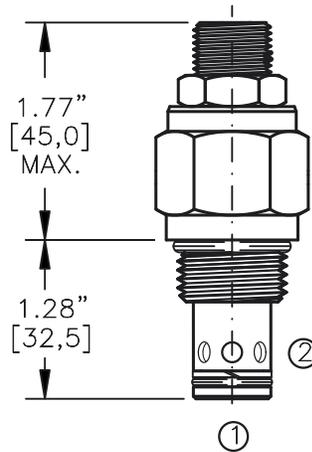
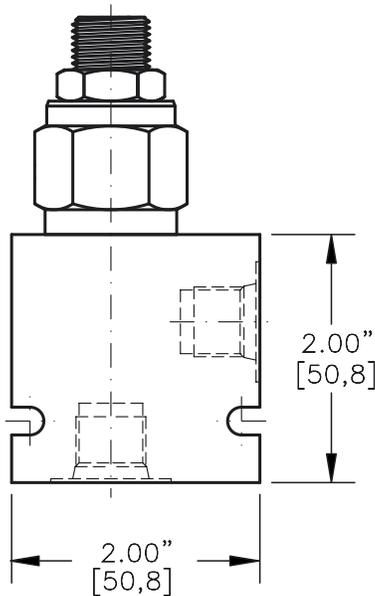
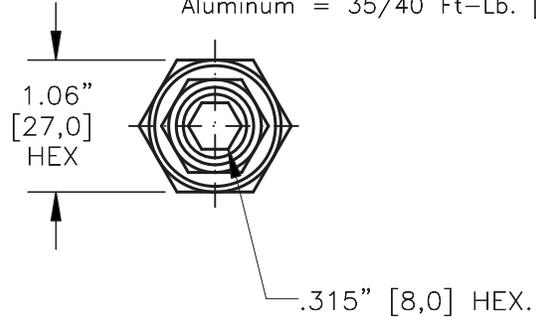
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RELIEF VALVE DIRECT ACTING,  
POPPET TYPE



TORQUE:

Steel = 55/60 Ft-Lb. [74/81 Nm]  
Aluminum = 35/40 Ft-Lb. [47/54 Nm]



FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-012.1

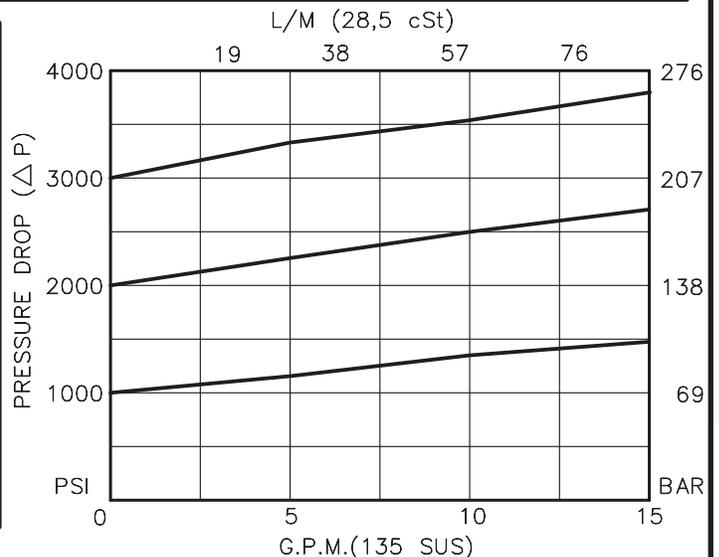
**RVDI-10-X-X-X-XX**

- BASIC
- SIZE  
10 = 7/8"-14 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- ADJUSTMENT  
S = ADJUSTING SCREW  
C = CAPPED  
T = TAMPERPROOF  
K = HANDKNOB  
M = METAL HANDKNOB

- PRESSURE RANGE  
15 = 100 TO 1500 PSI  
30 = 300 TO 3000 PSI  
50 = 500 TO 5000 PSI

- PORTS  
0 = CARTRIDGE ONLY  
02BX = G 1/4" BSPP  
03BX = G 3/8" BSPP  
06TX = SAE - #6  
08TX = SAE - #8
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING

FOR ADJUSTMENT CONTROL  
OPTIONS SEE PAGE 0-050.0



**RELIEF VALVE DIRECT ACTING,  
POPPET TYPE****DESCRIPTION**

This unit is a DIRECT ACTING RELIEF VALVE, cartridge type, poppet type, low leakage, screw in type, adjustable, pressure control valve.

**OPERATIONS**

This valve (RVDI) blocks flow from port #1 to port #2 until sufficient pressure is present at port #1 to force the poppet from its seat thus opening the valve.

This cartridge relief valve offers a smooth transition in response to a load change in a hydraulic circuit.

**FEATURES AND BENEFITS**

Leakproof screw adjustment.

Adjustment screw can not be backed out of valve.

Overset protection – spring can not go solid.

Hardened precision fitted poppet & cage provides reliable, long life.

All external carbon steel parts are plated for longer life against the elements.

Valve is available with screw, tamperproof, capped and handknob adjustments.

All cartridge valves are 100% functionally tested.

Industry common cavity.

**SPECIFICATIONS**

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 10.0 GPM [38 L/M] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops/min [.25 cc/m] @ 85% of crack pressure.

DEFINITION OF CRACK: evident at 0.06 GPM [0.25 LPM]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-1021 for Buna "N".

SKV-1021 for Viton.

WEIGHT: 0.38 lb [.17 kg] cartridge only.

VALVE CAVITY: #C1020, See Page 0-012.0.

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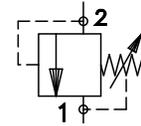
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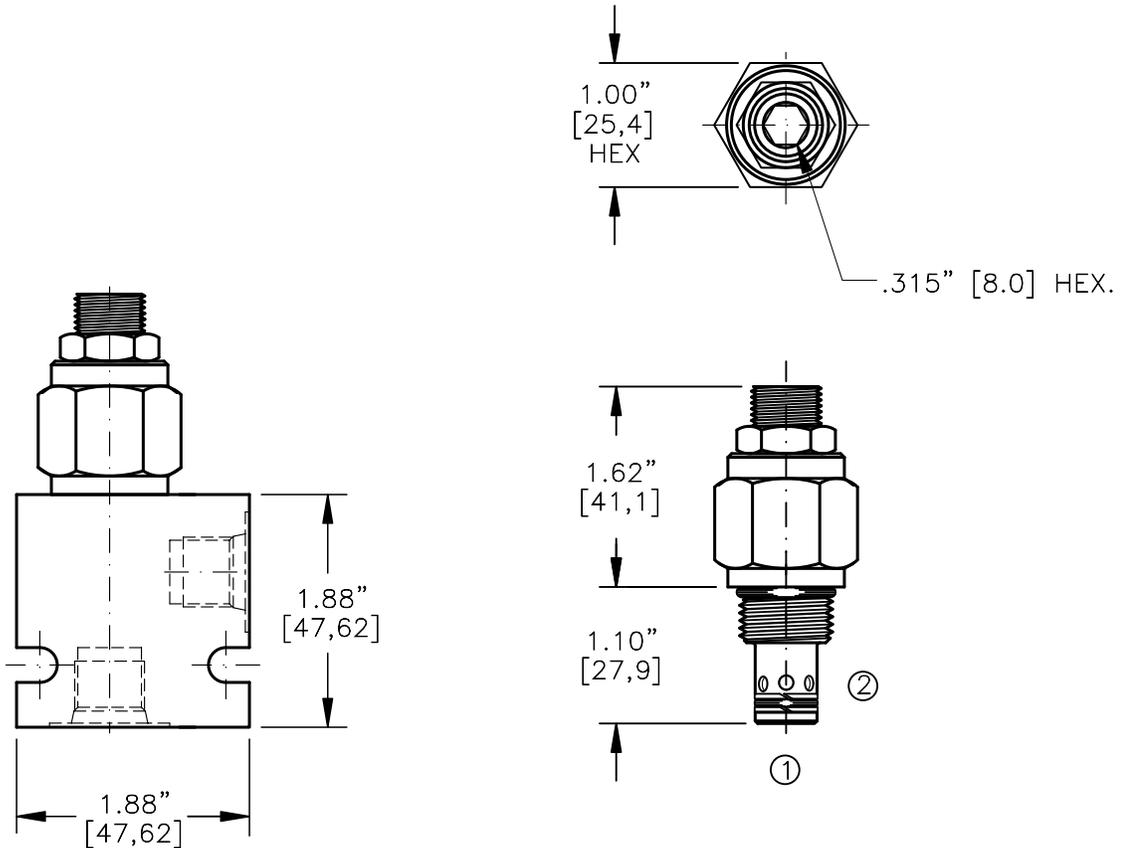
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RELIEF VALVE  
DIFFERENTIAL AREA, POPPET TYPE



TORQUE:

Steel = 35/40 Ft-Lb. [47/54 Nm]  
Aluminum = 25/30 Ft-Lb. [34/41 Nm]



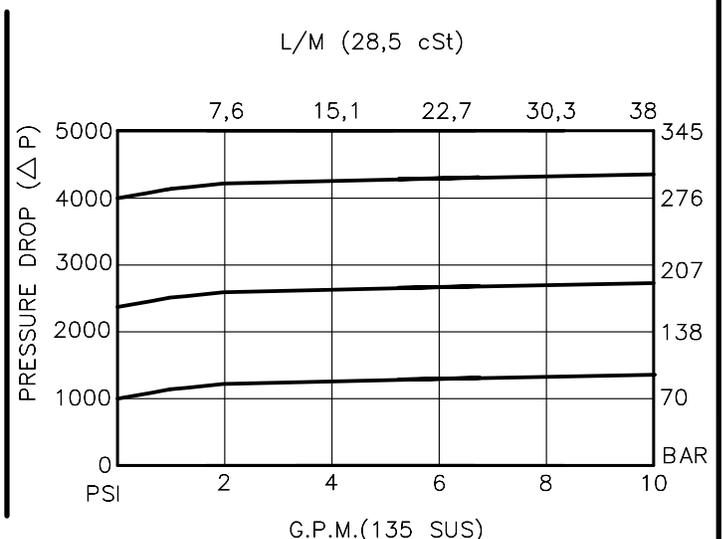
FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-011.1

**RVDA-08-X-X-X-XX**

- BASIC
- SIZE  
08 = 3/4"-16 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- ADJUSTMENT  
S = ADJUSTING SCREW  
C = CAPPED  
T = TAMPERPROOF  
K = HANDKNOB  
M = METAL HANDKNOB

- PRESSURE RANGE  
15 = 100 TO 1500 PSI  
30 = 750 TO 3000 PSI  
50 = 1500 TO 5000 PSI
- PORTS  
0 = CARTRIDGE ONLY  
02BX = G 1/4" BSPP  
06TX = SAE - #6
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING

FOR ADJUSTMENT CONTROL  
OPTIONS SEE PAGE 0-050.0



**DIFFERENTIAL AREA, POPPET TYPE****DESCRIPTION**

This unit is a DIFFERENTIAL AREA RELIEF VALVE, cartridge type, direct acting, poppet type, low leakage, screw in type, adjustable, pressure control valve.

**OPERATIONS**

This valve (RVDA) blocks flow from port #2 to port #1 until sufficient pressure is present at port #2 to force the poppet from its seat thus opening the valve.

This cartridge relief valve offers a smooth transition in response to a load change in a hydraulic circuit.

**FEATURES AND BENEFITS**

Leakproof screw adjustment.

Adjustment screw can not be backed out of valve.

Overset protection – spring can not go solid.

Hardened precision fitted poppet & cage provides reliable, long life.

All external carbon steel parts are plated for longer life against the elements.

Valve is available with screw, tamperproof, capped and handknob adjustments.

All cartridge valves are 100% functionally tested.

Industry common cavity.

**SPECIFICATIONS**

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 10.0 GPM [38 L/M] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops/min [.25 cc/m] @ 85% of crack pressure.

DEFINITION OF CRACK: evident at 0.06 GPM [0.25 LPM]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-0822 for Buna "N".

SKV-0822 for Viton.

WEIGHT: 0.26 lb [.12 kg] cartridge only.

VALVE CAVITY: #C0820, See Page 0-011.0.

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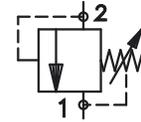
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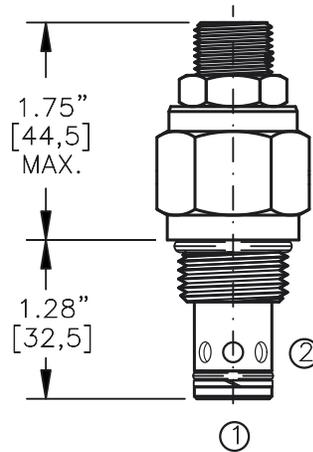
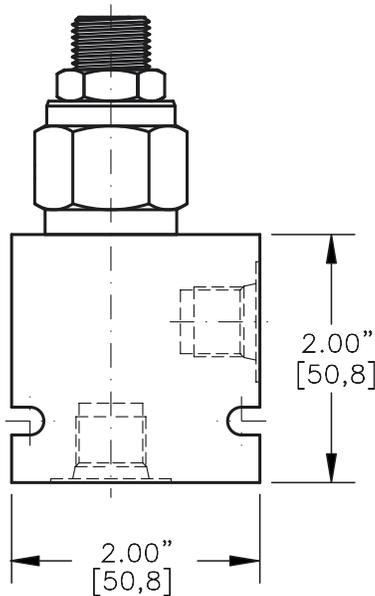
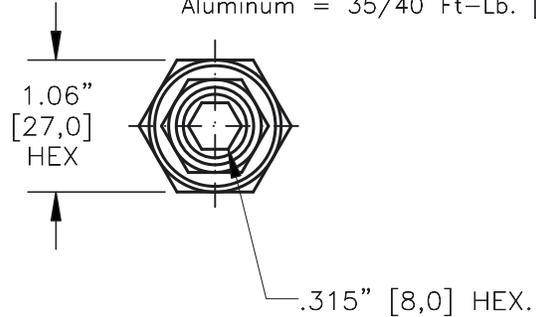
RELIEF VALVE DIFFERENTIAL AREA,  
POPPET TYPE



Pat.#5,546,980

TORQUE:

Steel = 55/60 Ft-Lb. [74/81 Nm]  
Aluminum = 35/40 Ft-Lb. [47/54 Nm]

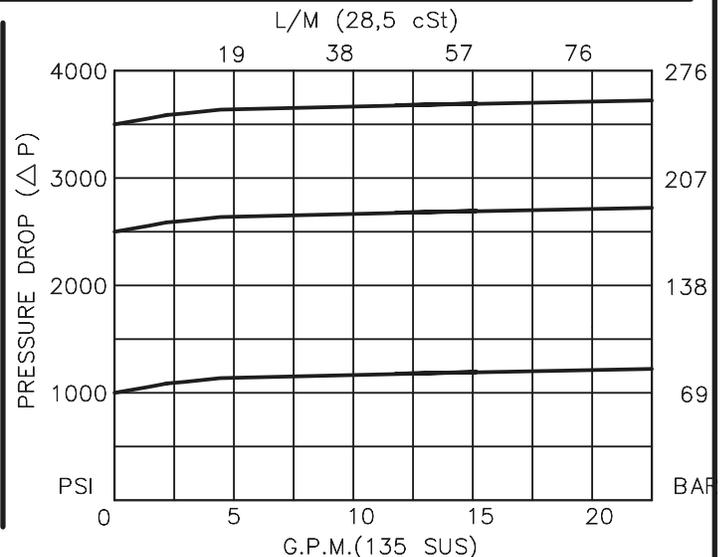


FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-012.1

**RVDA-10-N-S-0-XX**

- BASIC
- SIZE  
10 = 7/8"-14 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- ADJUSTMENT  
S = ADJUSTING SCREW  
C = CAPPED  
T = TAMPERPROOF  
K = HANDKNOB  
M = METAL HANDKNOB
- PRESSURE RANGE  
15 = 100 TO 1500 PSI  
30 = 300 TO 3000 PSI  
50 = 500 TO 5000 PSI
- PORTS  
0 = CARTRIDGE ONLY  
02BX = G 1/4" BSP  
03BX = G 3/8" BSP  
06TX = SAE - #6  
08TX = SAE - #8
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING

FOR ADJUSTMENT CONTROL  
OPTIONS SEE PAGE 0-050.0



**RELIEF VALVE DIFFERENTIAL AREA,  
POPPET TYPE****DESCRIPTION**

This unit is a DIFFERENTIAL AREA RELIEF VALVE, cartridge type, direct acting, poppet type, low leakage, screw in type, adjustable, pressure control valve.

**OPERATIONS**

This valve (RVDA) blocks flow from port #2 to port #1 until sufficient pressure is present at port #2 to force the poppet from its seat thus opening the valve.

This cartridge relief valve offers a smooth transition in response to a load change in a hydraulic circuit.

**FEATURES AND BENEFITS**

Leakproof screw adjustment.

Adjustment screw can not be backed out of valve.

Overset protection – spring can not go solid.

Hardened precision fitted poppet & cage provides reliable, long life.

All external carbon steel parts are plated for longer life against the elements.

Valve is available with screw, tamperproof, capped and handknob adjustments.

All cartridge valves are 100% functionally tested.

Industry common cavity.

**SPECIFICATIONS**

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 20.0 GPM [76 L/M] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops/min [.25 cc/m] @ 85% of crack pressure.

DEFINITION OF CRACK: evident at 0.06 GPM [0.25 LPM]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-1021 for Buna "N".

SKV-1021 for Viton.

WEIGHT: 0.38 lb [.17 kg] cartridge only.

VALVE CAVITY: #C1020, See Page 0-012.0.

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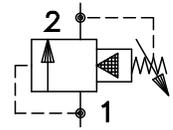
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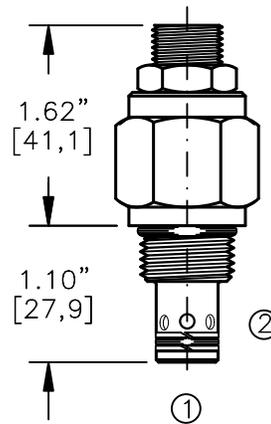
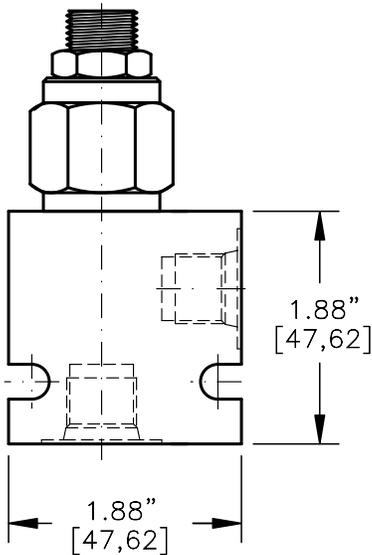
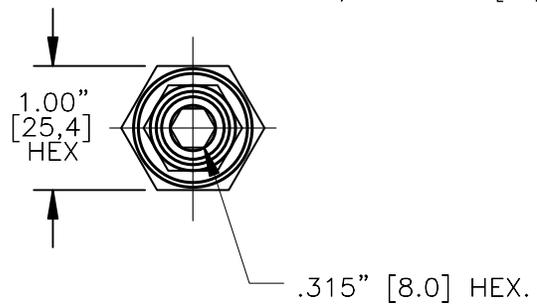
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RELIEF VALVE  
PILOT OPERATED, SLIDING SPOOL



TORQUE:

Steel = 35/40 Ft-Lb. [47/54 Nm]  
Aluminum = 25/30 Ft-Lb. [34/41 Nm]

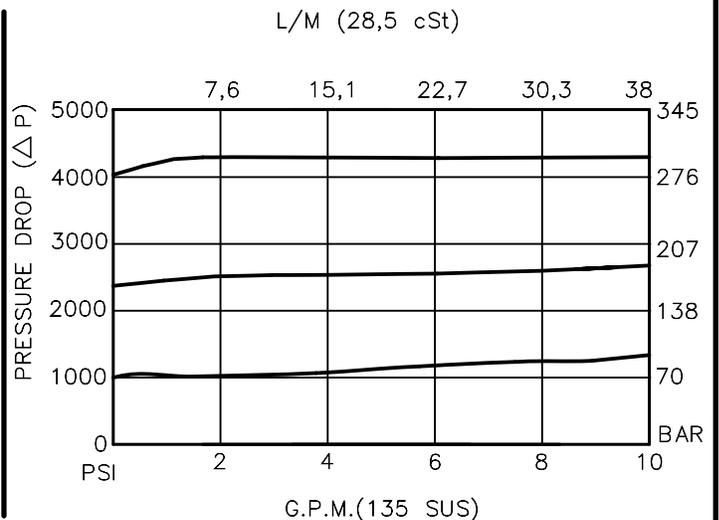


FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-011.1

**RVPS-08-X-X-X-XX**

- BASIC
- SIZE  
08 = 3/4"-16 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- ADJUSTMENT  
S = ADJUSTING SCREW  
C = CAPPED  
T = TAMPERPROOF  
K = HANDKNOB  
M = METAL HANDKNOB
- PRESSURE RANGE  
15 = 50 TO 1500 PSI  
30 = 50 TO 3000 PSI  
50 = 50 TO 5000 PSI
- PORTS  
0 = CARTRIDGE ONLY  
02BX = G 1/4" BSPP  
06TX = SAE - #6
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING

FOR ADJUSTMENT CONTROL  
OPTIONS SEE PAGE 0-050.0



## RELIEF VALVE

### PILOT OPERATED, SLIDING SPOOL

#### DESCRIPTION

This unit is a PILOT OPERATED, BALANCED SLIDING SPOOL, PRESSURE RELIEF, cartridge valve for accurate and smooth pressure regulation.

#### OPERATIONS

This valve (RVPS) blocks flow from port #1 to port #2 until sufficient pressure is present at port #1 to force the pilot poppet from its seat thus opening the valve.

This cartridge relief valve offers a smooth transition in response to a load change in a hydraulic circuit.

#### FEATURES AND BENEFITS

Leakproof screw adjustment.

Pressure in tank port (2) will add to the bias spring setting, and is limited to 2000 PSI.

Adjustment screw can not be backed out of the valve.

Overset protection – pilot spring can not go solid.

Hardened precision fitted spool & cage provides reliable, long life.

A unique self aligning (floating) cage provides very low hysteresis and reliable operation.

All external carbon steel parts are plated for longer life against the elements.

Valve is available with screw, tamperproof, capped and handknob adjustments.

All cartridge valves are 100% functionally tested.

Industry common cavity.

#### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 15.0 GPM [57 L/M] nominal. See performance chart.

INTERNAL LEAKAGE: 5 cu.in/min [85 cc/m] @ 95% of crack pressure.

DEFINITION OF CRACK: evident at 0.06 GPM [0.25 LPM]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-0822 for Buna "N".

SKV-0822 for Viton.

WEIGHT: 0.26 lb [.12 kg] cartridge only.

VALVE CAVITY: #C0820, See Page 0-011.0.

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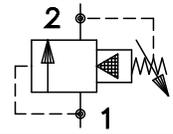
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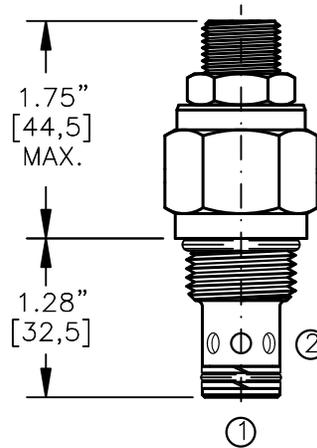
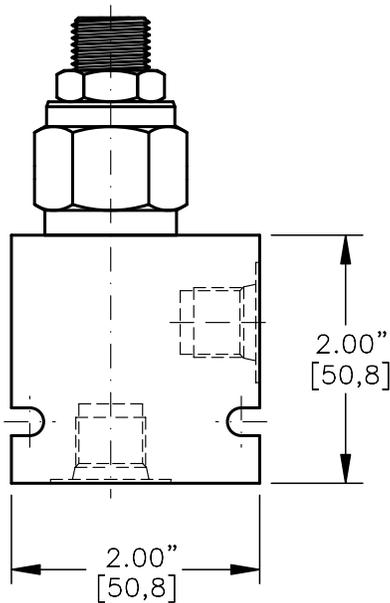
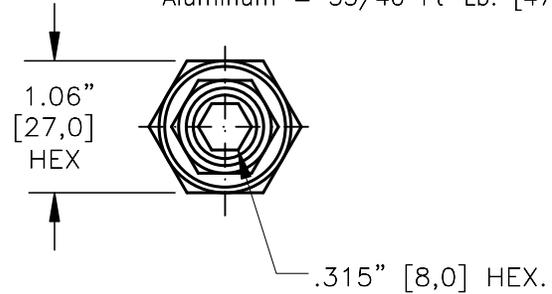
RELIEF VALVE PILOT OPERATED,  
SLIDING SPOOL



Pat.#5,546,980

TORQUE:

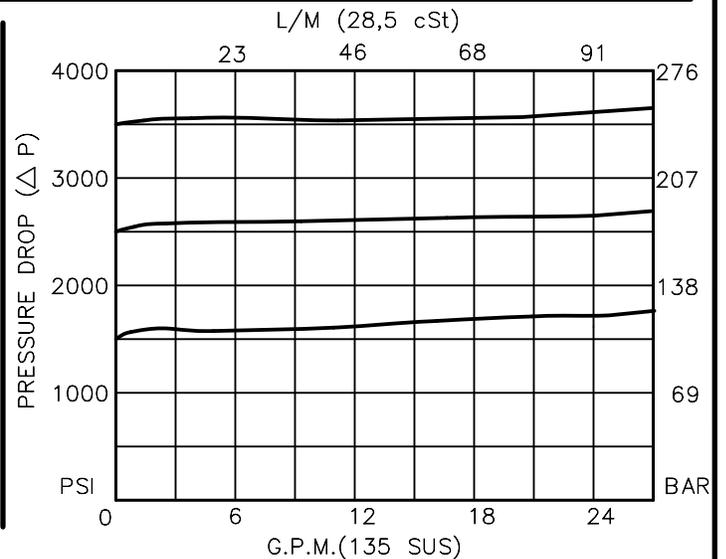
Steel = 55/60 Ft-Lb. [74/81 Nm]  
Aluminum = 35/40 Ft-Lb. [47/54 Nm]



FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-012.1

- RVPS-10-X-X-X-XX**
- BASIC
  - SIZE  
10 = 7/8"-14 UNF
  - SEALS  
N = BUNA "N"  
V = VITON
  - ADJUSTMENT  
S = ADJUSTING SCREW  
C = CAPPED  
T = TAMPERPROOF  
K = HANDKNOB  
M = METAL HANDKNOB
  - PRESSURE RANGE  
15 = 50 TO 1500 PSI  
30 = 50 TO 3000 PSI  
50 = 50 TO 5000 PSI
  - PORTS  
0 = CARTRIDGE ONLY  
02BX = G 1/4" BSPP  
03BX = G 3/8" BSPP  
06TX = SAE - #6  
08TX = SAE - #8
  - "A" - ALUM. HOUSING  
"S" - STEEL HOUSING

FOR ADJUSTMENT CONTROL  
OPTIONS SEE PAGE 0-050.0



**RELIEF VALVE PILOT OPERATED,  
SLIDING SPOOL****DESCRIPTION**

This unit is a PILOT OPERATED, BALANCED SLIDING SPOOL, PRESSURE RELIEF, cartridge valve for accurate and smooth pressure regulation.

**OPERATIONS**

This valve (RVPS) blocks flow from port #1 to port #2 until sufficient pressure is present at port #1 to force the pilot poppet from its seat thus opening the valve.

This cartridge relief valve offers a smooth transition in response to a load change in a hydraulic circuit.

**FEATURES AND BENEFITS**

Leakproof screw adjustment.

Pressure in tank port (2) will add to the bias spring setting, and is limited to 2000 PSI.

Adjustment screw can not be backed out of the valve.

Overset protection – pilot spring can not go solid.

Hardened precision fitted spool & cage provides reliable, long life.

A unique self aligning (floating) cage provides very low hysteresis and reliable operation.

All external carbon steel parts are plated for longer life against the elements.

Valve is available with screw, tamperproof, capped and handknob adjustments.

All cartridge valves are 100% functionally tested.

Industry common cavity.

**SPECIFICATIONS**

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 26.0 GPM [100 L/M] nominal. See performance chart.

INTERNAL LEAKAGE: 5 cu.in/min [85 cc/m] @ 95% of crack pressure.

DEFINITION OF CRACK: evident at 0.06 GPM [0.25 LPM]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-1022 for Buna "N".

SKV-1022 for Viton.

WEIGHT: 0.38 lb [.17 kg] cartridge only.

VALVE CAVITY: #C1020, See Page 0-012.0.

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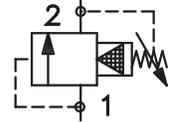
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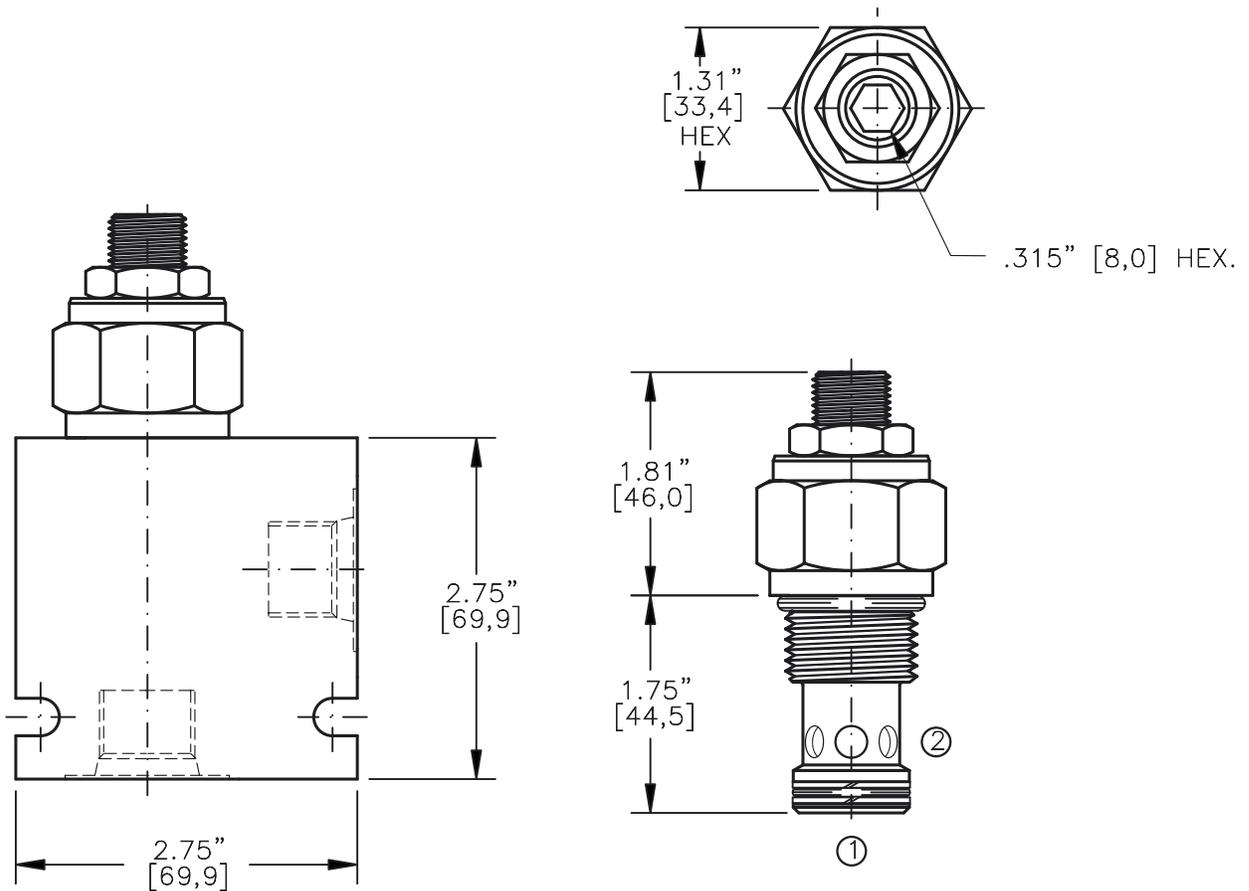
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RELIEF VALVE  
PILOT OPERATED, SLIDING SPOOL



Pat, # 5,546,980

TORQUE:  
Steel = 70/75 Ft-Lb. [95/102 Nm]  
Aluminum = 55/60 Ft-Lb. [74/81 Nm]

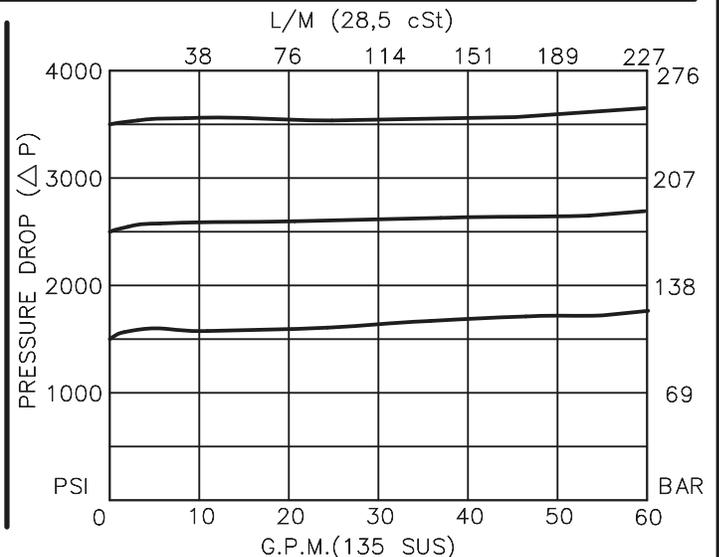


FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-013.1

**RVPS-12-X-X-X-XX**

- BASIC
- SIZE  
12 = 1.062"-12 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- ADJUSTMENT  
S = ADJUSTING SCREW  
C = CAPPED  
T = TAMPERPROOF  
K = HANDKNOB  
M = METAL HANDKNOB
- PRESSURE RANGE  
15 = 100 TO 1500 PSI  
30 = 300 TO 3000 PSI  
50 = 500 TO 5000 PSI
- PORTS  
0 = CARTRIDGE ONLY  
04BX = G 1/2" BSPP  
06BX = G 3/4" BSPP  
10TX = SAE - #10  
12TX = SAE - #12
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING

FOR ADJUSTMENT CONTROL OPTIONS SEE PAGE 0-050.0



## RELIEF VALVE PILOT OPERATED, SLIDING SPOOL

### DESCRIPTION

This unit is a PILOT OPERATED, BALANCED SLIDING SPOOL, PRESSURE RELIEF, cartridge valve for accurate and smooth pressure regulation.

### OPERATIONS

This valve blocks flow from port 1 to port 2 until sufficient pressure is present at port 1 to force the pilot poppet from its seat thus opening the valve.

This cartridge relief valve offers a smooth transition in response to a load change in a hydraulic circuit.

### FEATURES AND BENEFITS

Leakproof screw adjustment.

Pressure in tank port (2) will add to the bias spring setting, and is limited to 2000 PSI.

Adjustment screw can not be backed out of the valve.

Overset protection – pilot spring can not go solid.

Hardened precision fitted spool & cage provides reliable, long life.

A unique self aligning (floating) cage provides very low hysteresis and reliable operation.

All external carbon steel parts are plated for longer life against the elements.

Valve is available with screw, tamperproof, capped and handknob adjustments.

All cartridge valves are 100% functionally tested.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 60.0 GPM [227 L/M] nominal. See performance chart.

INTERNAL LEAKAGE: 5 cu.in/min [85 cc/m] @ 95% of crack pressure.

DEFINITION OF CRACK: evident at 0.06 GPM [0.25 LPM]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as

MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-1222 for Buna "N".

SKV-1222 for Viton.

WEIGHT: 0.63 lb [.25 kg] cartridge only.

VALVE CAVITY: #C1220, See Page 0-013.0.

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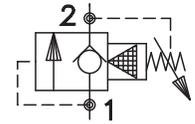
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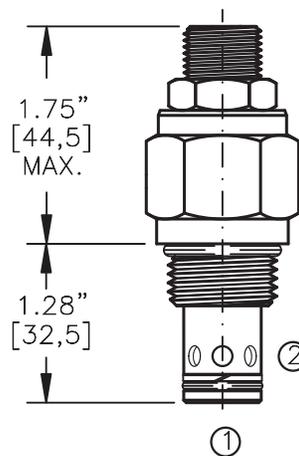
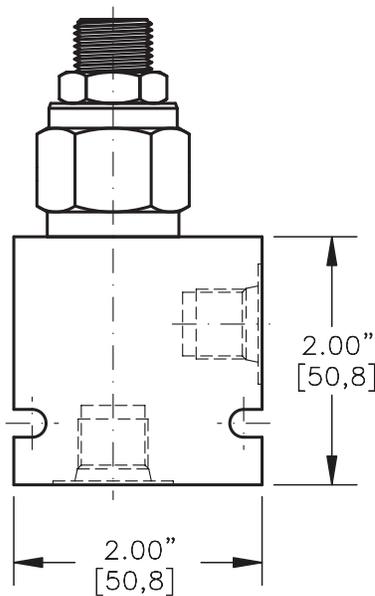
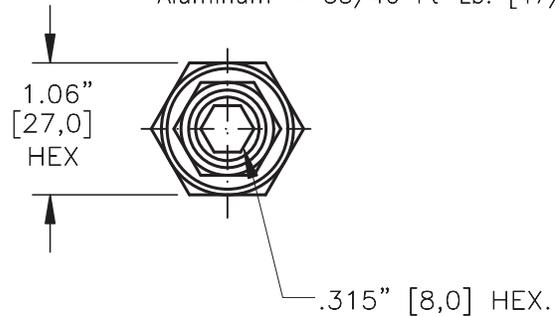
The information does not relieve users from the duty of conducting their own evaluations and tests. Because the products are subject to continual improvement, we reserve the right to amend the product specifications contained in this catalogue.

RELIEF VALVE PILOT OPERATED,  
POPPET TYPE, FREE REVERSE FLOW



TORQUE:

Steel = 55/60 Ft-Lb. [74/81 Nm]  
Aluminum = 35/40 Ft-Lb. [47/54 Nm]



FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-012.1

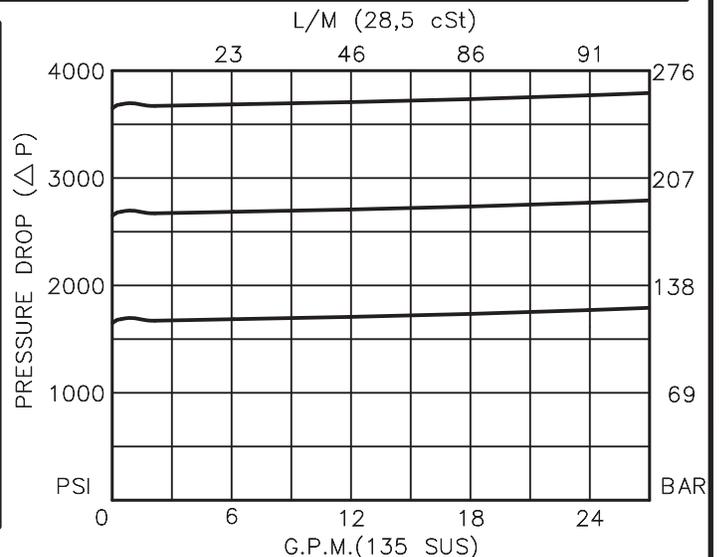
**RVPP-10-X-X-X-XX**

- BASIC
- SIZE  
10 = 7/8"-14 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- ADJUSTMENT  
S = ADJUSTING SCREW  
C = CAPPED  
T = TAMPERPROOF  
K = HANDKNOB  
M = METAL HANDKNOB

- PRESSURE RANGE  
15 = 50 TO 1500 PSI  
30 = 50 TO 3000 PSI  
50 = 50 TO 5000 PSI

- PORTS  
0 = CARTRIDGE ONLY  
02BX = G 1/4" BSPP  
03BX = G 3/8" BSPP  
06TX = SAE - #6  
08TX = SAE - #8
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING

FOR ADJUSTMENT CONTROL  
OPTIONS SEE PAGE 0-050.0



**RELIEF VALVE PILOT OPERATED,  
POPPET TYPE, FREE REVERSE FLOW****DESCRIPTION**

This unit is a PILOT OPERATED, POPPET TYPE, ADJUSTABLE, HYDRAULIC PRESSURE RELIEF WITH FREE REVERSE FLOW, screw in cartridge valve.

**OPERATIONS**

This valve (RVPP) blocks flow from port #1 to port #2 until sufficient pressure is present at port #1 to force the pilot poppet from its seat thus opening the valve.

This cartridge relief valve offers a free reverse flow suitable for anti-cavitation and it has a very fast response and low hysteresis.

**FEATURES AND BENEFITS**

Leakproof screw adjustment.

Pressure in tank port (2) will add to the bias spring setting, and is limited to 2000 PSI.

Adjustment screw can not be backed out of the valve.

Overset protection—pilot spring can not go solid.

Hardened precision fitted poppet & cage provides reliable, long life.

A unique self aligning (floating) cage provides very low hysteresis and reliable operation.

All external carbon steel parts are plated for longer life against the elements.

Valve is available with screw, tamperproof, capped and handknob adjustments.

All cartridge valves are 100% functionally tested.

Industry common cavity.

**SPECIFICATIONS**

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 26.0 GPM [100 L/M] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops/min (.25 cc/m) @ 90% of crack pressure.

DEFINITION OF CRACK: evident at 0.06 GPM (0.25 LPM)

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-1021 for Buna "N".

SKV-1021 for Viton.

WEIGHT: 0.38 lb [.17 kg] cartridge only.

VALVE CAVITY: #C1020, See Page 0-012.0.

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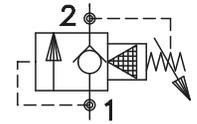
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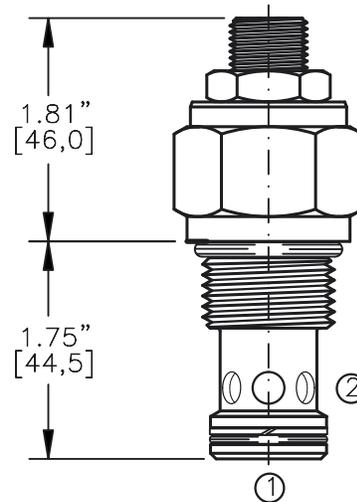
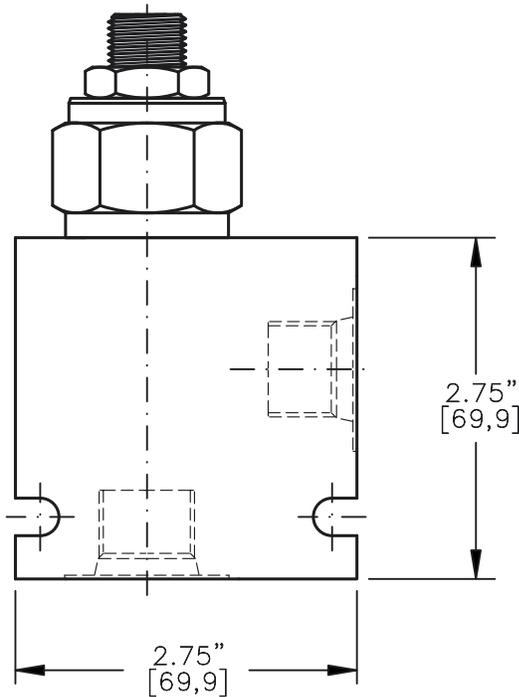
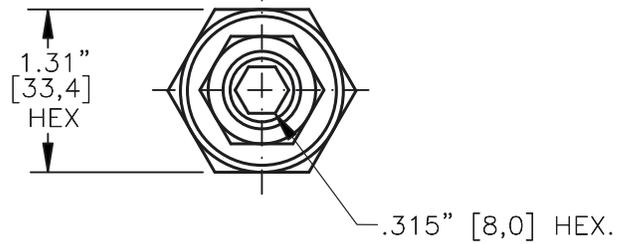
RELIEF VALVE PILOT OPERATED,  
POPPET TYPE, FREE REVERSE FLOW



Pat, # 5,546,980

TORQUE:

Steel = 70/75 Ft-Lb. [95/102 Nm]  
Aluminum = 55/60 Ft-Lb. [74/81 Nm]



FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-013.1

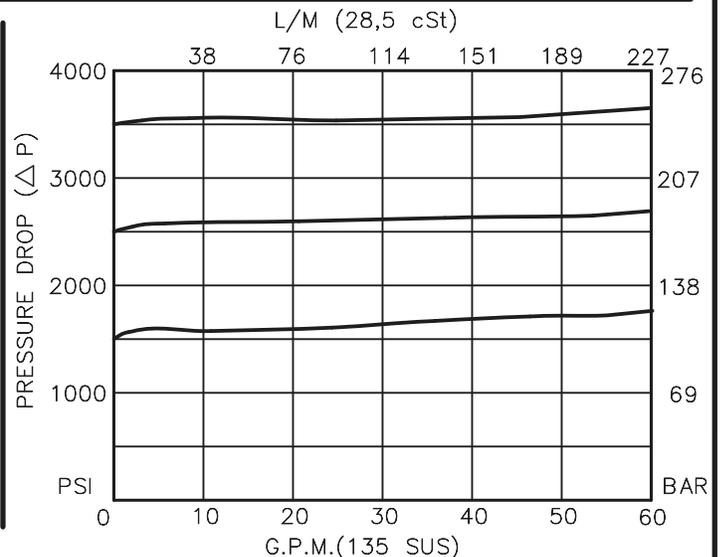
**RVPP-12-X-X-X-XX**

- BASIC
- SIZE  
12 = 1.062"-12 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- ADJUSTMENT  
S = ADJUSTING SCREW  
C = CAPPED  
T = TAMPERPROOF  
K = HANDKNOB  
M = METAL HANDKNOB

- PRESSURE RANGE  
15 = 100 TO 1500 PSI  
30 = 300 TO 3000 PSI  
50 = 500 TO 5000 PSI

- PORTS  
0 = CARTRIDGE ONLY  
04BX = G 1/2" BSPP  
06BX = G 3/4" BSPP  
10TX = SAE - #10  
12TX = SAE - #12
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING

FOR ADJUSTMENT CONTROL  
OPTIONS SEE PAGE 0-050.0



## RELIEF VALVE PILOT OPERATED, POPPET TYPE, FREE REVERSE FLOW

### DESCRIPTION

This unit is a PILOT OPERATED, POPPET TYPE, ADJUSTABLE, HYDRAULIC PRESSURE RELIEF WITH FREE REVERSE FLOW, screw in cartridge valve.

### OPERATIONS

This valve (RVPP) blocks flow from port #1 to port #2 until sufficient pressure is present at port #1 to force the pilot poppet from its seat thus opening the valve.

This cartridge relief valve offers a free reverse flow suitable for anti-cavitation and it has a very fast response and low hysteresis.

### FEATURES AND BENEFITS

Leakproof screw adjustment.

Pressure in tank port (2) will add to the bias spring setting, and is limited to 2000 PSI.

Adjustment screw can not be backed out of the valve.

Overset protection—pilot spring can not go solid.

Hardened precision fitted poppet & cage provides reliable, long life.

A unique self aligning (floating) cage provides very low hysteresis and reliable operation.

All external carbon steel parts are plated for longer life against the elements.

Valve is available with screw, tamperproof, capped and handknob adjustments.

All cartridge valves are 100% functionally tested.

Industry common cavity.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 60.0 GPM [230 L/M] nominal. See performance chart.

INTERNAL LEAKAGE: 5 drops/min (.25 cc/m) @ 90% of crack pressure.

DEFINITION OF CRACK: evident at 0.06 GPM (0.25 LPM)

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as

MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-1221 for Buna "N".

SKV-1221 for Viton.

WEIGHT: 0.63 lb [.25 kg] cartridge only.

VALVE CAVITY: #C1220, See Page 0-013.0.

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www.bucherhydraulics.com/commoncavity

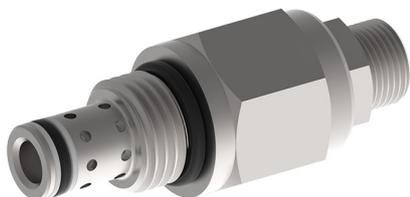
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## Pressure-Relief Cartridge Valve, Size SAE 08 / NG 5

$Q_{\max} = 10.0 \text{ gpm [37 l/min]}$ ,  $p_{\max} = 5000 \text{ psi [350 bar]}$   
bi-directional, poppet type, adjustable  
Series RVBD-08...



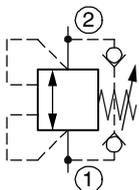
- Screw-in cartridge acc. to ISO 17209 – Common Cavity
- Compact construction
- For common cavities: C0820, BH/C0820 – 3/4-16 UNF
- 3 pressure ranges available
- Adjustment screw can not be backed out of valve
- A unibody cage construction provides very low hysteresis, dependable and reliable operation
- Hardened precision fitted poppet & cage provides reliable long life
- Overset protection, spring can not go solid
- All external parts are zinc-plated for longer life
- All cartridges valves are 100% functionally tested

### 1 Description

Series RVBD-08... pressure-relief cartridges are size SAE 08 / NG 5, high performance screw-in cartridges with a 3/4-16 UNF mounting thread. This cartridge is a bi-directional pressure valve, is adjustable, has an extremely low leakage and has a conical piston design. Due to the differential range the valve can also be used as a pressure con-

trol valve. This valve relieves from port 1 to port 2 and port 2 to port 1. This valve provides a fast response, rugged, dirt tolerant operation and has a good pressure vs. flow characteristics. All external parts of the cartridge are zinc plated and are thus suitable for use in the harshest operating environments

### 2 Symbol



### 3 Technical data

General characteristics	Description, value, unit
Designation	pressure-relief cartridge
Design	bi-directional, poppet type, adjustable
Mounting method	screw-in cartridge 3/4-16 UNF
Tightening torque	see chapter 5, dimensions & sectional view
Size	SAE 08, cavity type C0820 NG 5, cavity type BH/C0820
Weight	0.325 lbs [0.15 kg]
Mounting attitude	unrestricted
Ambient temperature range	-40 °F ... +248 °F [-40 °C ... +120 °C]

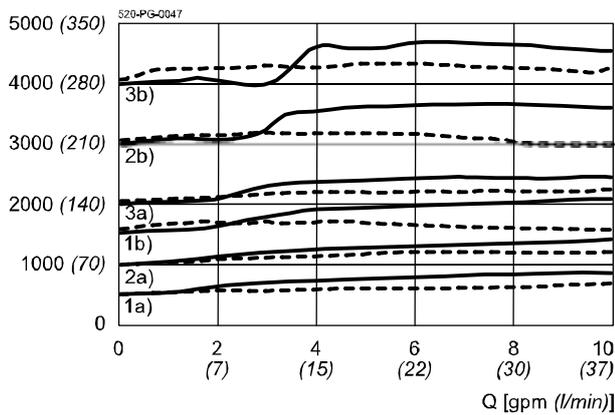
Hydraulic characteristics	Description, value, unit
Maximum operating pressure - ports 1, 2	5000 psi [350 bar]
Maximum flow rate	10 gpm [37 l/min]
Nominal pressure ranges	1500, 3000, 5000 psi [105, 210, 350 bar] For further pressure ranges, please contact BUCHER
Flow direction	1 → 2 pressure relieving 2 → 1 pressure relieving
Definition of opening	visible at 0.06 gpm [0,25 l/min]
Internal leakage	5 cu. in./min (85 cc/min) @ 80% of opening pressure
Hydraulic fluid	HL and HLP mineral oil to DIN 51 524; for other fluids, please contact BUCHER
Hydraulic fluid temperature range	-13 °F ... +158 °F [-25 °C ... +70 °C]
Viscosity range	10...500 mm <sup>2</sup> /s (cSt), recommended 15...250 mm <sup>2</sup> /s (cSt)
Minimum fluid cleanliness Cleanliness class to ISO 4406 : 1999	class 18/16/13

## 4 Performance graphs

measured with oil viscosity 33 mm<sup>2</sup>/s (cSt)

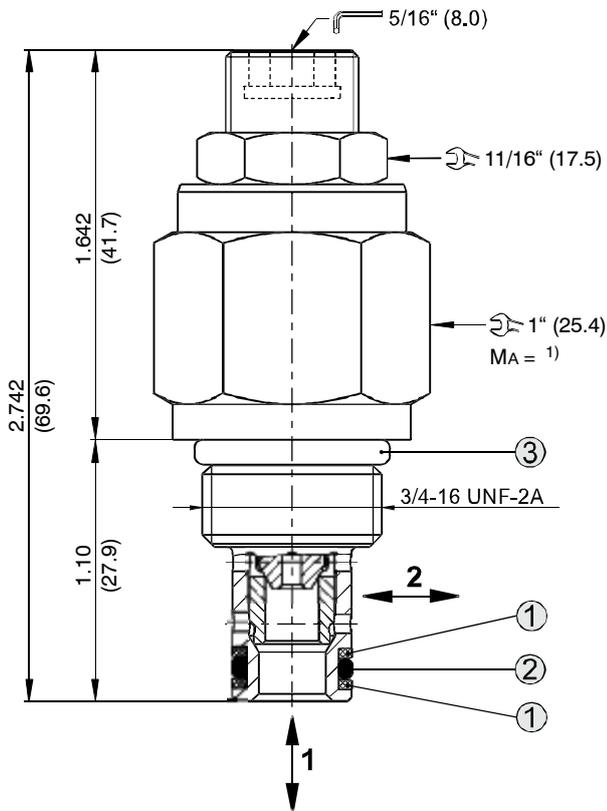
$p = f(Q)$  Pressure - Flow rate characteristic [ $p_N = 5000$  psi]

$p$  [psi (bar)]



- 1a) = 1500 PSI -  $p_N$  500 psi (34 bar) — 1→2 - - 2→1
- 1b) = 1500 PSI -  $p_N$  1500 psi (103 bar) — 1→2 - - 2→1
- 2a) = 3000 PSI -  $p_N$  1000 psi (68 bar) — 1→2 - - 2→1
- 2b) = 3000 PSI -  $p_N$  3000 psi (206 bar) — 1→2 - - 2→1
- 3a) = 5000 PSI -  $p_N$  2000 psi (137 bar) — 1→2 - - 2→1
- 3b) = 5000 PSI -  $p_N$  4000 psi (275 bar) — 1→2 - - 2→1

## 5 Dimensions & sectional view



Tightening torque  $M_A$  <sup>1)</sup>

Cavity type	C0820 – BH/C0820
When fitted in aluminium	25...30 ft-lbs (34 - 42 [Nm])
When fitted in steel	35...40 ft-lbs (47 - 54 [Nm])

## 6 Installation information



### IMPORTANT!

When fitting the cartridges, use the specified tightening torque. No adjustments are necessary, since the cartridges are set in the factory.



### ATTENTION!

Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.

Seal kit NBR no. SKN-0822 <sup>2)</sup>

Item	Qty.	Description		
1	2	Backup ring	∅ 0,390 x 0,053 x 0,048	Inch
2	1	O-ring 012	∅ 0,364 x 0,070 FKM	Inch
3	1	O-ring 908	∅ 0,664 x 2,087 FKM	Inch



### IMPORTANT!

<sup>2)</sup> Seal kit with FKM (Viton) seals, no. SKV-0822

### 7 Ordering code

Ex. RVBD - 08 - N - S - 0 - 30 - \_

- RVBD = pressure-relief valve, bi-directional
- 08 = nominal size SAE 08 / NG 5
- N = NBR (Nitrile) seals (standard)
- V = FKM (Viton) seals  
(special seals - please contact BUCHER)
- S = adjustment screw (standard)
- C = capped adjustment screw
- T = tamperproof
- K = handknob
- M = metal handknob
- 0 = cartridge only
- 06TA = line-mounting body SAE-6      aluminum
- 06TS = line-mounting body SAE-6      steel
- 15 = pressure stage 100 ... 1500 psi
- 30 = pressure stage 750 ... 3000 psi
- 50 = pressure stage 1500 ... 5000 psi
- (blank) = without pressure setting (standard)
- /XX = factory pressure setting in "100 psi" (e.g. "/12" = 1200 PSI)

### 8 Related data sheets

Reference	Description
520-P-000050	The form-tool loan program
520-P-000110	Cavity type C0820
400-P-040401	Cavity type BH/0820
520-P-000111	Line-mounting body, 8 Series -2-way

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[www.bucherhydraulics.com/commoncavity](http://www.bucherhydraulics.com/commoncavity)

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Classification: 430.300.300.305.310.330

## Pressure-Relief Cartridge Valve, Size SAE 10 / NG 8

$Q_{\max} = 20 \text{ gpm [75 l/min]}$ ,  $p_{\max} = 5000 \text{ psi [350 bar]}$

bi-directional, poppet type, adjustable

Series RVBD-10...



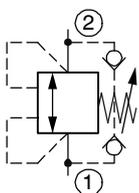
- Screw-in valve acc. to ISO 17209 – Common Cavity
- Compact construction
- For common cavities: C1020, AX/C1020 – 7/8-14 UNF
- 3 pressure ranges available
- Adjustment screw can not be backed out of valve
- A unibody cage construction provides very low hysteresis, dependable and reliable operation
- Hardened precision fitted poppet & cage provides reliable long life
- Overset protection, spring can not go solid
- All external parts are zinc-plated for longer life
- All cartridges valves are 100% functionally tested

### 1 Description

Series RVBD-10... pressure-relief cartridges are size SAE 10 / NG 8, high performance screw-in cartridges with a 7/8-14 UNF mounting thread. This cartridge is a bi-directional pressure valve, is adjustable, has an extremely low leakage and has a conical piston design. Due to the differential range the valve can also be used as a pressure con-

trol valve. This valve relieves from port 1 to port 2 and port 2 to port 1. This valve provides a fast response, rugged, dirt tolerant operation and has a good pressure vs. flow characteristics. All external parts of the cartridge are zinc plated and are thus suitable for use in the harshest operating environments

### 2 Symbol



### 3 Technical data

General characteristics	Description, value, unit
Designation	pressure-relief cartridge
Design	bi-directional, poppet type, adjustable
Mounting method	screw-in cartridge 7/8-14 UNF
Tightening torque	see chapter 5, dimensions & sectional view
Size	SAE 10, cavity type C1020 NG 8, cavity type AX/C1020
Weight	0.38 lbs [0.17 kg]
Mounting attitude	unrestricted
Ambient temperature range	-40 °F ... +248 °F [-40 °C ... +120 °C]

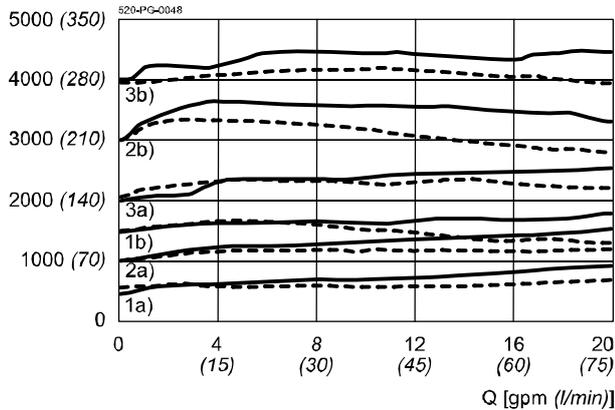
Hydraulic characteristics	Description, value, unit
Maximum operating pressure - ports 1, 2	5000 psi [350 bar]
Maximum flow rate	20 gpm [75 l/min]
Nominal pressure ranges	1500, 3000, 5000 psi [105, 210, 350 bar] For further pressure ranges, please contact BUCHER
Flow direction	1 → 2 pressure relieving 2 → 1 pressure relieving
Definition of opening	visible at 0.06 gpm [0,25 l/min]
Internal leakage	5 cu. in./min (85 cc/min) @ 85% of opening pressure
Hydraulic fluid	HL and HLP mineral oil to DIN 51 524; for other fluids, please contact BUCHER
Hydraulic fluid temperature range	-13 °F ... +158 °F [-25 °C ... +70 °C]
Viscosity range	10...500 mm <sup>2</sup> /s (cSt), recommended 15...250 mm <sup>2</sup> /s (cSt)
Minimum fluid cleanliness Cleanliness class to ISO 4406 : 1999	class 18/16/13

## 4 Performance graphs

measured with oil viscosity 33 mm<sup>2</sup>/s (cSt)

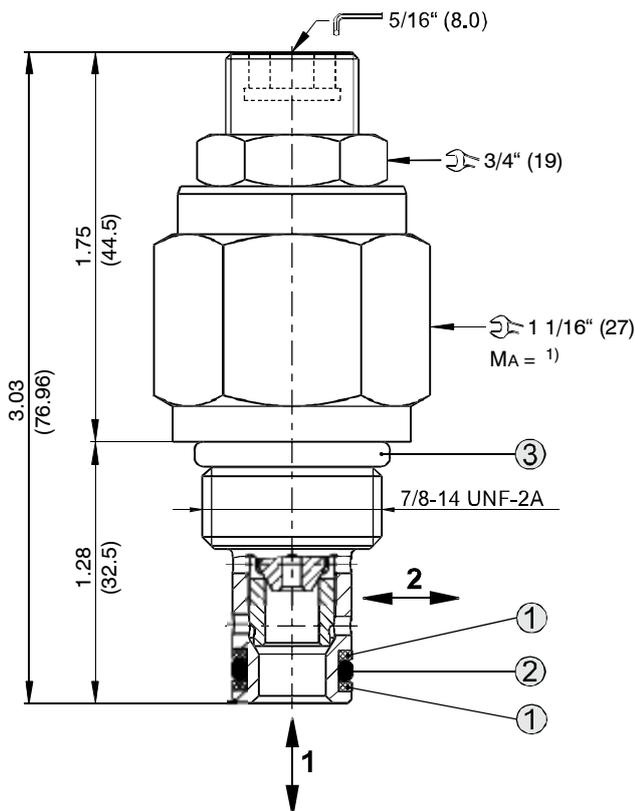
$p = f(Q)$  Pressure - Flow Rate / Druck-Volumenstrom

$p$  [psi (bar)]



- 1a) = 1500 PSI -  $p_N$  500 psi (34 bar) — 1→2 - - 2→1
- 1b) = 1500 PSI -  $p_N$  1500 psi (103 bar) — 1→2 - - 2→1
- 2a) = 3000 PSI -  $p_N$  1000 psi (68 bar) — 1→2 - - 2→1
- 2b) = 3000 PSI -  $p_N$  3000 psi (206 bar) — 1→2 - - 2→1
- 3a) = 5000 PSI -  $p_N$  2000 psi (137 bar) — 1→2 - - 2→1
- 3b) = 5000 PSI -  $p_N$  4000 psi (275 bar) — 1→2 - - 2→1

## 5 Dimensions & sectional view



Tightening torque  $M_A$  <sup>1)</sup>

Cavity type	C1020 – AX/C1020
When fitted in aluminium	28...32 ft-lbs (38 - 43 [Nm])
When fitted in steel	55...60 ft-lbs (74 - 81 [Nm])

## 6 Installation information



### IMPORTANT!

When fitting the cartridges, use the specified tightening torque. No adjustments are necessary, since the cartridges are set in the factory.



### ATTENTION!

Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.

Seal kit NBR no. SKN-1022 <sup>2)</sup>

Item	Qty.	Description		
1	2	Backup ring	∅ 0,518 x 0,053 x 0,048	Inch
2	1	O-ring 014	∅ 0,489 x 0,070 FKM	Inch
3	1	O-ring 910	∅ 0,775 x 0,097 FKM	Inch



### IMPORTANT!

<sup>2)</sup> Seal kit with FKM (Viton) seals, no. SKV-1022

### 7 Ordering code

Ex. RVBD - 10 - N - S - 0 - 30 - \_

- RVBD = pressure-relief valve, bi-directional
- 10 = nominal size SAE 10 / NG 8
- N = NBR (Nitrile) seals (standard)
- V = FKM (Viton) seals  
(special seals - please contact BUCHER)
- S = adjustment screw (standard)
- C = capped adjustment screw
- T = tamperproof
- K = handknob
- M = metal handknob
- 0 = cartridge only
- 06TA = line-mounting body SAE-6      aluminum
- 06TS = line-mounting body SAE-6      steel
- 08TA = line-mounting body SAE-8      aluminum
- 08TS = line-mounting body SAE-8      steel
- 15 = pressure stage 100 ... 1500 psi
- 30 = pressure stage 750 ... 3000 psi
- 50 = pressure stage 1500 ... 5000 psi
- (blank) = without pressure setting (standard)
- /XX = factory pressure setting in "100 psi" (e.g. "/12" = 1200 PSI)

### 8 Related data sheets

Reference	(Old no.)	Description
520-P-000050		The form-tool loan program
520-P-000120		Cavity type C1020
400-P-040261		Cavity type AX/C1020
520-P-000121		Line-mounting body, 10 Series -2-way

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[www.bucherhydraulics.com/commoncavity](http://www.bucherhydraulics.com/commoncavity)

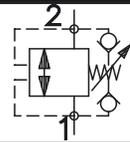
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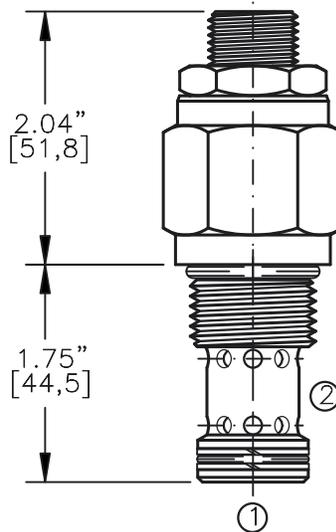
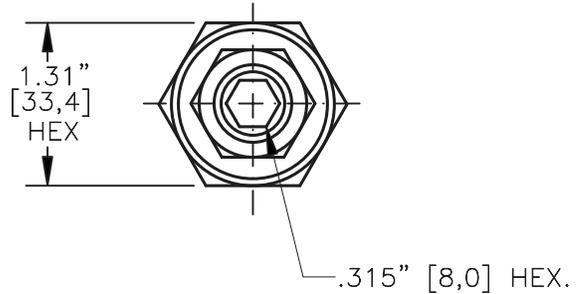
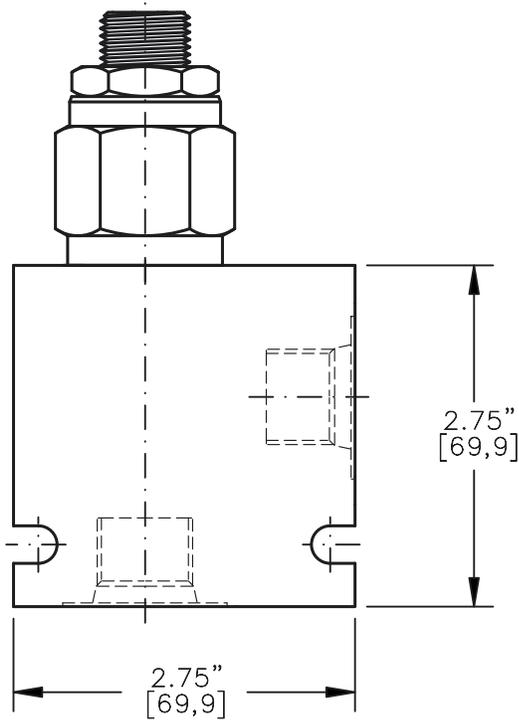
Classification: 430.300.300.305.310.330

RELIEF VALVE  
POPPET TYPE, BI-DIRECTIONAL (CROSS-OVER)



TORQUE:

Steel = 70/75 Ft-Lb. [95/102 Nm]  
Aluminum = 55/60 Ft-Lb. [74/81 Nm]

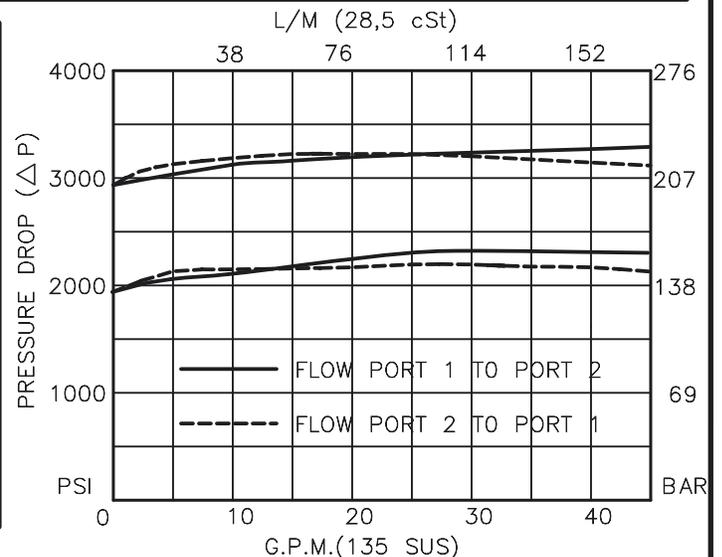


FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-013.1

**RVBD-12-X-X-X-XX**

- BASIC
- SIZE  
12 = 1.062"-12 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- ADJUSTMENT  
S = ADJUSTING SCREW  
C = CAPPED  
T = TAMPERPROOF
- PRESSURE RANGE  
15 = 100 TO 1500 PSI  
30 = 300 TO 3000 PSI  
50 = 500 TO 5000 PSI
- PORTS  
0 = CARTRIDGE ONLY  
04BX = G 1/2" BSPP  
06BX = G 3/4" BSPP  
10TX = SAE - #10  
12TX = SAE - #12
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING

FOR ADJUSTMENT CONTROL  
OPTIONS SEE PAGE 0-050.0



## RELIEF VALVE

### POPPET TYPE, BI-DIRECTIONAL (CROSS-OVER)

#### DESCRIPTION

This unit is a CARTRIDGE STYLE, DIFFERENTIAL AREA, POPPET TYPE, BI-DIRECTIONAL, ADJUSTABLE, HYDRAULIC PRESSURE RELIEF VALVE.

#### OPERATIONS

This valve relieves from port 1 to port 2 and port 2 to port 1. This valve provides a fast response, rugged, dirt tolerant operation and has a good pressure vs. flow characteristics.

#### FEATURES AND BENEFITS

Leakproof screw adjustment is standard.  
Adjustment screw can not be backed out of the valve.  
Overset protection – spring can not go solid.  
Hardened precision fitted poppet & cage provides reliable, long life.  
A unibody cage construction provides very low hysteresis, dependable and reliable operation.  
All external carbon steel parts are plated for longer life against the elements.  
Valve is available with screw, tamperproof, capped and handknob adjustments.  
All cartridge valves are 100% functionally tested.  
Industry common cavity.

#### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]  
PROOF PRESSURE: 10,000 PSI [700 Bar]  
FLOW: 40.0 GPM [152 L/M] nominal. See performance chart.  
INTERNAL LEAKAGE: 5 cu.in/min [85 cc/m] @ 85% of crack pressure.  
DEFINITION OF CRACK: evident at 0.06 GPM [0.25 LPM]  
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.  
5000 PSI [350 Bar] = Steel – Unplated.  
OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]  
OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.  
INSTALLATION: No restriction.  
FILTRATION: 25 microns or better.  
SEAL KIT NUMBER: SKN-1222 for buna "N".  
SKV-1222 for viton.  
WEIGHT: 0.68 lb [.34 kg] cartridge only.  
VALVE CAVITY: #C1220, See Page 0-013.0.

info.el@bucherhydraulics.com

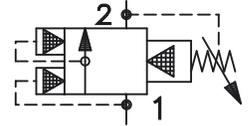
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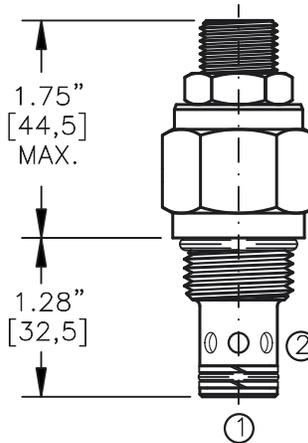
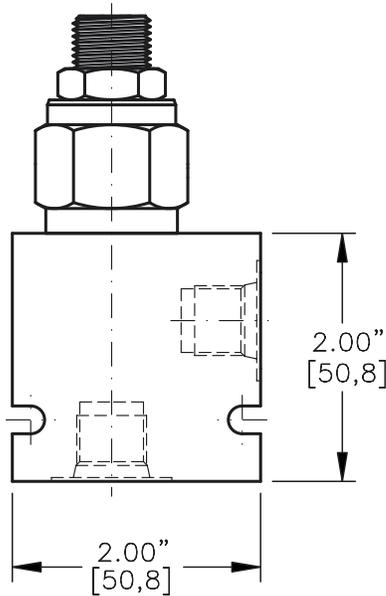
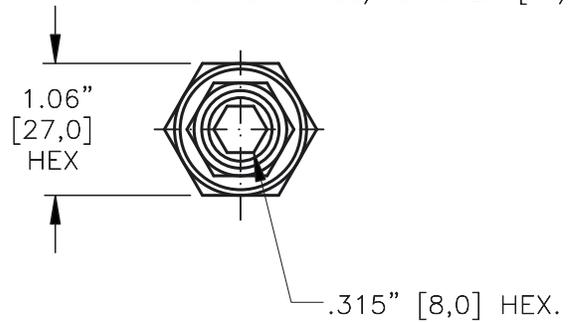
BREAKER RELIEF VALVE PILOT OPERATED,  
SLIDING SPOOL, KICK-DOWN VALVE.



Pat.#5,546,980

TORQUE:

Steel = 55/60 Ft-Lb. [74/81 Nm]  
Aluminum = 35/40 Ft-Lb. [47/54 Nm]

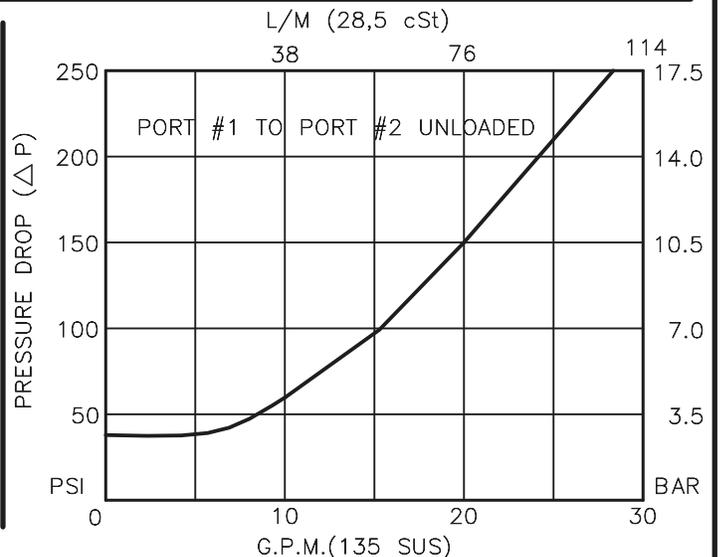


FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-012.1

**RVBS-10-X-X-X-XX**

- BASIC
- SIZE  
10 = 7/8"-14 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- ADJUSTMENT  
S = ADJUSTING SCREW  
C = CAPPED  
T = TAMPERPROOF  
K = HANDKNOB  
M = METAL HANDKNOB
- PRESSURE RANGE  
15 = 50 TO 1500 PSI  
30 = 50 TO 3000 PSI  
50 = 50 TO 5000 PSI
- PORTS  
0 = CARTRIDGE ONLY  
02BX = G 1/4" BSP  
03BX = G 3/8" BSP  
06TX = SAE - #6  
08TX = SAE - #8
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING

FOR ADJUSTMENT CONTROL  
OPTIONS SEE PAGE 0-050.0



## BREAKER RELIEF VALVE

### PILOT OPERATED, SLIDING SPOOL, KICK-DOWN VALVE.

#### DESCRIPTION

This unit is a PILOT OPERATED, SLIDING SPOOL, PRESSURE BREAKER RELIEF VALVE, cartridge style, screw in type valve.

#### OPERATIONS

This valve (RVBS) blocks flow from port #1 to port #2 until sufficient pressure is present at port #1 to force the pilot poppet from its seat thus opening the valve and unloads the system to a low pressure. Acts as a circuit breaker in a hydraulic system.

After the flow and pressure is removed from the valve the valve will re-set itself to the original pressure setting.

#### FEATURES AND BENEFITS

Leakproof screw adjustment.

Pressure in tank port (2) will add to the bias spring setting, and is limited to 2000 PSI.

Adjustment screw can not be backed out of the valve.

Overset protection – pilot spring can not go solid.

Hardened precision fitted spool & cage provides reliable, long life.

A unique self aligning (floating) cage provides very low hysteresis and reliable operation.

All external carbon steel parts are plated for longer life against the elements.

Valve is available with screw, tamperproof, capped and handknob adjustments.

All cartridge valves are 100% functionally tested.

Industry common cavity.

#### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 25.0 GPM [95 L/M] nominal. See performance chart.

INTERNAL LEAKAGE: 5 cu.in/min [85 cc/m] @ 95% of crack pressure.

DEFINITION OF CRACK: evident at 0.06 GPM [0.25 LPM]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.

5000 PSI [350 Bar] = Steel – Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

INSTALLATION: No restriction.

FILTRATION: 25 microns or better.

SEAL KIT NUMBER: SKN-1022 for Buna "N".

SKV-1022 for Viton.

WEIGHT: 0.38 lb [.17 kg] cartridge only.

VALVE CAVITY: #C1020, See Page 0-012.0.

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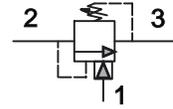
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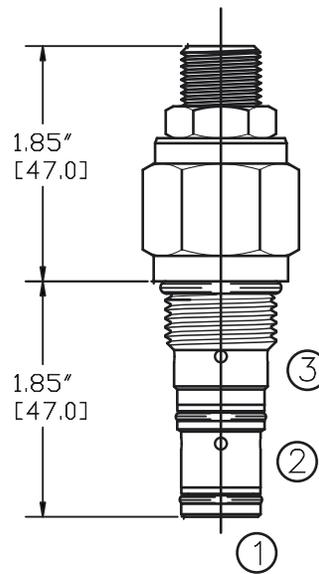
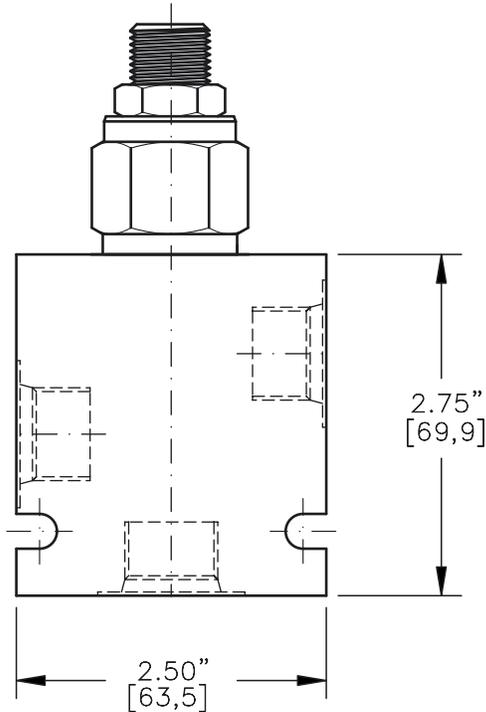
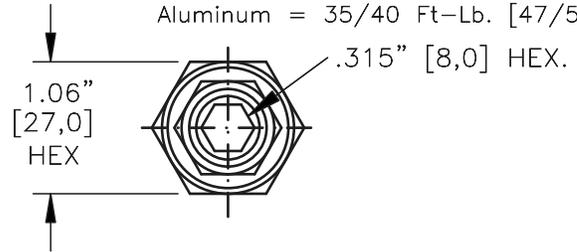
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DIFFERENTIAL AREA  
UNLOADING RELIEF VALVE



TORQUE:

Steel = 55/60 Ft-Lb. [74/81 Nm]  
Aluminum = 35/40 Ft-Lb. [47/54 Nm]

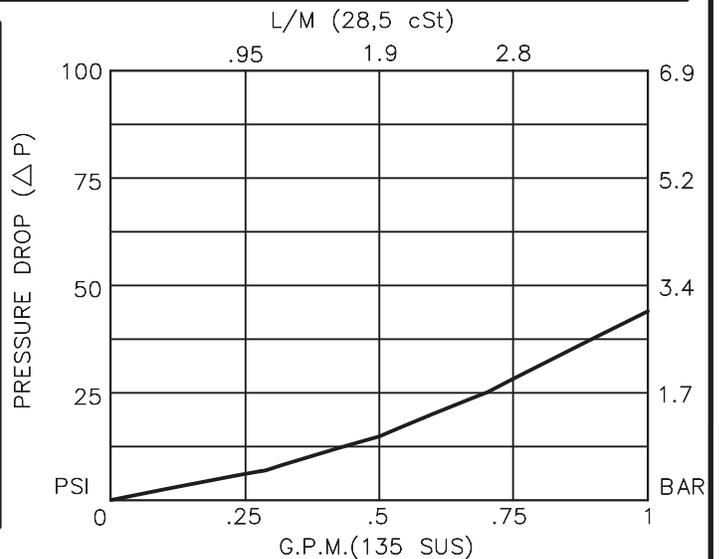


FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-032.1

**PUVA-10-N-X-X-X-XX**

- BASIC
- SIZE  
10 = 7/8"-14 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- ADJUSTMENT  
S = ADJUSTING SCREW  
C = CAPPED  
T = TAMPERPROOF  
K = HANDKNOB  
M = METAL HANDKNOB
- PRESSURE RANGE  
20 = 50 TO 2000 PSI  
40 = 50 TO 4000 PSI
- RATIO  
7 = 70%  
8 = 80%  
9 = 90%
- PORTS  
0 = CARTRIDGE ONLY  
02BX = G 1/4" BSPP  
03BX = G 3/8" BSPP  
06TX = SAE - #6  
08TX = SAE - #8
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING

FOR ADJUSTMENT CONTROL OPTIONS SEE PAGE 0-050.0



## DIFFERENTIAL AREA UNLOADING RELIEF VALVE

### DESCRIPTION

This unit is a DIRECT ACTING, SCREW IN CARTRIDGE STYLE, HYDRAULIC 3-WAY, 2 POS. UNLOADING VALVE, which can be dumped or unloaded via a remote pilot signal. This valve is used as the pilot stage of a two-stage unloading valve.

### OPERATIONS

This valve provides a fixed percentage between load and unload pressures. The fixed differential area is provided by the pilot spool which has a greater area than the pilot seat. When pressure at the pilot port 1 reaches the spring setting, the valve opens and unloads pressure port 2 to tank port 3. The greater area of the spool holds the pilot poppet off its seat until pressure at pilot port 1 drops to the RATIO percentage of the spring setting, at which point the valve closes. This valve to be used as a pilot valve in hydraulic unloading valve applications.

### FEATURES AND BENEFITS

Hardened precision fitted spool and cage provides reliable, long life. A unibody cage construction provides very low hysteresis and reliable operation. All external carbon steel parts are plated for longer life against the elements. All cartridge valves are 100% functionally tested. Industry common cavity.

### SPECIFICATIONS

OPERATING PRESSURE: 5,000 PSI [350 Bar]  
 PROOF PRESSURE: 10,000 PSI [700 Bar]  
 FLOW: 1.0 GPM [3,8 L/M] nominal. See performance chart.  
 INTERNAL LEAKAGE: 5 drops/min [.25 cc/m] @ PORT1.  
 DEFINITION OF CRACK: evident at 0.06 GPM [0.25 LPM]  
 VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.  
                           5000 PSI [350 Bar] = Steel – Unplated.  
 OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]  
 OPERATING MEDIA: All general purpose hydraulic fluids such as  
                           MIL-H-5606, SAE-#10, SAE-#20, etc.  
 INSTALLATION: No restriction.  
 FILTRATION: 25 microns or better.  
 SEAL KIT NUMBER: SKN-1022 for Buna "N".  
                           SKV-1022 for Viton.  
 WEIGHT: 0.42 lbs [0,19 kg] cartridge only.  
 VALVE CAVITY: #C1030, See Page 0-032.1.

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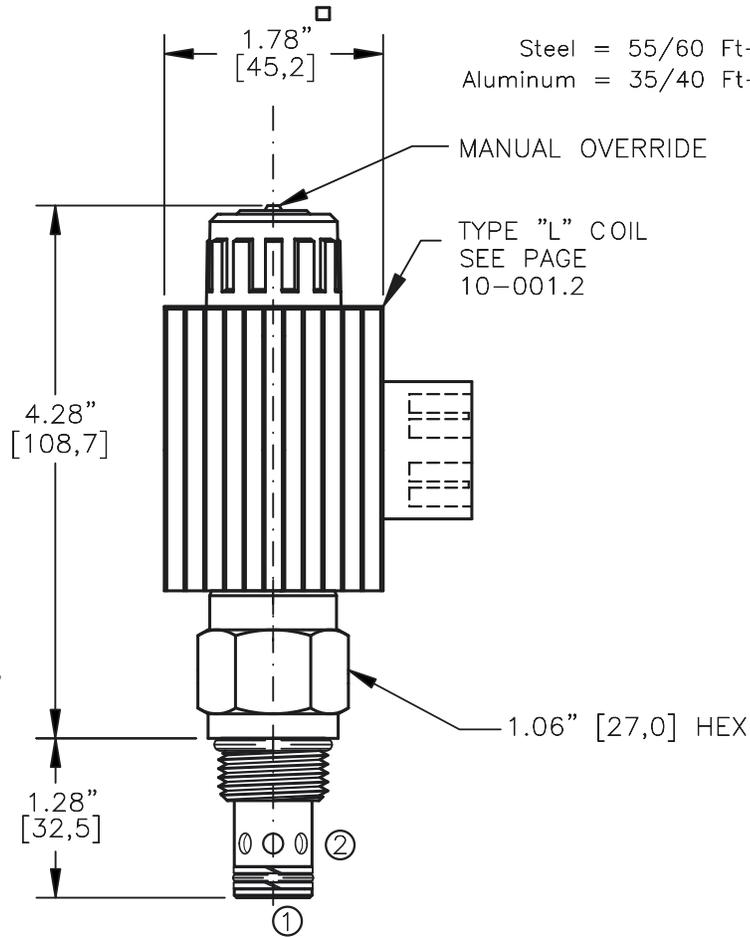
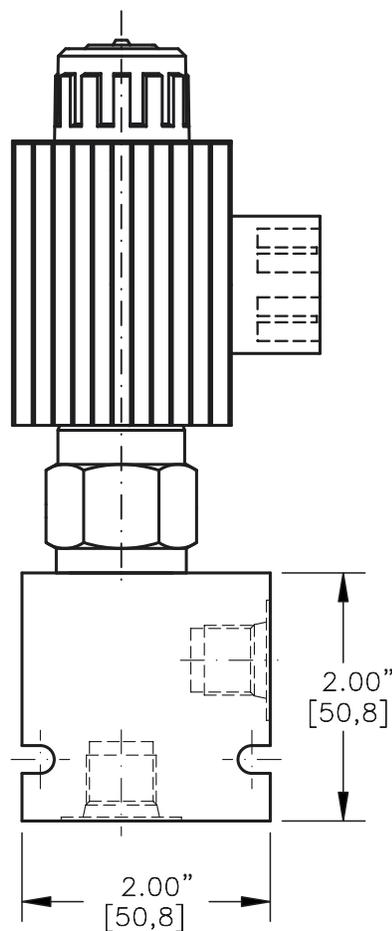
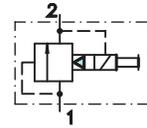
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NORMALLY OPEN SOLENOID VENTED RELIEF VALVE, PILOT OPERATED, SPOOL TYPE (2/2)



TORQUE:  
Steel = 55/60 Ft-Lb. [74/81 Nm]  
Aluminum = 35/40 Ft-Lb. [47/54 Nm]

MANUAL OVERRIDE

TYPE "L" COIL  
SEE PAGE  
10-001.2

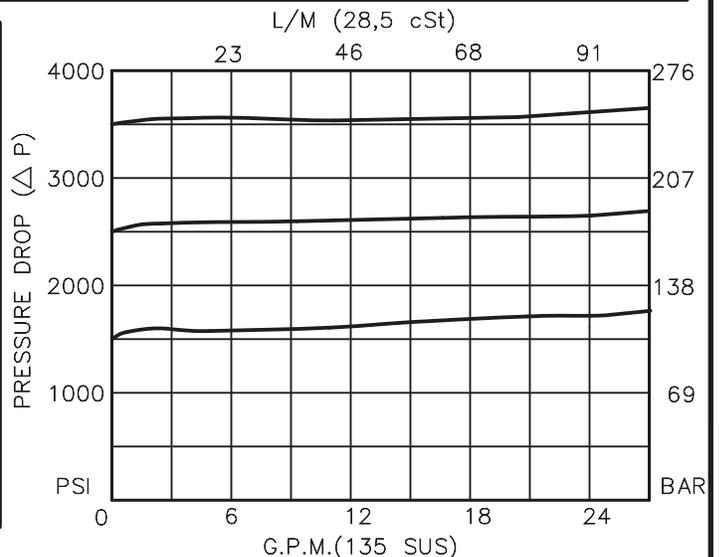
1.06" [27,0] HEX

NOTES:

1. FOR ALUMINUM OR STEEL VALVE HOUSING CONFIGURATIONS SEE PAGE 0-012.1
2. SOLENOIDS AVAILABLE WITH DIODES - CONSULT FACTORY.
3. ALL A.C. COILS ARE INTERNALLY A.C. TO D.C. RECTIFIED...
4. FOR CONTINUOUS ENERGIZED OR HIGH AMBIENT TEMPERATURE (>120°F) APPLICATION CONSULT FACTORY FOR FURTHER DETAILS

ESRV-10-X-XX-X-XXX X

BASIC	TERMINALS
SIZE	L = 18GA. 24" LEADS
10 = 7/8"-14UNF	T = SPADE TERM.
SEALS	B = BOLT TERM.
N = BUNA "N"	G = DIN43650
V = VITON	W = WEATHER-PACK
REGULATED PRESSURE	D = DEUTSCH-DT04-2P
10 = 1000 PSI	M = METRI-PACK CONN.
15 = 1500 PSI	
20 = 2000 PSI	VOLTAGE AMPS
25 = 2500 PSI	12D = 12 VDC 3.00
30 = 3000 PSI	24D = 24 VDC 1.50
35 = 3500 PSI	36D = 36 VDC 1.00
* FOR CUSTOM	48D = 48 VDC 0.75
SETTINGS	110D = 110 VDC 0.33
CONSULT	115A = 115 VAC 0.32
FACTORY	230A = 230 VAC 0.16
PORTS	
0 = CARTRIDGE ONLY	
02BX = G 1/4" BSPP	
03BX = G 3/8" BSPP	
06TX = SAE - #6	
08TX = SAE - #8	
"A" = ALUM. HOUSING	
"S" = STEEL HOUSING	



## NORMALLY OPEN SOLENOID VENTED RELIEF VALVE, PILOT OPERATED, SPOOL TYPE (2/2)

### DESCRIPTION

This unit is a NORMALLY OPEN, TWO POSITION, cartridge type, spool type, pilot operated, screw in type, solenoid operated, hydraulic relief valve.

### OPERATIONS

When the solenoid coil is de-energized, this valve allows flow from port 1 to port 2 (tank). When the solenoid coil is energized this valve blocks flow from port 1 to port 2. When the solenoid coil is energized and the pressure at port 1 exceeds the relief pressure setting, this valve will open and allow flow from port 1 to port 2.

Manual Operator Standard: Push in and hold a small plunger on top of the valve with a screw driver or a similar plunger smaller than .188" dia.

### FEATURES AND BENEFITS

Continuous-duty, very low heat rise & waterproof solenoid coil.

Interchangeable solenoid coils & terminations options available.

Pressure in tank port (2) will add to the bias spring setting, and is limited to 2000 PSI.

Hardened precision fitted spool & sleeve provides reliable, long life.

A unique self aligning (floating) cage provides very low hysteresis and reliable operation.

Very efficient, wet-armature solenoid core tube construction.

All external carbon steel parts are plated for longer life against the elements.

All cartridge valves are 100% functionally tested.

Industry common cavity.

### SPECIFICATIONS

OPERATING PRESSURE: 5000 PSI [350 Bar]

PROOF PRESSURE: 10,000 PSI [700 Bar]

FLOW: 26.0 GPM [100 L/M] nominal. See performance chart.

INTERNAL LEAKAGE: 5 cu.in/min [85 cc/m] @ 95% of crack pressure.

INTERNAL PILOT FLOW: 60 cu.in/min [1,0 l/m] @ 3000 PSI [210 Bar]

VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum - Anodized.

5000 PSI [350 Bar] = Steel - Unplated.

OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]

OPERATING MEDIA: All general purpose hydraulic fluids such as MIL-H-5606, SAE-#10, SAE-#20, etc.

SEAL KIT: SKN-1022 Buna "N"

SKV-1022 Viton

INSTALLATION: No restrictions.

WEIGHT: 1.90 lb [0,86 kg] cartridge with coil only.

VALVE CAVITY: #C1020, See Page 0-012.0.

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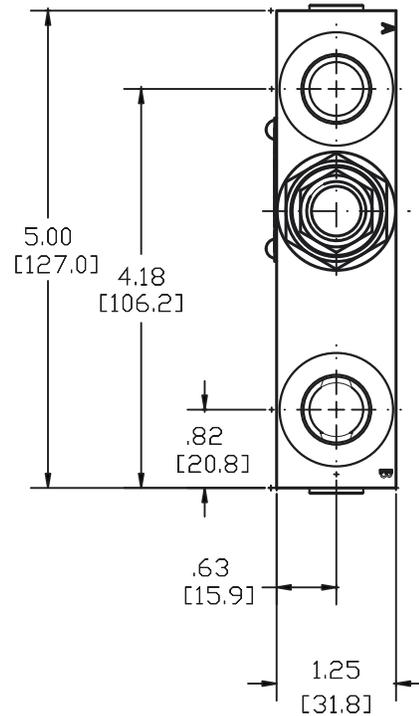
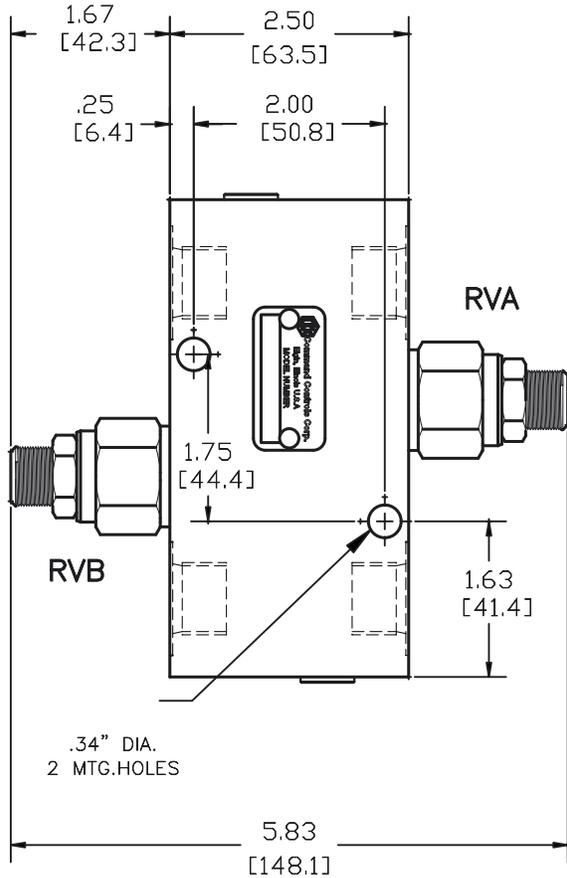
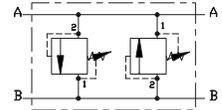
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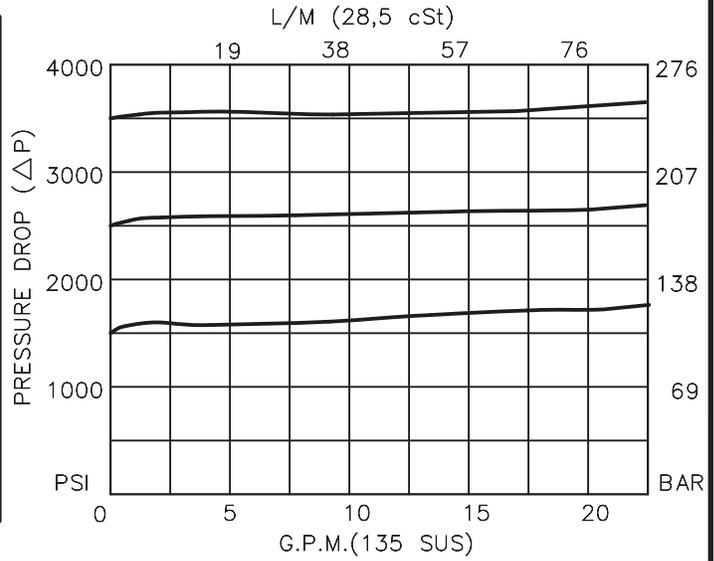
CROSS PORT RELIEF VALVE, DIRECT ACTING  
DIFFERENTIAL AREA, POPPET TYPE



CPRV-10-X-X-0-RVA-RVB-RVA-RVB

- BASIC
- SIZE  
10 = 7/8"-14 UNF
- SEALS  
N = BUNA "N"  
V = VITON
- ADJUSTMENT  
S = ADJUSTING SCREW  
C = CAPPED  
T = TAMPERPROOF  
K = HANDKNOB  
M = METAL HANDKNOB
- FOR ADJUSTMENT CONTROL  
OPTIONS SEE PAGE 0-050.0

- OPTIONAL PRESSURE SETTING  
(PRESSURE/100)  
Ex.: 42.5 = 4250 PSI
- PRESSURE RANGE  
15 = 100 TO 1500 PSI  
30 = 300 TO 3000 PSI  
50 = 500 TO 5000 PSI
- PORTS  
08TX = SAE - #8
- "A" - ALUM. HOUSING  
"S" - STEEL HOUSING



**CROSS PORT RELIEF VALVE, DIRECT ACTING, POPPET TYPE****DESCRIPTION**

This unit consists of two RVDA cartridges in an inline housing. The cartridges are differential area, poppet type, bi-directional, adjustable, hydraulic pressure relief valves.

**OPERATIONS**

This manifold (CPRV) allows flow with minimal pressure drop through normally separated A and B thru ports. If pressure in either port exceeds its valve setting, flow will cross over to the other port.

**FEATURES AND BENEFITS**

Leakproof screw adjustment.  
Adjustment screw can not be backed out of valve.  
Overset protection – spring can not go solid.  
Hardened precision fitted poppet & cage provides reliable, long life.  
All external carbon steel parts are plated for longer life against the elements.  
Valve is available with screw, tamperproof, capped and handknob adjustments.  
All cartridge valves are 100% functionally tested.  
Industry common cavity.

**SPECIFICATIONS**

OPERATING PRESSURE: 5,000 PSI [350 Bar]  
PROOF PRESSURE: 10,000 PSI [700 Bar]  
FLOW: 20.0 GPM [76 L/M] nominal. See performance chart.  
INTERNAL LEAKAGE: 5 drops/min [.25 cc/m] @ 85% of crack pressure.  
DEFINITION OF CRACK: evident at 0.06 GPM [0.25 LPM]  
VALVE HOUSINGS: 2500 PSI [175 Bar] = Aluminum – Anodized.  
5000 PSI [350 Bar] = Steel – Unplated.  
OPERATING TEMPERATURE: -40° to +250° F. [-40° to +120° C.]  
OPERATING MEDIA: All general purpose hydraulic fluids such as  
MIL-H-5606, SAE-#10, SAE-#20, etc.  
INSTALLATION: No restriction.  
FILTRATION: 25 microns or better.  
SEAL KIT NUMBER: SKN-1021 for Buna "N".  
SKV-1021 for Viton.  
WEIGHT: 2.65 lbs [1,21 kg] Aluminum. 5.25 lbs [2,38 kg] Steel.  
VALVE CAVITY: #C1020, See Page 0-012.0.

NOTE: A 100 PSI pressure differential must be present between the two relief valve settings. If same setting is needed, use RVBD-10 cartridge.

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