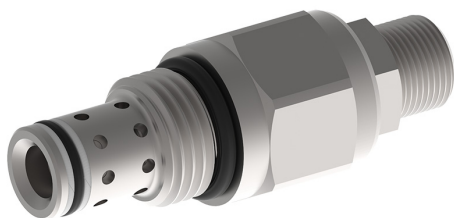


## Pressure-Relief Cartridge Valve, Size SAE 10 / NG 8

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

bi-directional, poppet type, adjustable

Series RVBD-10...



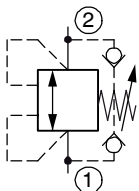
- Screw-in valve acc. to ISO 17209 – Common Cavity
- Compact construction
- For common cavities: C1020, AX/C1020 – 7/8-14 UNF
- 3 pressure ranges available
- Adjustment screw can not be backed out of valve
- A unibody cage construction provides very low hysteresis, dependable and reliable operation
- 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]

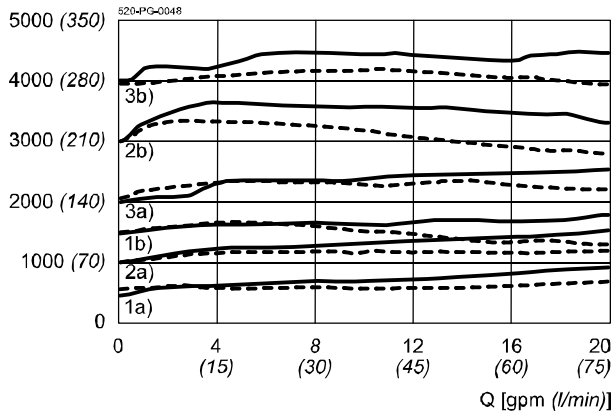
Hydraulic characteristics	Description, value, unit
Maximum operating pressure - ports 1, 2	5000 psi [350 bar]
Maximum flow rate	20 gpm [75 l/min]
Nominal pressure ranges	1500, 3000, 5000 psi [105, 210, 350 bar] For further pressure ranges, please contact BUCHER
Flow direction	1 → 2 pressure relieving 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)

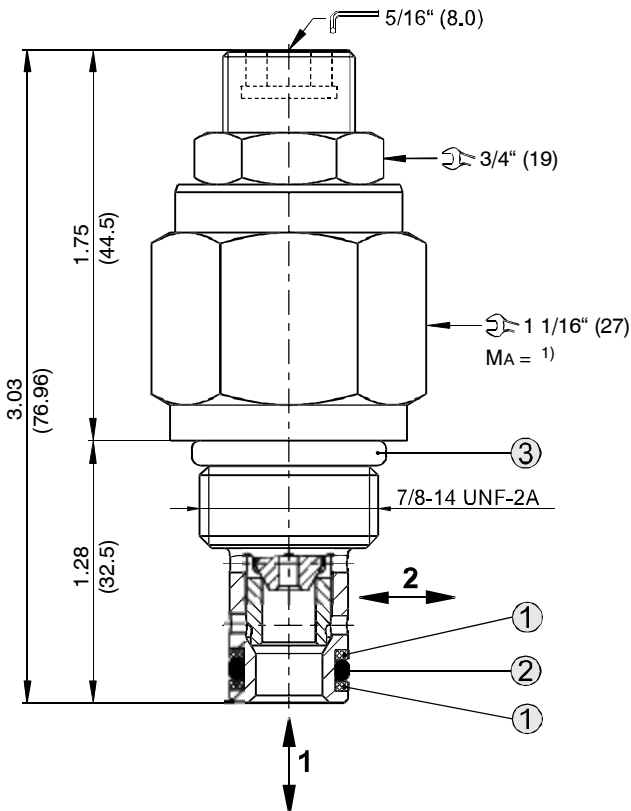
$p = f(Q)$  Pressure - Flow Rate / Druck-Volumenstrom

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