

# **Comatrol**

**RESPONSIVENESS IN MOTION**

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## **Relief Valves**

**[www.comatrol.com](http://www.comatrol.com)**

Thermal Relief	Model No.	Cavity	Description	Flow	Pressure	Page
	CP208-4	SDC08-2	Relief Valve, Thermal Relief, Poppet Type	1.1 l/min [0.3 US gal/min]	415 bar [6000 psi]	RV - 7

Direct Acting	Model No.	Cavity	Description	Flow	Pressure	Page
	CP208-3	SDC08-2	Relief Valve, Direct Acting, Poppet Type	30 l/min [8 US gal/min]	250 bar [3600 psi]	RV - 8
	CP200-3	SDC10-2		40 l/min [11 US gal/min]	250 bar [3600 psi]	RV - 9

Direct Acting	Model No.	Cavity	Description	Flow	Pressure	Page
	RV08-DR	SDC08-2	Relief Valve, Direct Acting,	30 l/min [8 US gal/min]	250 bar [3600 psi]	RV - 10
	VEN 06	NCS06/2	Dampening, Poppet Type	40 l/min [11 US gal/min]	250 bar [3600 psi]	RV - 11
	VME 06	VME06		40 l/min [11 US gal/min]	315 bar [4500 psi]	RV - 12
	VME 07	VME07		50 l/min [13 US gal/min]	315 bar [4500 psi]	RV - 13
	VME 08	VME08		80 l/min [21 US gal/min]	315 bar [4500 psi]	RV - 14

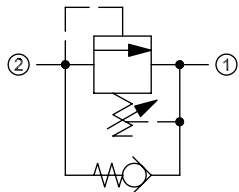
Differential Area	Model No.	Cavity	Description	Flow	Pressure	Page
	CP200-2	SDC10-2	Relief Valve, Differential Area, Poppet Type,	40 l/min [11 US gal/min]	350 bar [5075 psi]	RV - 15
	CP208-1	SDC08-2		40 l/min [11 US gal/min]	250 bar [3600 psi]	RV - 16
	CP200-1	SDC10-2		75 l/min [20 US gal/min]	250 bar [3600 psi]	RV - 17
	CP201-1	CP12-2		150 l/min [40 US gal/min]	250 bar [3600 psi]	RV - 18

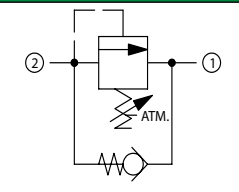
Direct Acting	Model No.	Cavity	Description	Flow	Pressure	Page
	CP210-1	SDC10-2	Relief Valve, Direct Acting,	45 l/min [12 US gal/min]	210 bar [3000 psi]	RV - 19
	CP211-1	CP12-2	Spool Type,	75 l/min [20 US gal/min]	40 bar [600 psi]	RV - 20

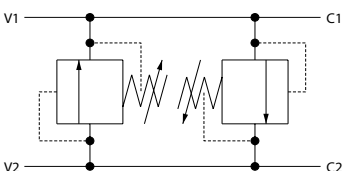
Pilot Operated	Model No.	Cavity	Description	Flow	Pressure	Page
	CP210-2	SDC10-2	Relief Valve, Pilot Operated,	115 l/min [30 US gal/min]	350 bar [5075 psi]	RV - 21
	CP211-2	CP12-2	Spool Type	190 l/min [50 US gal/min]	350 bar [5075 psi]	RV - 22

Pilot Operated	Model No.	Cavity	Description	Flow	Pressure	Page
	RV10-POP	SDC10-2	Relief Valve, Pilot Operated, Poppet Type, with Free Reverse Flow	120 l/min [32 US gal/min]	250 bar [3625 psi]	RV - 23

Bi-Directional	Model No.	Cavity	Description	Flow	Pressure	Page
	CP200-7	SDC10-2	Relief Valve, Bi-directional	40 l/min [11 US gal/min]	250 bar [3600 psi]	RV - 24

Differential Area	Model No.	Cavity	Description	Flow	Pressure	Page
	VSB 06-EN	NCS06/2	Relief Valve, Differential Area,	80 l/min [21 US gal/min]	350 bar [5075 psi]	RV - 25
	VSB 12-EN	NCS12/2	Poppet Type with Reverse Free Flow Check	140 l/min [37 US gal/min]	350 bar [5075 psi]	RV - 26

Differential Area	Model No.	Cavity	Description	Flow	Pressure	Page
	VSB 06-CN	NCS06/2	Relief Valve, Differential Area,	80 l/min [21 US gal/min]	350 bar [5075 psi]	RV - 27
	VSB 12-CN	NCS12/2	Poppet Type with Reverse Free Flow Check, Atmospheric Venting	140 l/min [37 US gal/min]	350 bar [5075 psi]	RV - 28

Cross-Over	Model No.	Cavity	Description	Flow	Pressure	Page
	VA-E 06	none	Relief Valve, Cross-Over, Catalog HIC	40 l/min [11 US gal/min]	210 bar [3045 psi]	RV - 29
	CP220-1	none		75 l/min [20 US gal/min]	250 bar [3600 psi]	RV - 30
	CP221-1	none		190 l/min [50 US gal/min]	250 bar [3600 psi]	RV - 31

**APPLICATIONS**

Relief valves are used as pressure limiting devices to protect hydraulic systems and components. They are available in direct-acting poppet, differential area poppet, bi-directional poppet, and pilot-operated spool types.

Relief valves

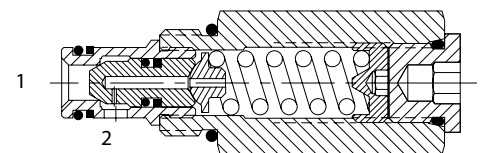


**OPERATION**

**Direct-acting poppet**

The direct-acting poppet blocks flow from 1 to 2 until sufficient pressure is present at 1 to force the spring-opposed poppet from its seat. This pressure is commonly known as the crack pressure. The valve will remain open until the pressure drops to a level allowing the spring to close the valve. This pressure is known as the re-seat pressure and is typically 70-80% of the crack pressure. The difference between crack and re-seat pressure is commonly referred to as hysteresis.

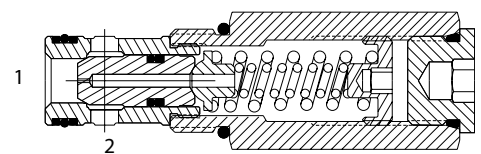
Direct acting poppet relief valve



**Differential-area poppet**

The differential area poppet operates in the same manner except flow is blocked from 2 to 1 until sufficient pressure is present at 2 to force the spring-opposed poppet from its seat.

Differential area poppet relief valve



Advantages of direct-acting poppet and differential area poppet relief valves are:

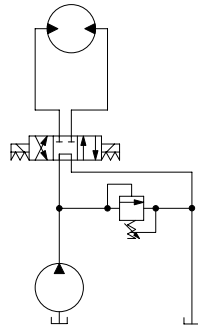
- Fast response
- Contamination tolerant
- Low leakage
- Low cost

**OPERATION**  
 (continued)

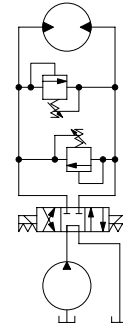
Because of these features some common applications for direct-acting and differential area poppet relief valves are:

- Main system relief valve if flow is relatively constant, or as a safety relief valve for “spike clipping” to protect components from overpressure
- Work port cross-over relief to protect a cylinder or motor from overpressure

System Relief Valve



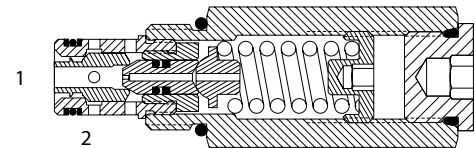
Work Port Cross-Relief Valves



**Bi-directional poppet**

The bi-directional poppet is a dual cross-over relief in a single cartridge. When pressure at 1 exceeds the nominal setting, the lower poppet acts as a direct-acting relief valve and opens flow from 1 to 2. When pressure at 2 exceeds the nominal setting, the upper poppet acts as a differential area relief valve and opens flow from 2 to 1. Note that the valve is designed so that the crack pressure is the same in either direction

Bi-directional poppet relief valve

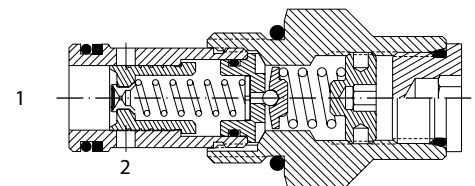


A common application for a bi-directional relief valve is as a work port cross-over relief where one bi-directional valve can replace two direct-acting valves.

**Pilot operated spool**

The pilot operated spool blocks flow from 1 to 2 until sufficient pressure is present at 1 to force the pilot poppet off its seat. This creates a pressure differential across the spool that causes the spool to shift and open flow from 1 to 2.

Pilot operated spool relief valve



Advantages of pilot-operated relief valves are:

- Smooth, stable response
- High flow and high pressure capability
- Precise pressure control with varying flow rates. Low pressure rise
- Low hysteresis

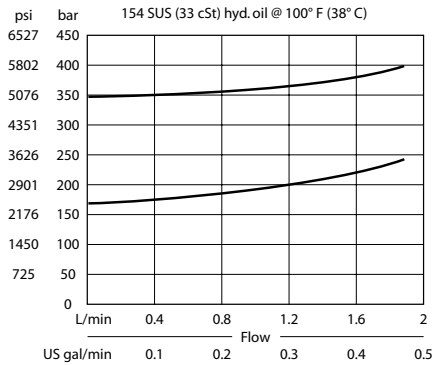
A common application for pilot-operated relief valves is as a main system relief where high pressure or flow capability and/or extremely precise pressure control is required.

**OPERATION**

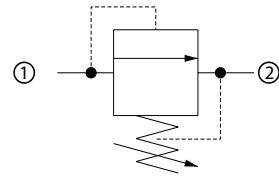
This is a direct-acting poppet type thermal relief valve that relieves from 1 to 2.

**SPECIFICATIONS**

Theoretical performance



Schematic



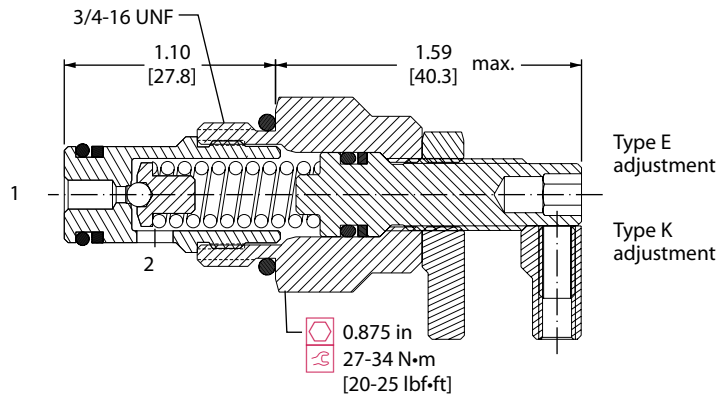
Specifications

<b>Rated pressure</b>	415 bar [6000 psi]
<b>Rated flow</b>	1.1 l/min [0.3 US gal/min]
<b>Leakage</b>	10 drops/min @ 80% of pressure setting
<b>Weight</b>	0.23 kg [0.50 lb]
<b>Cavity</b>	SDC08-2

**DIMENSIONS**

mm [in]

Cross-sectional view



**ORDERING INFORMATION**

**CP208-4-B-4S-E-C-300**

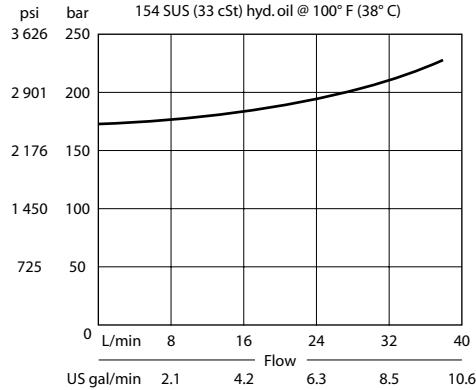
<b>Seals</b>	Seal kits	<b>Crack pressure</b>
B = Buna-N	120221	Code x 10 = psi
V = Viton	120222	Example: 300 = 3000 psi
<b>Housing and ports</b>	<b>Housing P/N</b>	<b>Adjustment ranges</b>
0 = No Housing	No Housing	
DG2B = Al, 1/4 BSP	SDC08-2-DG-2B	A = 2-103 bar [30-1500] psi
DG3B = Al, 3/8 BSP	SDC08-2-DG-3B	Standard 207 [1000]
4S = Al, #4 SAE	CP08-2-4S	B = 7-207 bar [100-3000] psi
6S = Al, #6 SAE	CP08-2-6S	Standard 103 [1500]
Other housings available		C = 69-414 bar [1000-6000] psi
		Standard 207 [3000]
		<b>Adjustment options</b>
		E = External
		K = Knob

**OPERATION**

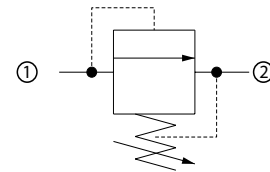
This is a direct-acting poppet type relief valve that relieves from 1 to 2.

**SPECIFICATIONS**

**Theoretical performance**



**Schematic**



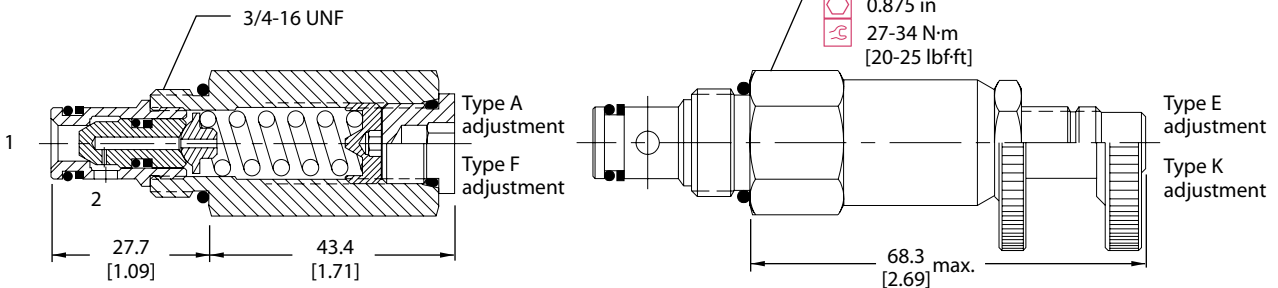
**Specifications**

<b>Rated pressure</b>	250 bar [3600 psi]
<b>Rated flow</b>	30 l/min [8 US gal/min]
<b>Leakage</b>	10 drops/min @ 80% of pressure setting
<b>Weight</b>	0.15 kg [0.32 lb]
<b>Cavity</b>	SDC08-2

**DIMENSIONS**

mm [in]

**Cross-sectional view**



**ORDERING INFORMATION**

**CP208 - 3 - B - 6S - A - C - 150**

- Seals**
  - B = Buna-N
  - V = Viton
- Housing and ports**
  - 0 = No Housing
  - DG2B = Al, 1/4 BSP
  - DG3B = Al, 3/8 BSP
  - 4S = Al, #4 SAE
  - 6S = Al, #6 SAE
- Other housings available**
- Adjustment option**
  - A = Internal
  - E = External
  - F = Tamper resistant
  - K = Knob
- Seal Kit**
  - 120221
  - 120222
- Housing P/N**
  - No Housing
  - SDC08-2-DG-2B
  - SDC08-2-DG-3B
  - CP08-2-4S
  - CP08-2-6S
- Crack pressure**
  - Code x 10 = psi
  - Example: 150 = 1500 psi
- Pressure range**

	bar	[psi]
A = Standard	7-69	[100-1000]
B = Standard	28	[400]
B = Standard	14-138	[200-2000]
C = Standard	69	[1000]
C = Standard	35-248	[500-3600]
C = Standard	103	[1500]

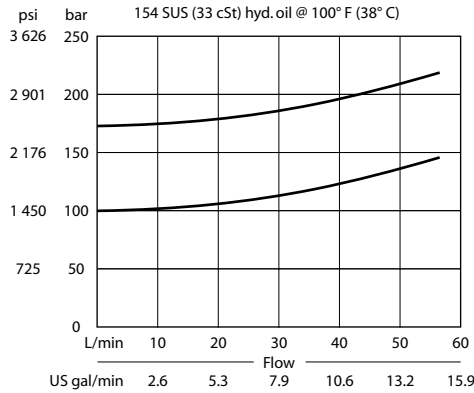


**OPERATION**

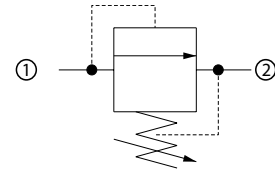
This is a direct-acting poppet type relief valve that relieves from 1 to 2.

**SPECIFICATIONS**

Theoretical performance



Schematic



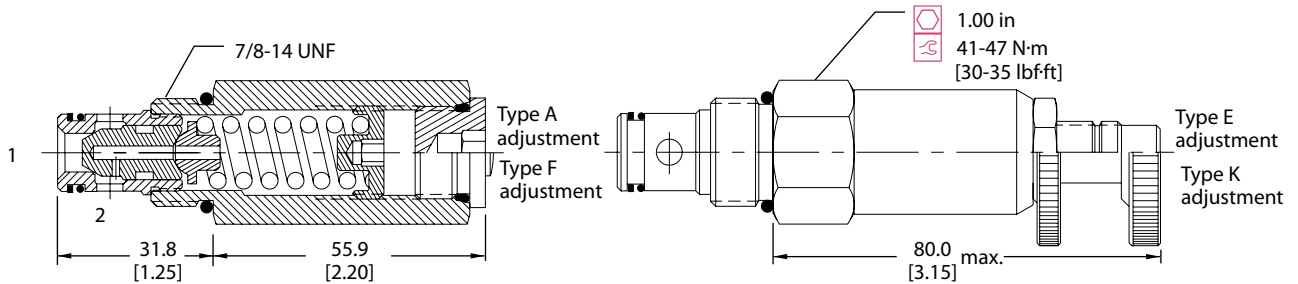
Specifications

<b>Rated pressure</b>	250 bar [3600 psi]
<b>Rated flow</b>	40 l/min [11 US gal/min]
<b>Leakage</b>	10 drops/min @ 80% of pressure setting
<b>Weight</b>	0.21 kg [0.47 lb]
<b>Cavity</b>	SDC10-2

**DIMENSIONS**

mm [in]

Cross-sectional view



**ORDERING INFORMATION**

**CP200 - 3 - B - 6S - A - C - 150**

**Seals**  
 B = Buna-N  
 V = Viton

**Housing and ports**  
 0 = No Housing  
 DG3B = Al, 3/8 BSP  
 DG4B = Al, 1/2 BSP  
 6S = Al, #6 SAE  
 8S = Al, #8 SAE  
 Other housings available

**Adjustment option**  
 A = Internal  
 E = External  
 F = Tamper resistant  
 K = Knob

**Seal kit**  
 120015  
 120016

**Housing P/N**  
 No Housing  
 SDC10-2-DG-3B  
 SDC10-2-DG-4B  
 CP10-2-6S  
 CP10-2-8S

**Crack pressure**  
 Code x 10 = psi  
 Example: 150 = 1500 psi

**Pressure range**

Code	bar	[psi]
A	7-69	[100-1000]
Standard	28	[400]
B	17-172	[250-2500]
Standard	69	[1000]
C	41-248	[600-3600]
Standard	103	[1500]

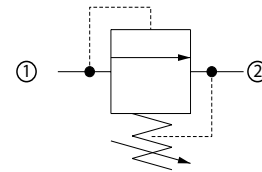
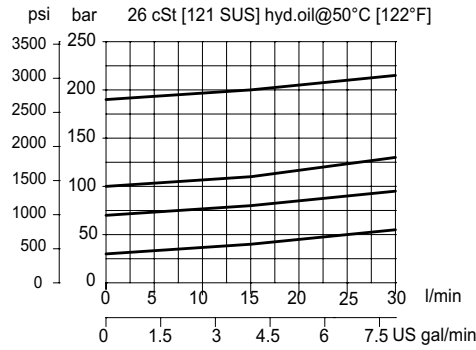
**OPERATION**

This is a direct-acting, poppet-type relief valve that relieves from 1 to 2. It features a highly damped poppet for smooth and stable response.

**SPECIFICATIONS**

Theoretical performance

Schematic



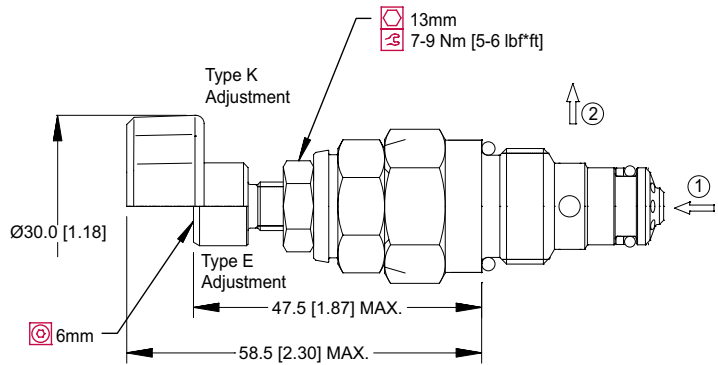
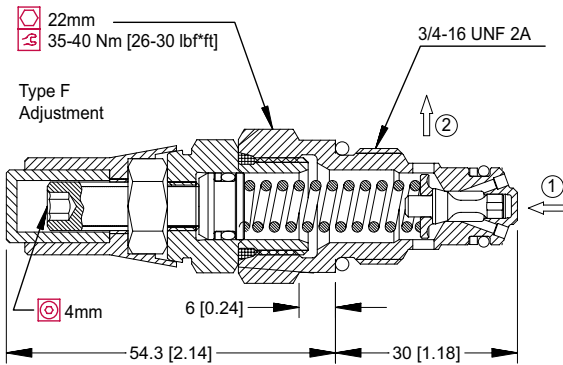
**Specifications**

<b>Rated pressure</b>	250 bar [3600 psi]
<b>Rated flow</b>	30 l/min [8 US gal/min]
<b>Leakage</b>	10 drops/min @ 80% of pressure setting
<b>Weight</b>	0.10 kg [0.22 lb]
<b>Cavity</b>	SDC08-2

**DIMENSIONS**

mm [in]

Cross-sectional view



**ORDERING INFORMATION**

**RV08-DR-1-E-XXX-B-4S**

<b>Pressure range</b>	<b>Housing and ports</b>	<b>Housing P/N</b>
1 = 20-80 Bar [290-1150 psi]	00 = No Housing	No Housing
2 = 35-160 Bar [500-2300 psi]	DG2B = Al, 1/4 BSP	SDC08-2-DG-2B
3 = 60-250 Bar [870-3600 psi]	DG3B = Al, 3/8 BSP	SDC08-2-DG-3B
	4S = Al, #4 SAE	CP08-2-4S
	6S = Al, #6 SAE	CP08-2-6S
	Other housings available	
<b>Adjustment option</b>	<b>Seals</b>	<b>Seal Kit</b>
E = External	B = Buna-N	354000119
F = Tamper resistant	V = Viton	354000219
K = Knob		
<b>Crack pressure</b>		
Code = Setting in Bar		
XXX = No specific setting		

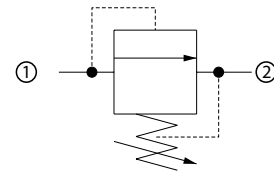
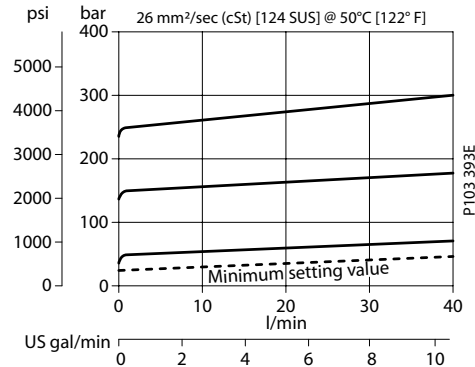
**OPERATION**

This is a direct-acting, poppet-type relief valve that relieves from 1 to 2. It features a highly damped poppet for smooth and stable response.

**SPECIFICATIONS**

Theoretical performance

Schematic

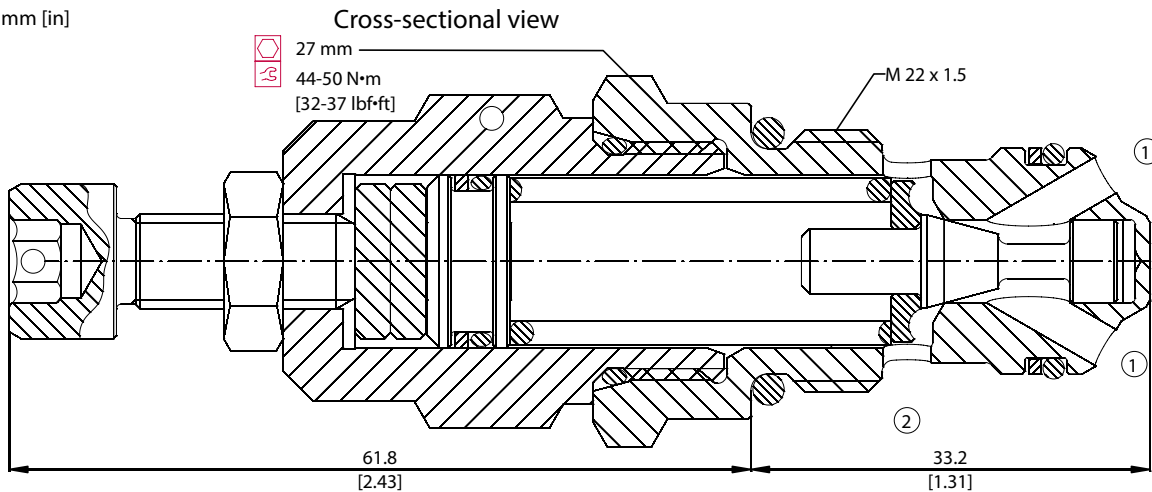


**Specifications**

<b>Rated pressure</b>	315 bar [4500 psi]
<b>Rated flow</b>	40 l/min [11 US gal/min]
<b>Weight</b>	0.20 kg [0.44 lb]
<b>Cavity</b>	NCS06/2

**DIMENSIONS**

mm [in]



**ORDERING INFORMATION**

VEN 06 - M - 1 - DG3/8 - V - XXX

**Type of adjustment**

EN = External screw  
 M = Handwheel

**Setting range**

1 = 20 - 80 bar [290 - 1160 psi]  
 2 = 35 - 160 bar [508 - 2321 psi]  
 3 = 70 - 315 bar [1015 - 4569 psi]

**Seals**

V = Viton seals 230000380  
 Omit = Buna-N 230000060

**Housing and ports**

0 = No Housing  
 DG3/8 = AL, 3/8 BSP  
 DG1/2 = AL, 1/2 BSP  
 DG6S = AL, #6 SAE  
 DG8S = AL, #8 SAE  
 Other housings available

**Housing P/N**

No Housing  
 NCS06/2-DG-3/8  
 NCS06/2-DG-1/2  
 NCS06/2-DG-6S  
 NCS06/2-DG-8S

To order this valve with a specific factory setting, contact your Comatrol representative

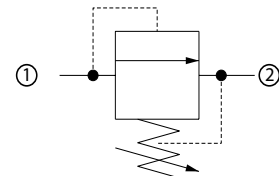
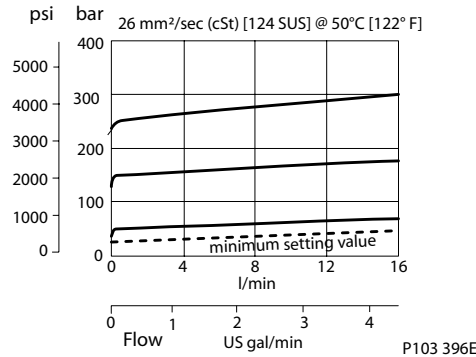
**OPERATION**

This is a direct-acting, poppet-type relief valve that relieves from 1 to 2. It features a highly damped poppet for smooth and stable response.

**SPECIFICATIONS**

Theoretical performance

Schematic



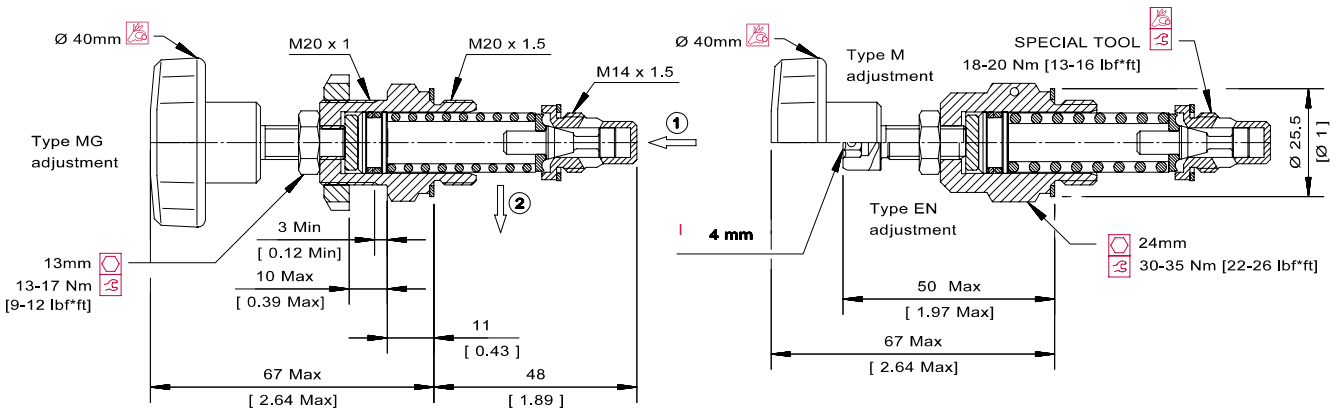
**Specifications**

<b>Rated pressure</b>	315 bar [4500 psi]
<b>Rated flow</b>	40 l/min [11 US gal/min]
<b>Weight</b>	0.13 kg [0.29 lb]
<b>Cavity</b>	VME06

**DIMENSIONS**

mm [in]

Cross-sectional view



**ORDERING INFORMATION**

VME 06 - EN - 2 - DG3/8 - V - XXX

**Adjustment**

EN = External screw  
M = Handwheel  
MG = Handwheel (panel mounted)

**Setting range**

1 = 25 - 70 bar [363-1015 psi]  
2 = 35 - 170 bar [508-2466 psi]  
3 = 70 - 315 bar [1015-4569 psi]

**Housing and ports**

00 = No Housing  
DG3/8 = AI, 3/8 BSP  
DG6S = AI, #6 SAE  
Other housings available

**Seals**

V = Viton seals  
Omit = Buna-N

**Housing P/N**

No Housing  
VME06-DG-3/8  
VME06-DG-6S

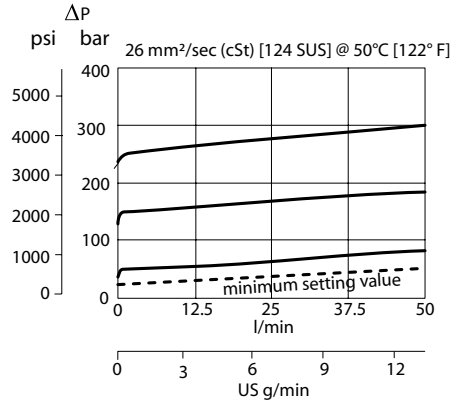
To order this valve with a specific factory setting, contact your Comatrol representative

**OPERATION**

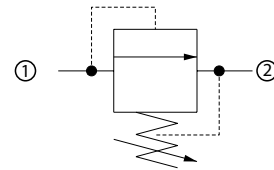
This is a direct-acting, poppet-type relief valve that relieves from 1 to 2. It features a highly damped poppet for smooth and stable response.

**SPECIFICATIONS**

Theoretical performance



Schematic



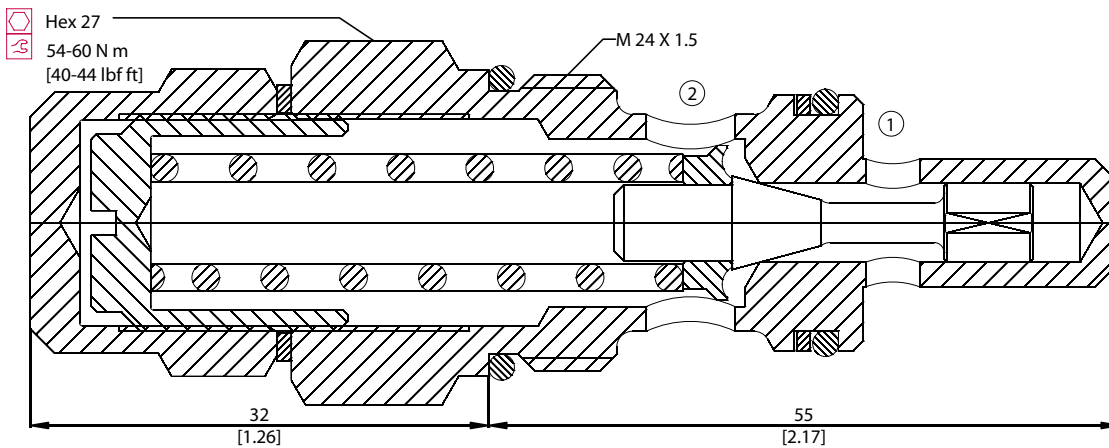
Specifications

<b>Rated pressure</b>	315 bar [4500 psi]
<b>Rated flow</b>	50 l/min [13 US gal/min]
<b>Weight</b>	0.20 kg [0.44 lb]
<b>Cavity</b>	VME07

**DIMENSIONS**

mm [in]

Cross-sectional view



**ORDERING INFORMATION**

VME 07 - E - 2 - DG1/2 - V - XXX

**Adjustment**

E = Internal screw  
 M = Handwheel

**Setting range**

1 = 25 - 80 bar [363-1160 psi]  
 2 = 35 - 180 bar [508-2611 psi]  
 3 = 70 - 315 bar [1015-4569 psi]

**Seals**

V = Viton  
 Omit = Buna-N

Seal kit  
 Consult factory  
 Consult factory

**Housing and ports**

00 = No Housing  
 DG1/2 = Al, 1/2 BSP  
 DG8S = Al, #8 SAE  
 Other housings available

**Housing P/N**

No Housing  
 VME07-DG-1/2  
 VME07-DG-8S

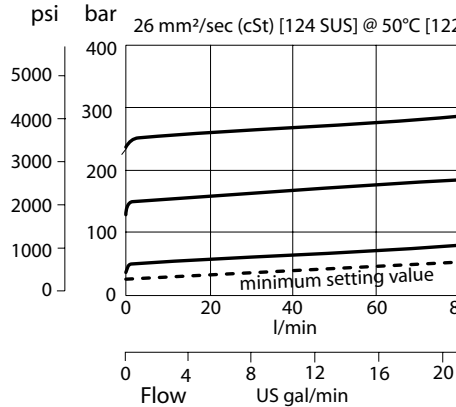
To order this valve with a specific factory setting, contact your Comatrol representative.

**OPERATION**

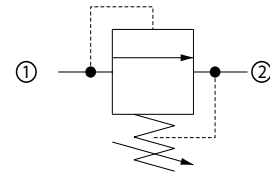
This is a direct-acting, poppet-type relief valve that relieves from 1 to 2. It features a highly damped poppet for smooth and stable response.

**SPECIFICATIONS**

Theoretical performance



Schematic



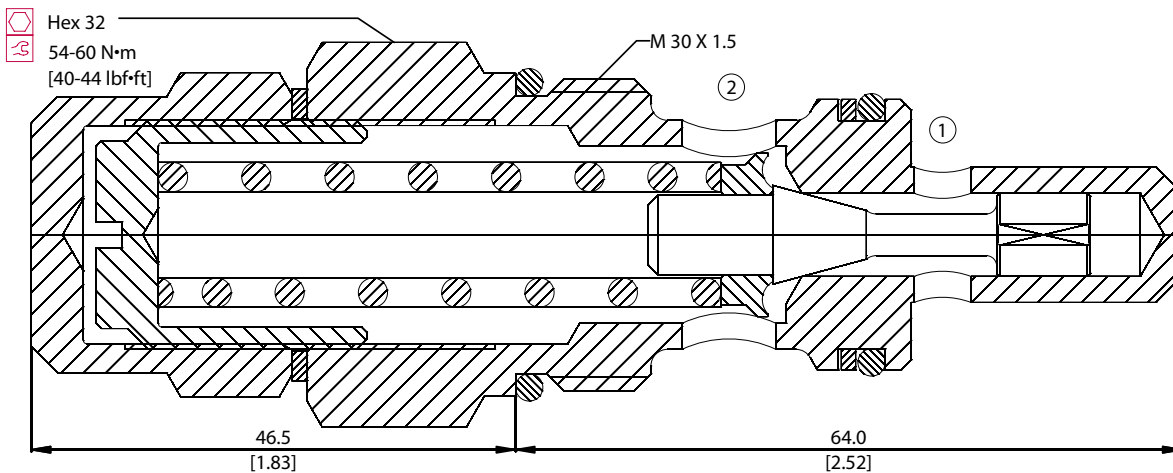
Specifications

<b>Rated pressure</b>	315 bar [4500 psi]
<b>Rated flow</b>	80 l/min [21 US gal/min]
<b>Weight</b>	0.35 kg [0.77 lb]
<b>Cavity</b>	VME08

**DIMENSIONS**

mm [in]

Cross-sectional view



**ORDERING INFORMATION**

VME 08 - E - 2 - DG3/4 - V - XXX

**Adjustment**

E = Internal screw  
 M = Handwheel

**Seals**

V = Viton  
 Omit = Buna-N

Seal kit  
 Consult factory  
 Consult factory

**Setting range**

1 = 25 - 80 bar [363-1160 psi]  
 2 = 35 - 160 bar [508-2321 psi]  
 3 = 70 - 315 bar [1015-4569 psi]

**Housing and ports**

00 = No Housing  
 DG3/4 = Al, 3/4 BSP  
 DG12S = Al, #12 SAE  
 Other housings available

**Housing P/N**

No Housing  
 VME08-DG-3/4  
 VME08-DG-12S

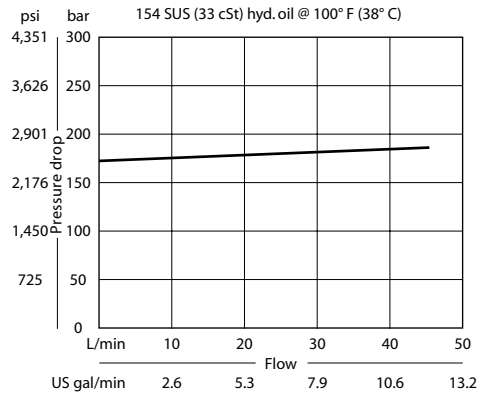
To order this valve with a specific factory setting, contact your Comatrol representative

**OPERATION**

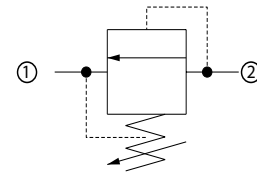
This is a direct acting differential area poppet type relief valve that relieves from 2 to 1.

**SPECIFICATIONS**

Theoretical performance



Schematic



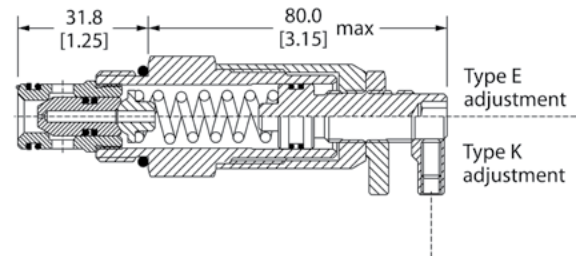
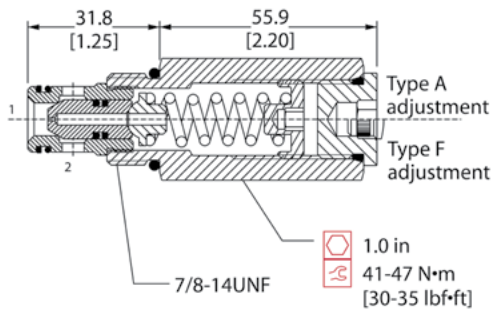
Specifications

<b>Rated pressure</b>	350 bar [5075 psi]
<b>Rated flow</b>	40 l/min [11 US gal/min]
<b>Leakage</b>	10 drops/min @ 80% of crack pressure
<b>Weight</b>	0.21 kg [0.46 lb]
<b>Cavity</b>	SDC10-2

**DIMENSIONS**

mm [in]

Cross-sectional view



**ORDERING INFORMATION**

**CP200-2-B-6S-E-D-150**

**Seals**  
 Seal kits  
 B = Buna-N 120015  
 V = Viton 120016

**Housing and ports**  
 0 = No Housing  
 DG3B = Al, 3/8 BSP  
 DG4B = Al, 1/2 BSP  
 6S = Al, #6 SAE  
 8S = Al, #8 SAE  
 Other housings available

**Housing P/N**  
 No Housing  
 SDC10-2-DG-3B  
 SDC10-2-DG-4B  
 CP10-2-6S  
 CP10-2-8S

**Adjustment options**  
 A = Internal  
 F = Tamper resistant  
 E = External  
 K = Knob

**Crack pressure**  
 Code x 10 = psi  
 Example: 150 = 1500 psi

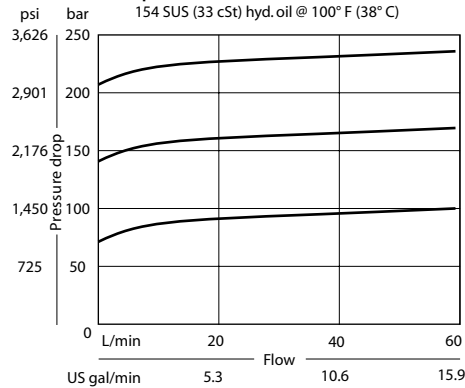
**Adjustment ranges**  
 D = Standard bar psi  
 69-345 [1000-5000]  
 103 [1500]

**OPERATION**

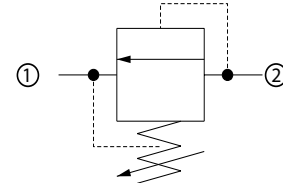
This is a direct acting differential area poppet type relief valve that relieves from 2 to 1.

**SPECIFICATIONS**

**Theoretical performance**



**Schematic**



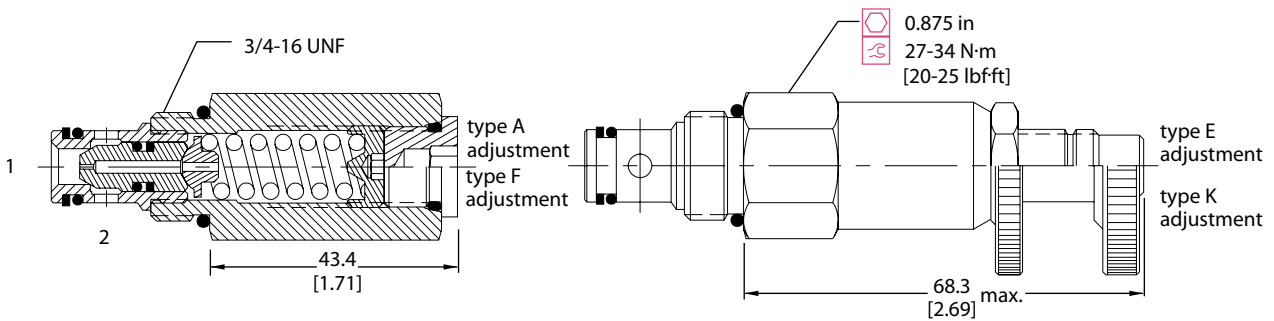
**Specifications**

<b>Rated pressure</b>	250 bar [3600 psi]
<b>Rated flow</b>	40 l/min [11 US gal/min]
<b>Leakage</b>	10 drops/min @ 80% of pressure setting
<b>Weight</b>	0.15 kg [0.32 lb]
<b>Cavity</b>	SDC08-2

**DIMENSIONS**

mm [in]

**Cross-sectional view**



**ORDERING INFORMATION**

**CP208-1-B-6S-A-C-150-XXX**

- Seals**
  - B = Buna-N
  - V = Viton
- Housing and ports**
  - 0 = No Housing
  - DG2B = AI, 1/4 BSP
  - DG3B = AI, 3/8 BSP
  - 4S = AI, #4 SAE
  - 6S = AI, #6 SAE
- Other housings available**
- Adjustment option**
  - A = Internal
  - E = External
  - F = Tamper resistant
  - K = Knob
- Seal Kit**
  - 120221
  - 120222
- Housing P/N**
  - No Housing
  - SDC08-2-DG-2B
  - SDC08-2-DG-3B
  - CP08-2-4S
  - CP08-2-6S
- Crack pressure**
  - Code x 10 = psi
  - Example: 150 = 1500 psi
- Pressure range**

	bar	[psi]
A =	7-69	[100-1000]
Standard	28	[400]
B =	14-138	[200-2000]
Standard	69	[1000]
C =	35-248	[500-3600]
Standard	103	[1500]

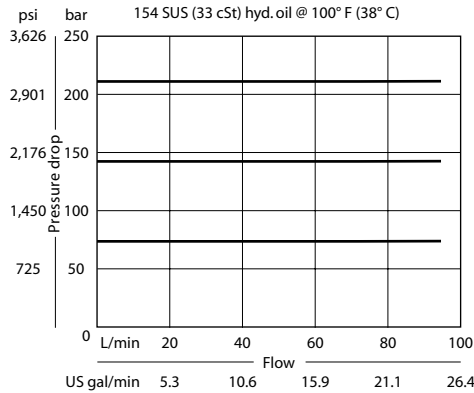


**OPERATION**

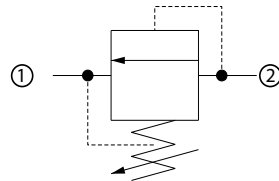
This is a direct acting differential area poppet type relief valve that relieves from 2 to 1.

**SPECIFICATIONS**

Theoretical performance



Schematic



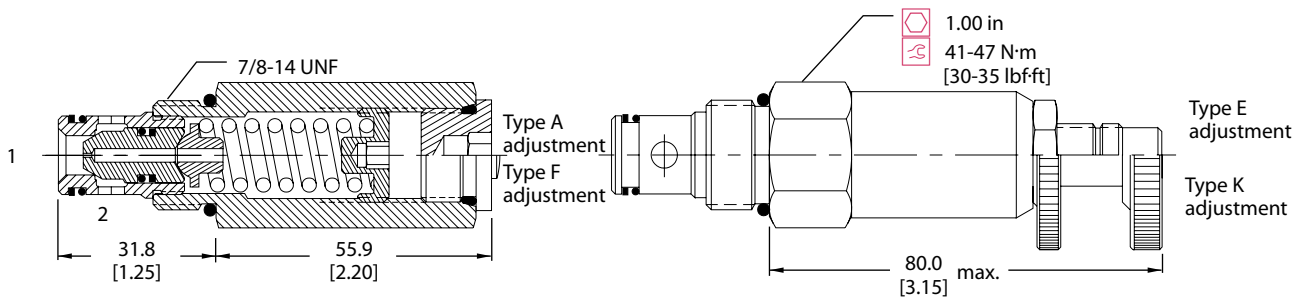
Specifications

<b>Rated pressure</b>	250 bar [3600 psi]
<b>Rated flow</b>	75 l/min [20 US gal/min]
<b>Leakage</b>	10 drops/min @ 80% of pressure setting
<b>Weight</b>	0.21 kg [0.46 lb]
<b>Cavity</b>	SDC10-2

**DIMENSIONS**

mm [in]

Cross-sectional view



**ORDERING INFORMATION**

**CP200 - 1 - B - 8S - A - C - 150**

**Seals**  
 B = Buna-N  
 V = Viton

**Housing and ports**  
 0 = No Housing  
 DG3B = Al, 3/8 BSP  
 DG4B = Al, 1/2 BSP  
 6S = Al, #6 SAE  
 8S = Al, #8 SAE  
 Other housings available

**Seal kit**  
 120015  
 120016

**Housing P/N**  
 No Housing  
 SDC10-2-DG-3B  
 SDC10-2-DG-4B  
 SDC10-2-6S  
 SDC10-2-8S

**Crack pressure**  
 Code x 10 = psi  
 Example: 150 = 1500 psi

**Adjustment option**  
 A = Internal  
 E = External  
 F = Tamper resistant  
 K = Knob

**Pressure range**

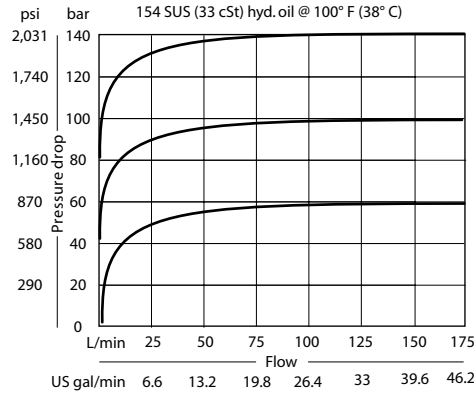
Code	Pressure range (bar)	Pressure range (psi)
A	7-55	[100-800]
Standard	28	[400]
B	17-138	[250-2000]
Standard	69	[1000]
C	41-248	[600-3600]
Standard	103	[1500]

**OPERATION**

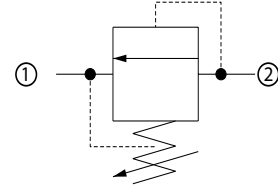
This is a direct acting differential area poppet type relief valve that relieves from 2 to 1.

**SPECIFICATIONS**

Theoretical performance



Schematic



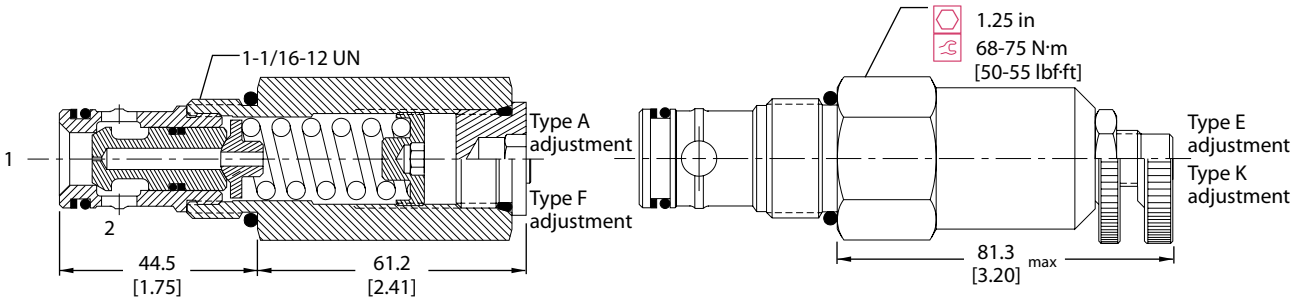
Specifications

<b>Rated pressure</b>	250 bar [3600 psi]
<b>Rated flow</b>	150 l/min [40 US gal/min]
<b>Leakage</b>	10 drops/min @ 80% of pressure setting
<b>Weight</b>	0.42 kg [0.92 lb]
<b>Cavity</b>	CP12-2

**DIMENSIONS**

mm [in]

Cross-sectional view



**ORDERING INFORMATION**

**CP201 - 1 - B - 12S - A - C - 150**

**Seals**  
 B = Buna-N  
 V = Viton

**Seal kit**  
 120017  
 120018

**Housing and ports**  
 0 = No Housing  
 4B = AI, 1/2 BSP  
 6B = AI, 3/4 BSP  
 10S = AI, #10 SAE  
 12S = AI, #12 SAE  
 Other housings available

**Housing P/N**  
 No Housing  
 CP12-2-4B  
 CP12-2-6B  
 CP12-2-10S  
 CP12-2-12S

**Adjustment option**  
 A = Internal  
 E = External  
 F = Tamper resistant  
 K = Knob

**Crack pressure**  
 Code x 10 = psi  
 Example: 150 = 1500 psi

**Pressure range**

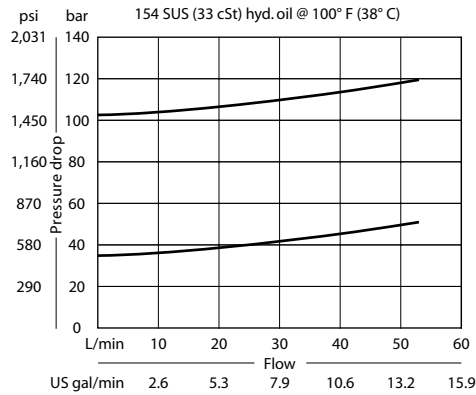
	bar	[psi]
A	7-69	[100-1000]
Standard	28	[400]
B	17-172	[250-2500]
Standard	69	[1000]
C	35-248	[500-3600]
Standard	103	[1500]

**OPERATION**

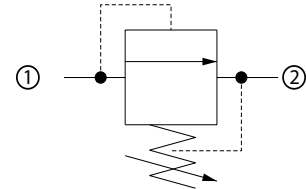
This is a direct acting spool-type relief valve that relieves from 1 to 2.

**SPECIFICATIONS**

Theoretical performance



Schematic



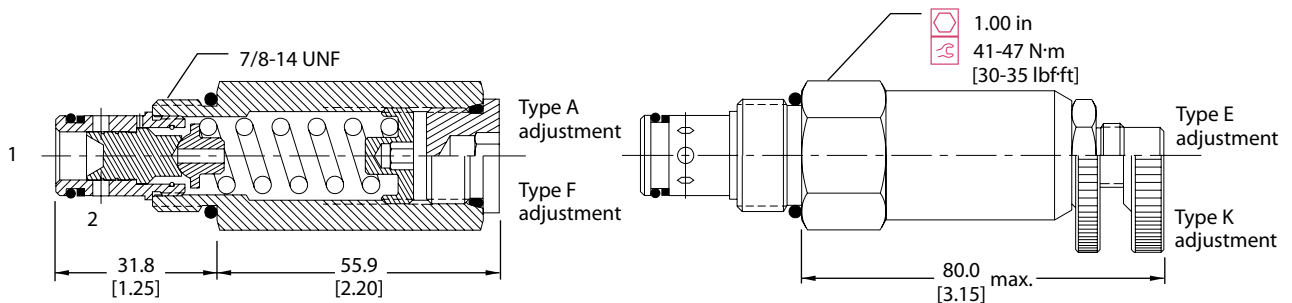
Specifications

<b>Rated pressure</b>	210 bar [3000 psi]
<b>Rated flow</b>	45 l/min [12 US gal/min]
<b>Leakage</b>	82 cm <sup>3</sup> /min [5 in <sup>3</sup> /min] @ 80% of pressure setting
<b>Weight</b>	0.22 kg [0.48 lb]
<b>Cavity</b>	SDC10-2

**DIMENSIONS**

mm [in]

Cross-sectional view



**ORDERING INFORMATION**

**CP210 - 1 - B - 6S - A - C - 075**

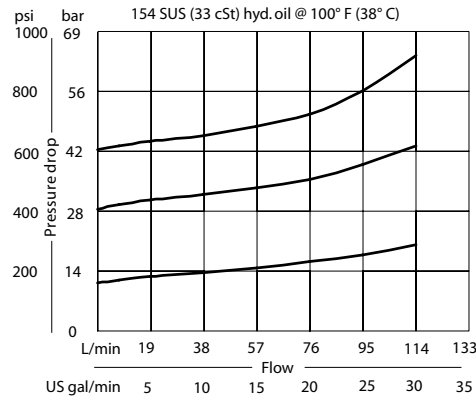
<b>Seals</b>	B = Buna-N V = Viton	<b>Seal kit</b>	120015 120016	<b>Crack pressure</b>	Code x 10 = psi Example: 075 = 750 psi
<b>Housing and ports</b>	0 = No Housing DG3B = Al, 3/8 BSP DG4B = Al, 1/2 BSP 6S = Al, #6 SAE 8S = Al, #8 SAE Other housings available	<b>Housing P/N</b>	No Housing SDC10-2-DG-3B SDC10-2-DG-4B CP10-2-6S CP10-2-8S	<b>Pressure range</b>	bar [psi]
<b>Adjustment option</b>	A = Internal E = External F = Tamper resistant K = Knob			A = 3.4-28 [50-400] Standard 17 [250] B = 5.5-55 [80-800] Standard 28 [400] C = 6.9-97 [100-1400] Standard 52 [750] D = 34-166 [500-2400] Standard 103 [1500]	

**OPERATION**

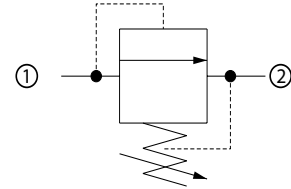
This is a direct acting spool-type relief valve that relieves from 1 to 2.

**SPECIFICATIONS**

Theoretical performance



Schematic



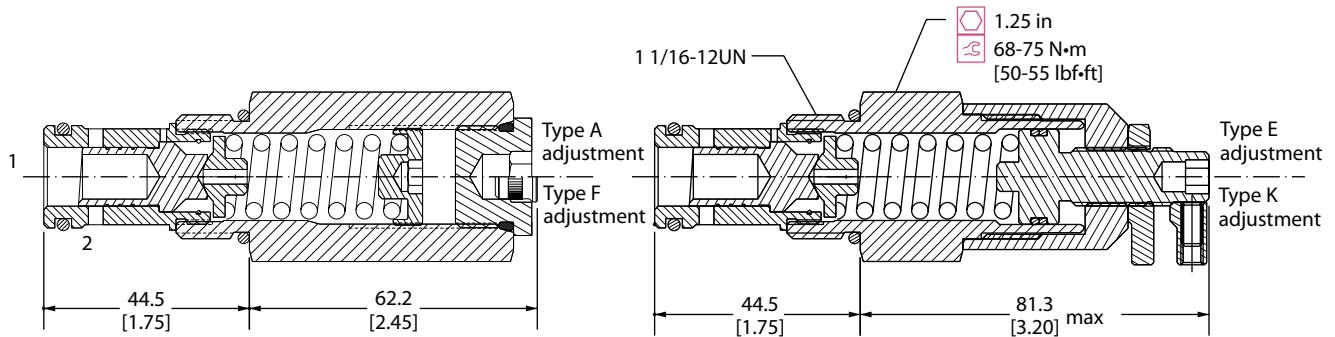
Specifications

<b>Rated pressure</b>	40 bar [600 psi]
<b>Rated flow</b>	75 l/min [20 US gal/min]
<b>Leakage</b>	82 cm <sup>3</sup> /min [5 in <sup>3</sup> /min] @ 80% of pressure setting
<b>Weight</b>	0.41 kg [0.90 lb]
<b>Cavity</b>	CP12-2

**DIMENSIONS**

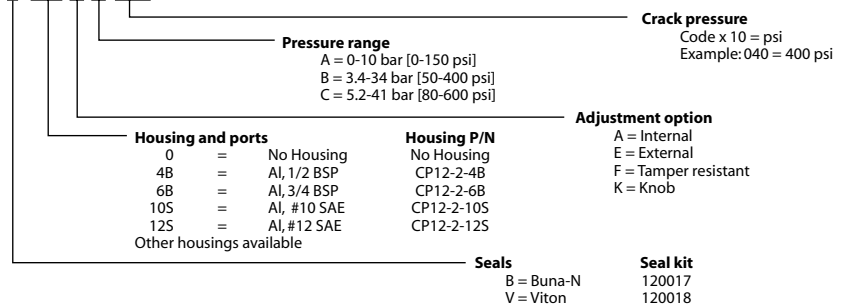
mm [in]

Cross-sectional view



**ORDERING INFORMATION**

**CP211-1-B-10S-A-C-040**

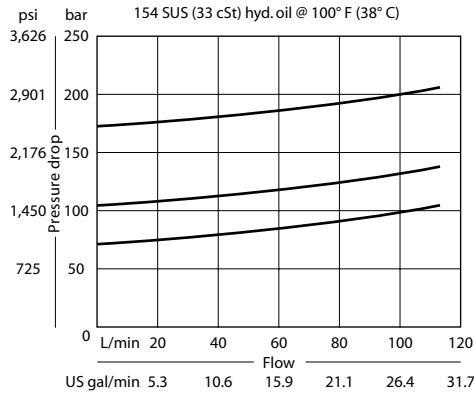


**OPERATION**

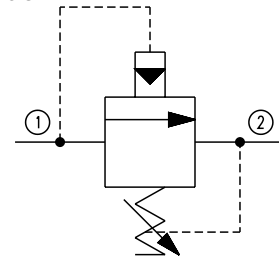
This is a pilot operated spool type relief valve that relieves pressure from 1 to 2.

**SPECIFICATIONS**

Theoretical performance



Schematic

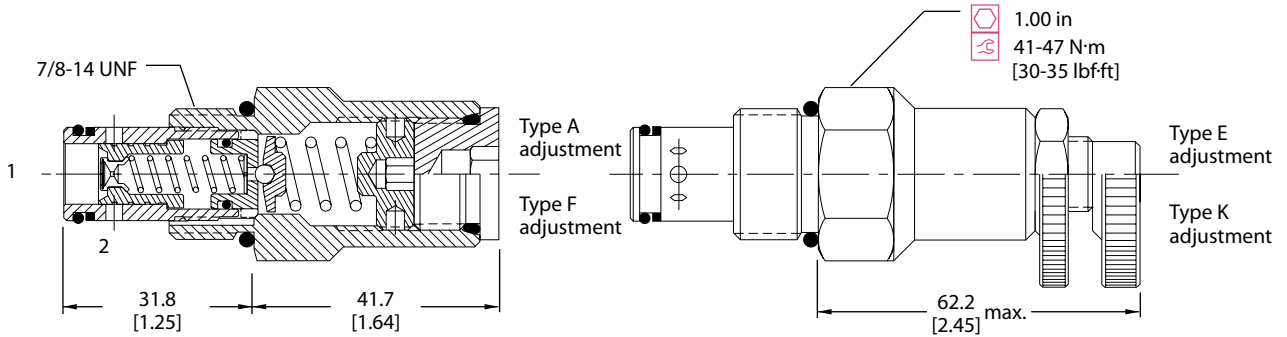


Specifications

<b>Rated pressure</b>	350 bar [5075 psi]
<b>Rated flow</b>	115 l/min [30 US gal/min]
<b>Leakage</b>	82 cm <sup>3</sup> /min [5 in <sup>3</sup> /min] @ 207 bar [3000 psi]
<b>Weight</b>	0.18 kg [0.40 lb]
<b>Cavity</b>	SDC10-2

**DIMENSIONS**

Cross-sectional view



**ORDERING INFORMATION**

**CP210 - 2 - B - 6S - A - C - 150**

**Seals**  
 B = Buna-N  
 V = Viton

**Seal kit**  
 120015  
 120016

**Housing and ports**  
 0 = No Housing  
 DG3B = Al, 3/8 BSP  
 DG4B = Al, 1/2 BSP  
 6S = Al, #6 SAE  
 8S = Al, #8 SAE  
 Other housings available

**Housing P/N**  
 No Housing  
 SDC10-2-DG-3B  
 SDC10-2-DG-4B  
 CP10-2-6S  
 CP10-2-8S

**Adjustment option**  
 A = Internal  
 E = External  
 F = Tamper resistant  
 K = Knob

**Crack pressure**  
 Code x 10 = psi  
 Example: 150 = 1500 psi

**Pressure range**

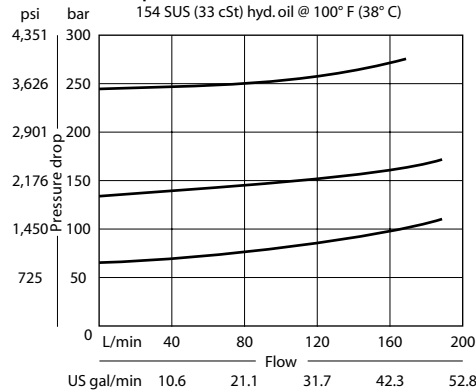
Code	bar	[psi]
A	14-69	[200-800]
Standard	28	[400]
B	14-103	[200-1500]
Standard	69	[1000]
C	28-207	[400-3000]
Standard	103	[1500]
D	28-345	[400-5000]
Standard	103	[1500]

**OPERATION**

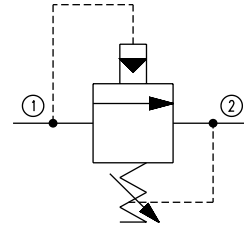
This valve relieves from 1 to 2 and is a pilot operated spool type relief.

**SPECIFICATIONS**

**Theoretical performance**



**Schematic**

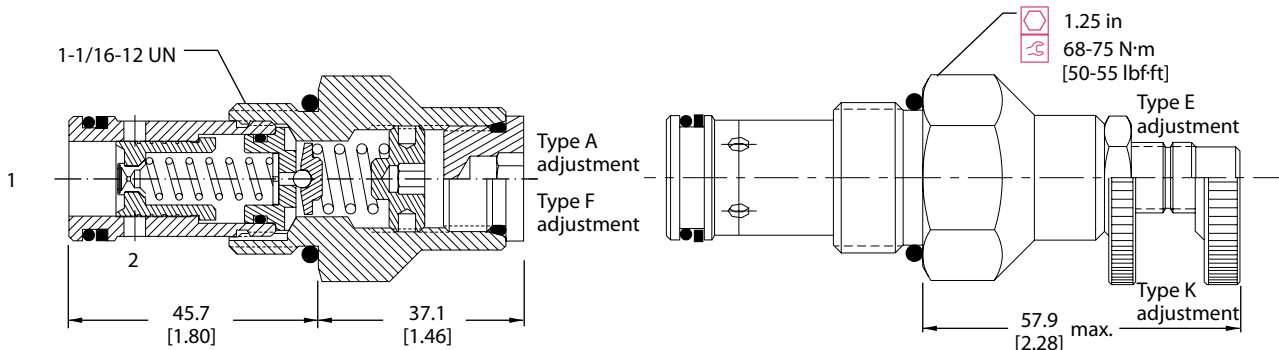


**Specifications**

<b>Rated pressure</b>	350 bar [5075 psi]
<b>Rated flow</b>	190 l/min [50 US gal/min]
<b>Leakage</b>	82 cm <sup>3</sup> /min [5 in <sup>3</sup> /min] @ 207 bar [3000 psi]
<b>Weight</b>	0.17 kg [0.37 lb]
<b>Cavity</b>	CP12-2

**DIMENSIONS**

**Cross-sectional view**



**ORDERING INFORMATION**

**CP211 - 2 - B - 12S - A - C - 150**

- Seals**
  - B = Buna-N
  - V = Viton
- Housing and ports**
  - 0 = No Housing
  - 4B = Al, 1/2 BSP
  - 6B = Al, 3/4 BSP
  - 10S = Al, #10 SAE
  - 12S = Al, #12 SAE
- Other housings available**
- Adjustment option**
  - A = Internal
  - E = External
  - F = Tamper resistant
  - K = Knob
- Seal kit**
  - 120017
  - 120018
- Housing P/N**
  - No Housing
  - CP12-2-4B
  - CP12-2-6B
  - CP12-2-10S
  - CP12-2-12S
- Crack pressure**
  - Code x 10 = psi
  - Example: 150 = 1500 psi
- Pressure range**

	bar	[psi]
A =	14-69	[200-800]
Standard	28	[400]
B =	14-103	[300-1500]
Standard	69	[1000]
C =	28-207	[400-3000]
Standard	103	[1500]
D =	28-345	[400-5000]
Standard	103	[1500]

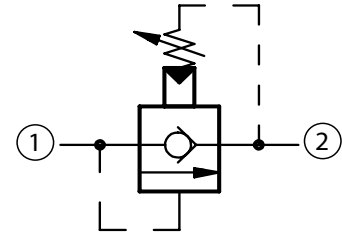
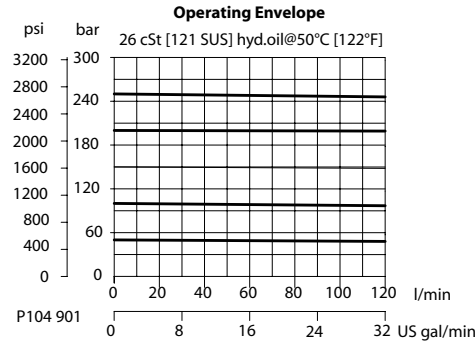
**OPERATION**

This is a pilot-operated poppet type relief valve that relieves pressure from 1 to 2, with an integral free-flow check from 2 to 1.

**SPECIFICATIONS**

Theoretical performance

Schematic

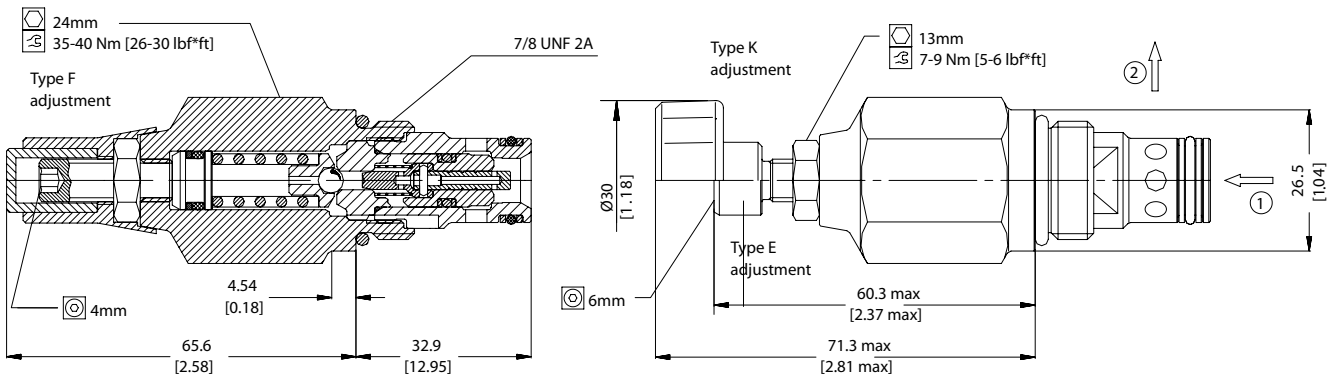


**Specifications**

<b>Rated pressure</b>	250 bar [3625 psi]
<b>Rated flow</b>	120 l/min [32 US gal/min]
<b>Leakage</b>	6 drops/min @ 80% of pressure setting
<b>Weight</b>	0.22 kg [0.49 lb]
<b>Cavity</b>	SDC10-2

**DIMENSIONS**

Cross-sectional view



**ORDERING INFORMATION**

**RV10 - POP - 3 - E - XXX - B - 00**

**Pressure Range**  
 3 = 25-250 Bar [360-3600 psi]

**Adjustment option**  
 E = External adjustment  
 F = Tamper resistant  
 K = Knob adjustment

**Cracking pressure**  
 Code = Std. setting in bar:  
 100 = 100 Bar [1500 psi]  
 XXX = No specific setting

**Body and Ports**  
 Omit = Cartridge only  
 6S = Al, #6 SAE  
 8S = Al, #8 SAE  
 DG3B = Al, 3/8 BSP  
 DG4B = Al, 1/2 BSP  
 Other housing available

**Seals**      **Seal Kit**  
 B = Buna-N seals      354004019  
 V = Viton seals      354003419

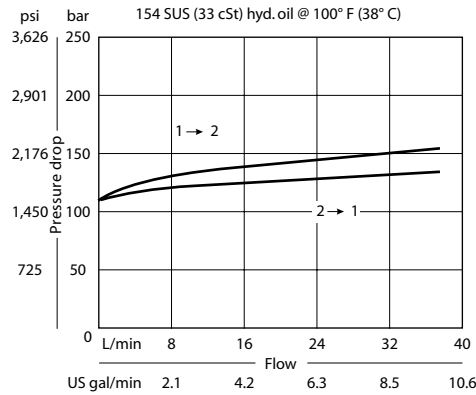
**Body Nomenclature**  
 No Body  
 CP10-2-6S  
 CP10-2-8S  
 SDC10-2-DG3B  
 SDC10-2-DG4B

**OPERATION**

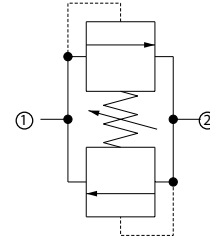
This is a bi-directional relief valve that relieves pressure from 1 to 2 and from 2 to 1.

**SPECIFICATIONS**

**Theoretical performance**



**Schematic**

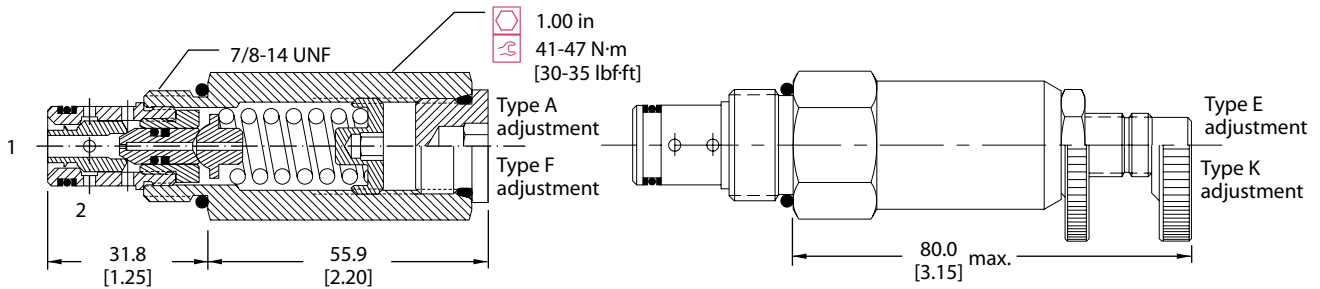


**Specifications**

<b>Rated pressure</b>	250 bar [3600 psi]
<b>Rated flow</b>	40 l/min [11 US gal/min]
<b>Leakage</b>	5 cm <sup>3</sup> /min [0.3 in <sup>3</sup> /min] @ 80% of pressure setting
<b>Weight</b>	0.20 kg [0.43 lb]
<b>Cavity</b>	SDC10-2

**DIMENSIONS**

**Cross-sectional view**



**ORDERING INFORMATION**

**CP200 - 7 - B - 8S - A - C - 150**

<b>Seals</b>		<b>Seal kit</b>		<b>Crack pressure</b>	
B = Buna-N		120073		Code x 10 = psi	
V = Viton		120074		Example: 150 = 1500 psi	
<b>Housing and ports</b>		<b>Housing P/N</b>		<b>Pressure range</b>	
0 = No Housing		No Housing		A = 7-41	bar [psi]
DG3B = Al, 3/8 BSP		SDC10-2-DG-3B		Standard 28	[100-600]
DG4B = Al, 1/2 BSP		SDC10-2-DG-4B		B = 17-138	[250-2000]
6S = Al, #6 SAE		CP10-2-6S		Standard 69	[1000]
8S = Al, #8 SAE		CP10-2-8S		C = 41-248	[600-3600]
Other housings available				Standard 103	[1500]
<b>Adjustment option</b>					
A = Internal					
E = External					
F = Tamper resistant					
K = Knob					

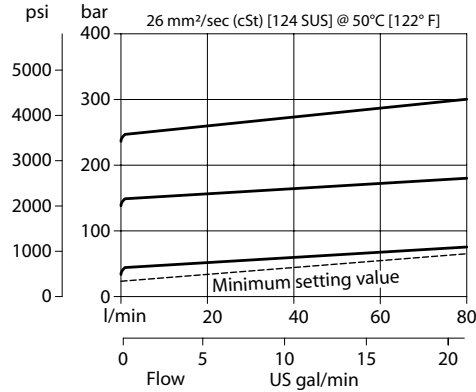


**OPERATION**

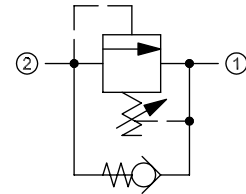
This is a direct-acting, differential area, poppet-type relief valve that relieves from 2 to 1 with an integral free-flow check from 1 to 2.

**SPECIFICATIONS**

Theoretical performance



Schematic



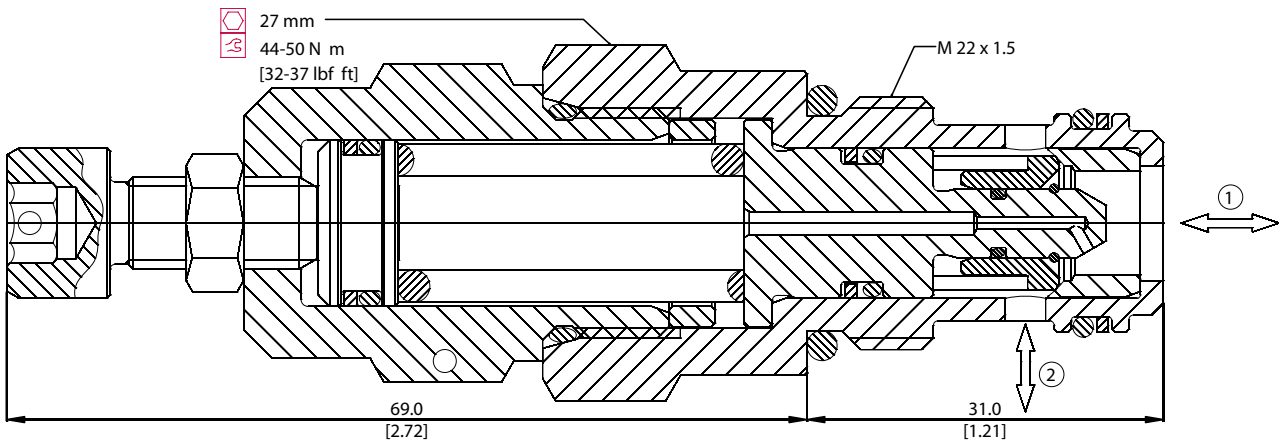
Specifications

<b>Rated pressure</b>	350 bar [5075 psi]
<b>Rated flow</b>	80 l/min [21 US gal/min]
<b>Weight</b>	0.22 kg [0.49 lb]
<b>Cavity</b>	NCS06/2

**DIMENSIONS**

mm [in]

Cross-sectional view



**ORDERING INFORMATION**

VSB 06-EN - 1 - 00 - V - XXX

**Setting range**

- 1 = 20 - 80 bar [363 - 2031 psi]
- 2 = 70 - 210 bar [1015 - 3046 psi]
- 3 = 105 - 350 bar [1523 - 5076 psi]

**Seals**  
V = Viton  
Omit = Buna-N

**Housing and ports**  
00 = No Housing  
DG3/8 = AL, 3/8 BSP  
DG1/2 = AL, 1/2 BSP  
DG6S = AL, #6 SAE  
DG8S = AL, #8 SAE  
Other housings available

**Seal Kit**  
230000380  
230000060

**Housing P/N**  
No Housing  
NCS06/2-DG-3/8  
NCS06/2-DG-1/2  
NCS06/2-DG-6S  
NCS06/2-DG-8S

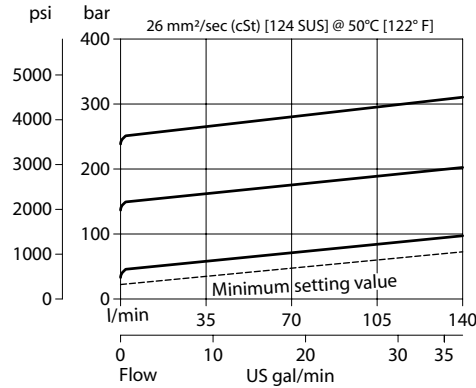
To order this valve with a specific factory setting, contact your Comatrol representative

**OPERATION**

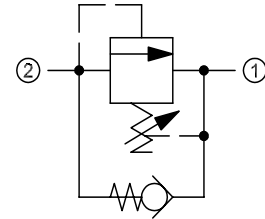
This is a direct-acting, differential area, poppet-type relief valve that relieves from 2 to 1 with an integral free-flow check from 1 to 2.

**SPECIFICATIONS**

Theoretical performance



Schematic

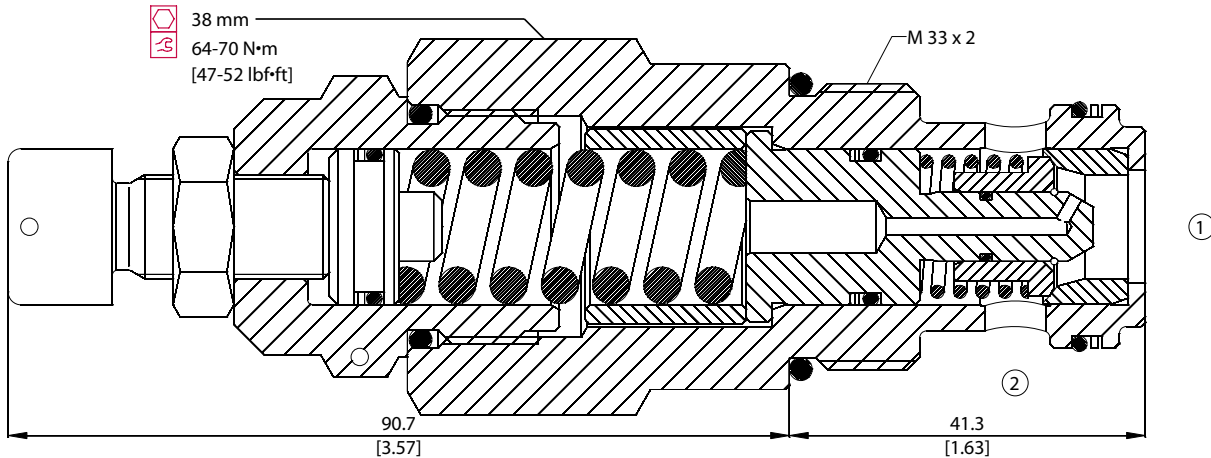


Specifications

<b>Rated pressure</b>	350 bar [5075 psi]
<b>Rated flow</b>	140 l/min [37 US gal/min]
<b>Weight</b>	0.60 kg [1.32 lb]
<b>Cavity</b>	NCS12/2

**DIMENSIONS**

Cross-sectional view



**ORDERING INFORMATION**

VSB 12-EN - 1 - 00 - V - XXX

Setting range

- 1 = 25 - 170 bar [363 - 2466 psi]
- 2 = 70 - 270 bar [1015 - 3916 psi]
- 3 = 105 - 350 bar [1523 - 5076 psi]

Seals

- V = Viton
- Omit = Buna-N

Seal Kit

- 230000470
- 230000120

Housing and ports

- 00 = No Housing
- DG1/2 = AL, 1/2 BSP
- DG3/4 = AL, 3/4 BSP
- DG8S = AL, #8 SAE
- DG12S = AL, #12 SAE
- Other housings available

Housing P/N

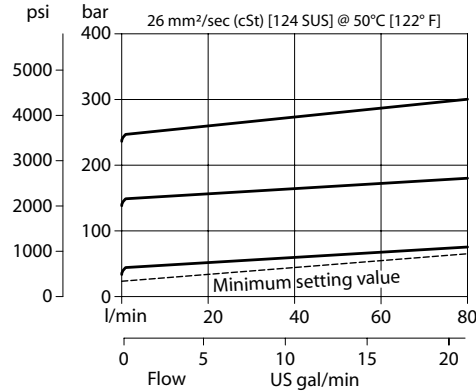
- No Housing
- NCS12/2-DG-1/2
- NCS12/2-DG-3/4
- NCS12/2-DG-8S
- NCS12/2-DG-12S

**OPERATION**

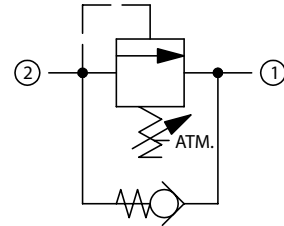
This is a direct-acting, differential area, atmospherically-vented, poppet-type relief valve that relieves from 2 to 1 with an integral free-flow check from 1 to 2.

**SPECIFICATIONS**

Theoretical performance



Schematic



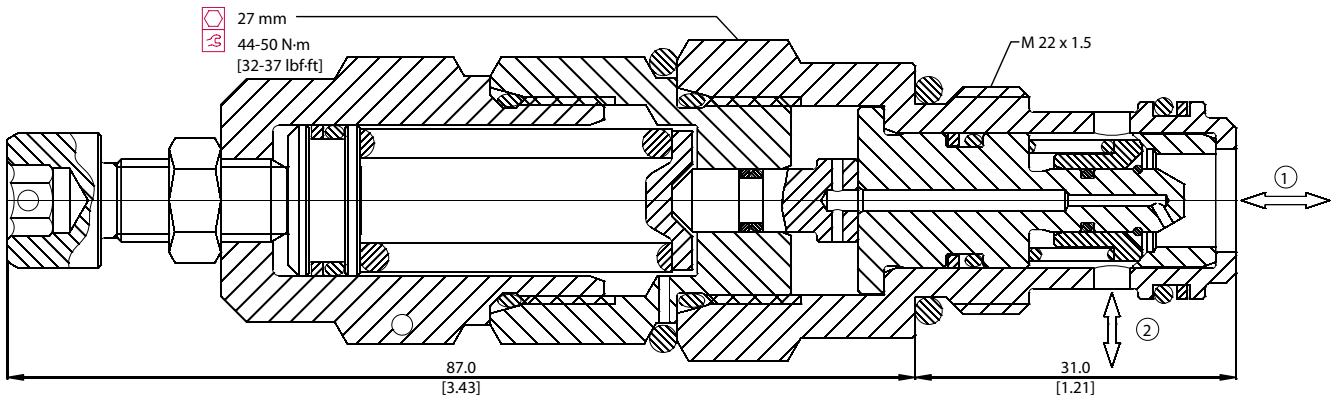
Specifications

<b>Rated pressure</b>	350 bar [5075 psi]
<b>Rated flow</b>	80 l/min [21 US gal/min]
<b>Weight</b>	0.29 kg [0.64 lb]
<b>Cavity</b>	NCS06/2

**DIMENSIONS**

mm [in]

Cross-sectional view



**ORDERING INFORMATION**

VSB 06-CN - 1 - 00 - V - XXX

**Setting range**

- 1 = 25 - 140 bar [363 - 2031 psi]
- 2 = 70 - 210 bar [1015 - 3046 psi]
- 3 = 105 - 350 bar [1523 - 5076 psi]

**Seals**  
 V = Viton  
 Omit = Buna-N

**Seal Kit**  
 230000380  
 230000060

**Housing and ports**  
 00 = No Housing  
 DG3B = AL, 3/8 BSP  
 DG4B = AL, 1/2 BSP  
 DG6S = AL, #6 SAE  
 DG8S = AL, #8 SAE  
 Other housings available

**Housing P/N**  
 No Housing  
 NCS06/2-DG-3/8  
 NCS06/2-DG-1/2  
 NCS06/2-DG-6S  
 NCS06/2-DG-8S

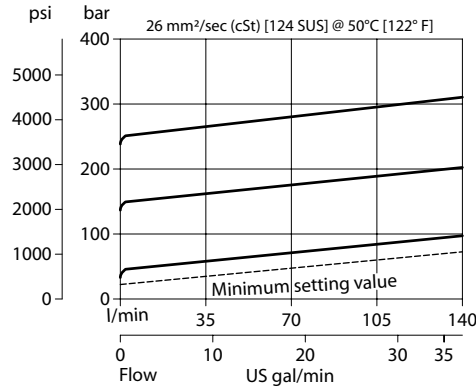
To order this valve with a specific factory setting, contact your Comatrol representative

**OPERATION**

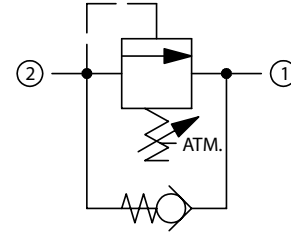
This is a direct-acting, differential area, atmospherically-vented, poppet-type relief valve that relieves from 2 to 1 with an integral free-flow check from 1 to 2.

**SPECIFICATIONS**

Theoretical performance



Schematic



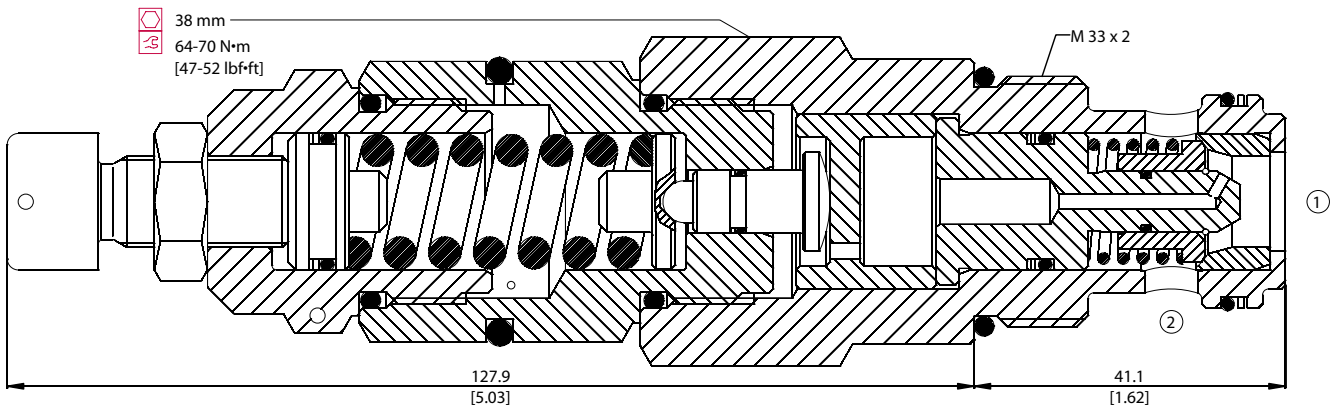
Specifications

<b>Rated pressure</b>	350 bar [5075 psi]
<b>Rated flow</b>	140 l/min [37 US gal/min]
<b>Weight</b>	0.75 kg [1.65 lb]
<b>Cavity</b>	NCS12/2

**DIMENSIONS**

mm [in]

Cross-sectional view



**ORDERING INFORMATION**

**VSB 12-CN - 1 - 00 - V - XXX**

	<b>Seals</b>	<b>Seal Kit</b>
	V = Viton	230000470
	Omit = Buna-N	230000120
	<b>Housing and ports</b>	<b>Housing P/N</b>
	00 = No Housing	No Housing
	DG1/2 = AL, 1/2 BSP	NCS12/2-DG-1/2
	DG3/4 = AL, 3/4 BSP	NCS12/2-DG-3/4
	DG8S = AL, #8 SAE	NCS12/2-DG-8S
	DG12S = AL, #12 SAE	NCS12/2-DG-12S
	Other housings available	
<b>Setting range</b>		
1 = 25 - 170 bar [363 - 2466 psi]		
2 = 70 - 270 bar [1015 - 3916 psi]		
3 = 105 - 350 bar [1523 - 5076 psi]		

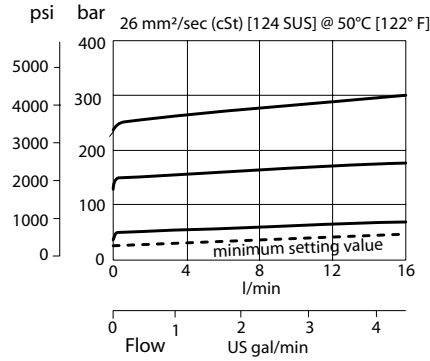
To order this valve with a specific factory setting, contact your Comatrol representative

**OPERATION**

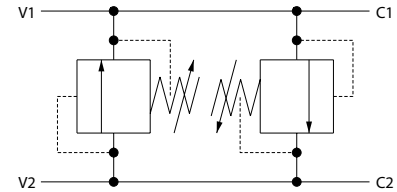
This valve is an inline cross relief. It uses two VME 06 direct-acting relief valves.

**SPECIFICATIONS**

Theoretical performance



Schematic



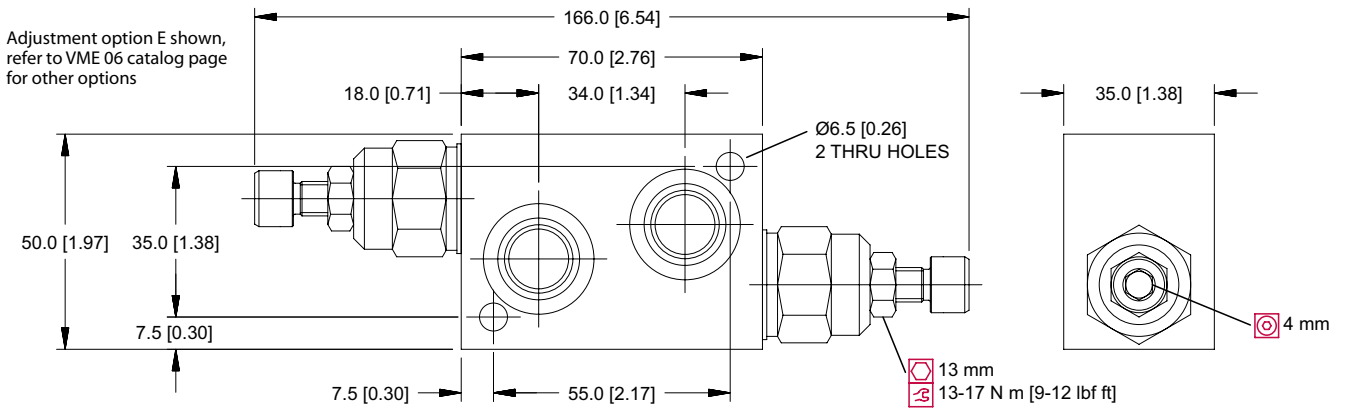
Specifications

<b>Rated pressure</b>	210 bar [3045 psi]
<b>Rated flow</b>	40 l/min [11 US gal/min]
<b>Weight</b>	1.11 kg [2.45 lb]
<b>Cavity</b>	none

**DIMENSIONS**

mm [in]

Cross-sectional view



**ORDERING INFORMATION**

VA-E 06 - EN - 2 - LG - V - XXX

**Adjustment option**

- EN = External screw
- M = Handwheel

**Setting range**

- 1 = 25 - 70 bar [360 - 1000 psi]
- 2 = 35 - 170 bar [510 - 2500 psi]
- 3 = 70 - 315 bar [1000 - 4500 psi]

**Seals**

- V = Viton
- Omit = Buna-N

**Seal kit**

Consult factory  
 Consult factory

**Housing and ports**

- LG = AL, 3/8 BSP

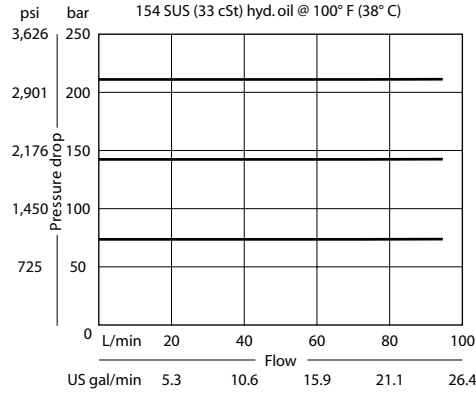
To order this valve with a specific factory setting, contact your Comatrol representative

**OPERATION**

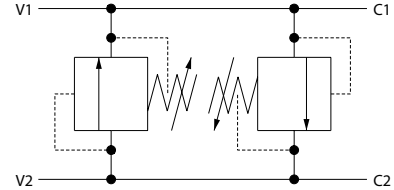
This valve is an inline cross relief. It uses two CP200-1 differential area relief valves.

**SPECIFICATIONS**

**Theoretical performance**



**Schematic**

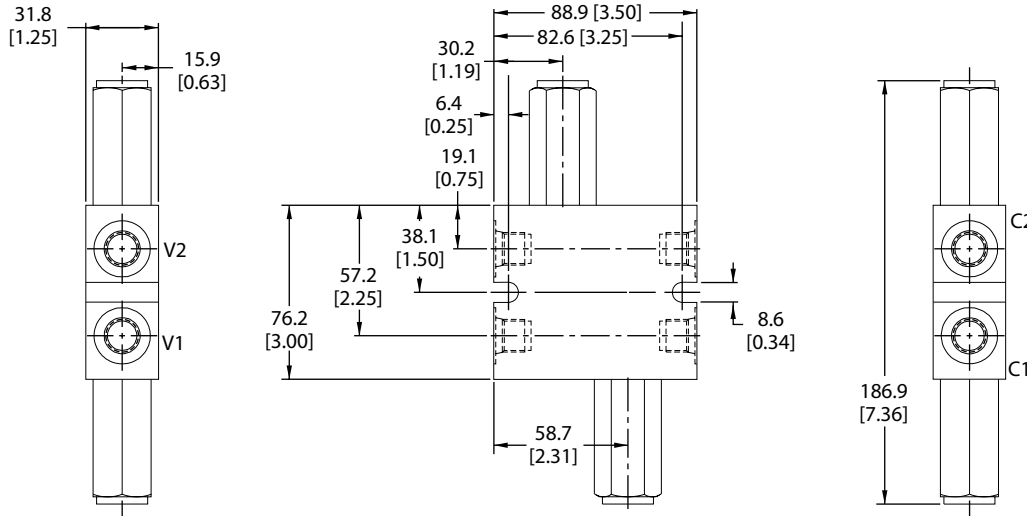


**Specifications**

<b>Rated pressure</b>	250 bar [3600 psi]
<b>Rated flow</b>	75 l/min [20 US gal/min]
<b>Weight</b>	0.82 kg [1.80 lb]
<b>Cavity</b>	none

**DIMENSIONS**

mm [in]



**ORDERING INFORMATION**

**CP220 - 1 - 8S - B - 0 - A - C - 150**

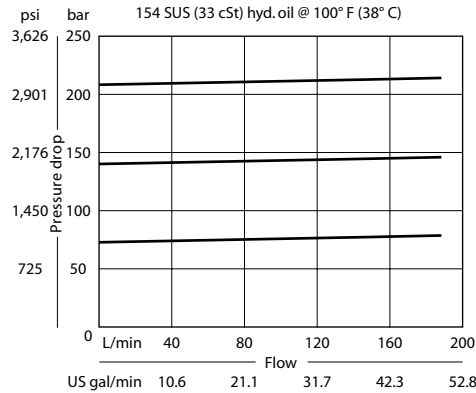
<b>Housing and ports</b>		<b>Housing P/N</b>		<b>Crack pressure</b>	
3B = Al, 3/8 BSP		221743		Code x 10 = psi	
4B = Al, 1/2 BSP		221744		Example: 150 = 1500 psi	
6S = Al, #6 SAE		220216			
8S = Al, #8 SAE		220217			
Other housings available					
<b>Seals</b>		<b>Seal kit</b>		<b>Pressure range</b>	
B = Buna-N		120072		A = 7-55	[100-800]
V = Viton		120161		Standard	28 [400]
<b>Adjustment option</b>				B = 17-138	[250-2000]
A = Internal				Standard	69 [1000]
E = External				C = 41-248	[600-3600]
F = Tamper resistant				Standard	103 [1500]
K = Knob					

**OPERATION**

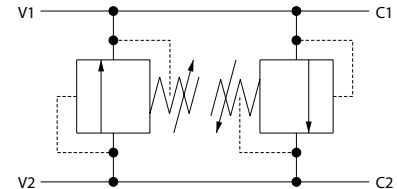
This valve is an inline cross relief. It uses two CP201-1 differential area relief valves.

**SPECIFICATIONS**

Theoretical performance



Schematic



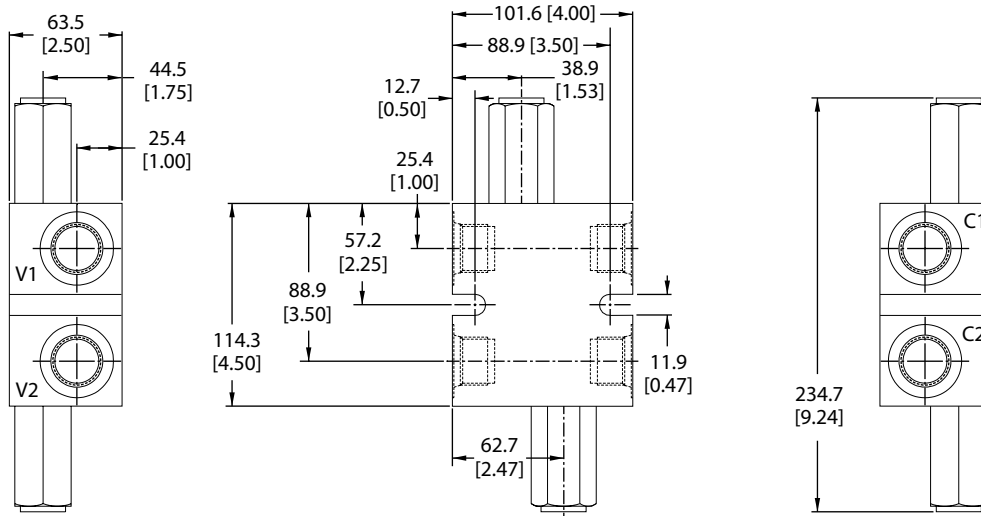
Specifications

<b>Rated pressure</b>	250 bar [3600 psi]
<b>Rated flow</b>	190 l/min [50 US gal/min]
<b>Weight</b>	2.25 kg [4.95 lb]
<b>Cavity</b>	none

**DIMENSIONS**

mm [in]

Cross-sectional view



**ORDERING INFORMATION**

**CP221-1 - 16S - B - 0 - A - C - 150**

Housings & Ports	Housing P/N
6B: 3/4 BSP, AL	221742
8B: 1 BSP, AL	221690
12S: #12 SAE, AL	220223
16S: #16 SAE, AL	220222

Seal Option		
Code	Seal Material	Seal kit
B	Buna	120017
V	Viton	120018

Adjustment Option	
A	Internal
E	External
F	Tamper Resistant
K	Knob

Cracking Pressure

Code x 10 = psi

Example: 150 = 1500 psi

Pressure Range

	bar	[psi]
A =	7-69	[100-1000]
Standard	28	[400]
B =	17-172	[250-2500]
Standard	69	[1000]
C =	41-248	[500-3600]
Standard	103	[1500]

