

Comatrol

RESPONSIVENESS IN MOTION

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Relief Valves

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, Dampening, Poppet Type	30 l/min [8 US gal/min]	250 bar [3600 psi]	RV - 10
	VEN 06	NCS06/2		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

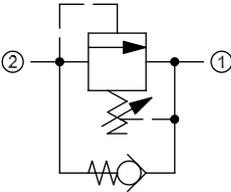
Differential Area	Model No.	Cavity	Description	Flow	Pressure	Page
	CP200-2	SDC10-2	Relief Valve, Differential Area, Poppet Type,	40 l/min [11 US gal/min]	350 bar [5075 psi]	RV - 15
	CP208-1	SDC08-2		40 l/min [11 US gal/min]	250 bar [3600 psi]	RV - 16
	CP200-1	SDC10-2		75 l/min [20 US gal/min]	250 bar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

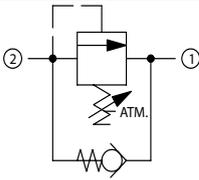
Direct Acting	Model No.	Cavity	Description	Flow	Pressure	Page
	CP210-1	SDC10-2	Relief Valve, Direct Acting,	45 l/min [12 US gal/min]	210 bar [3000 psi]	RV - 19
	CP211-1	CP12-2	Spool Type,	75 l/min [20 US gal/min]	40 bar [600 psi]	RV - 20

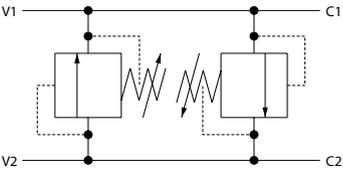
Pilot Operated	Model No.	Cavity	Description	Flow	Pressure	Page
	CP210-2	SDC10-2	Relief Valve, Pilot Operated,	115 l/min [30 US gal/min]	350 bar [5075 psi]	RV - 21
	CP211-2	CP12-2	Spool Type	190 l/min [50 US gal/min]	350 bar [5075 psi]	RV - 22

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

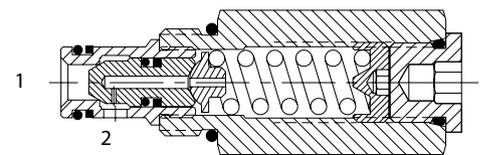


OPERATION

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.

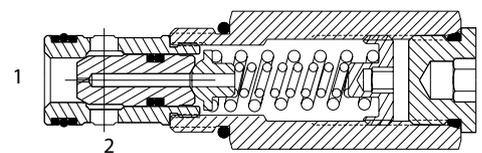
Direct acting poppet relief valve



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:

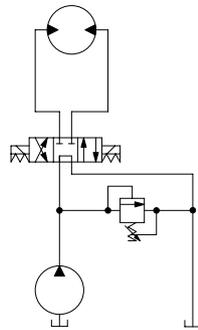
- Fast response
- Contamination tolerant
- Low leakage
- Low cost

OPERATION
 (continued)

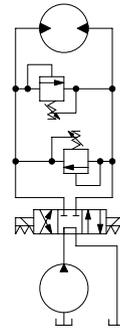
Because of these features some common applications for direct-acting and differential area poppet relief valves are:

- 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



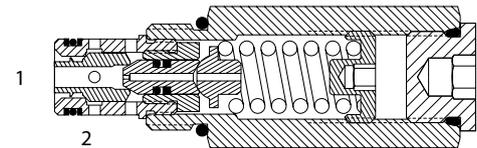
Work Port Cross-Relief Valves



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

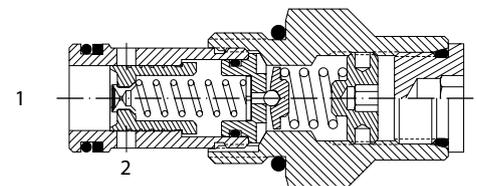


A common application for a bi-directional relief valve is as a work port cross-over relief where one bi-directional valve can replace two direct-acting valves.

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

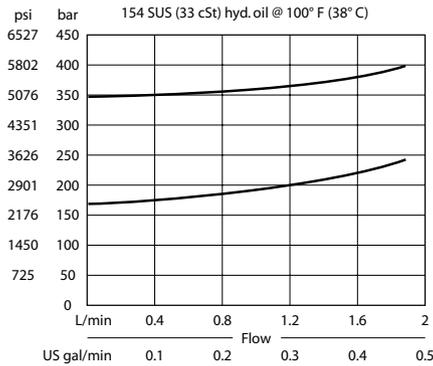
A common application for pilot-operated relief valves is as a main system relief where high pressure or flow capability and/or extremely precise pressure control is required.

OPERATION

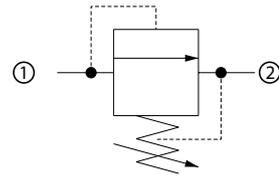
This is a direct-acting poppet type thermal relief valve that relieves from 1 to 2.

SPECIFICATIONS

Theoretical performance



Schematic



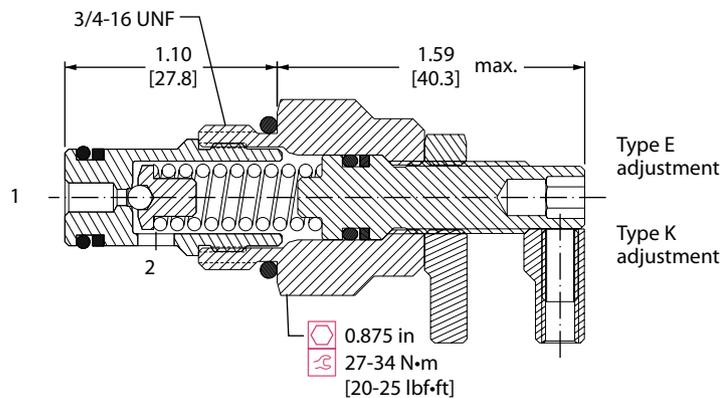
Specifications

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

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

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

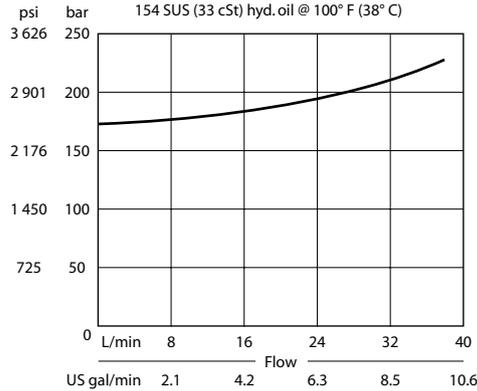
Seals B = Buna-N V = Viton	Seal kits 120221 120222	Crack pressure Code x 10 = psi Example: 300 = 3000 psi																					
Housing and ports 0 = No Housing DG2B = Al, 1/4 BSP DG3B = Al, 3/8 BSP 4S = Al, #4 SAE 6S = Al, #6 SAE Other housings available	Housing P/N No Housing SDC08-2-DG-2B SDC08-2-DG-3B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

OPERATION

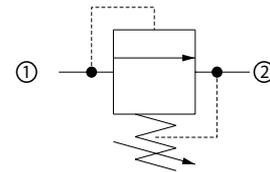
This is a direct-acting poppet type relief valve that relieves from 1 to 2.

SPECIFICATIONS

Theoretical performance



Schematic



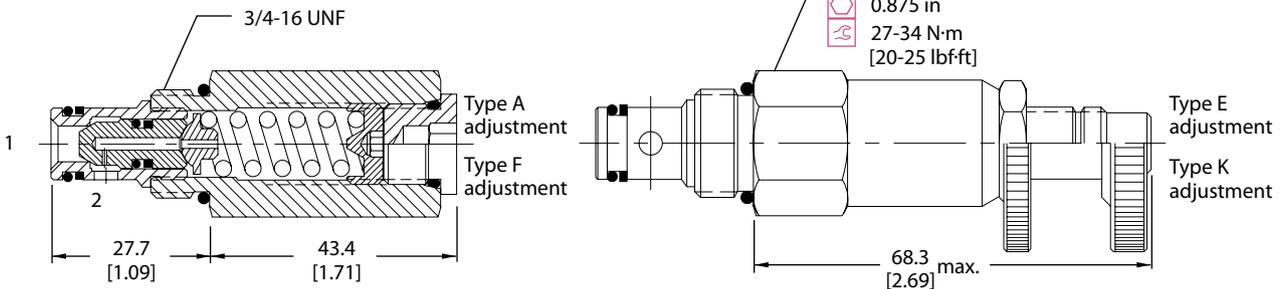
Specifications

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

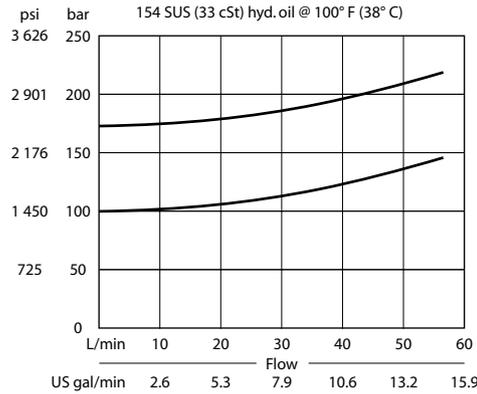
Code	bar	[psi]
A	7-69	[100-1000]
Standard	28	[400]
B	14-138	[200-2000]
Standard	69	[1000]
C	35-248	[500-3600]
Standard	103	[1500]

OPERATION

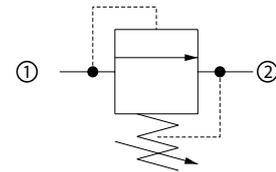
This is a direct-acting poppet type relief valve that relieves from 1 to 2.

SPECIFICATIONS

Theoretical performance



Schematic



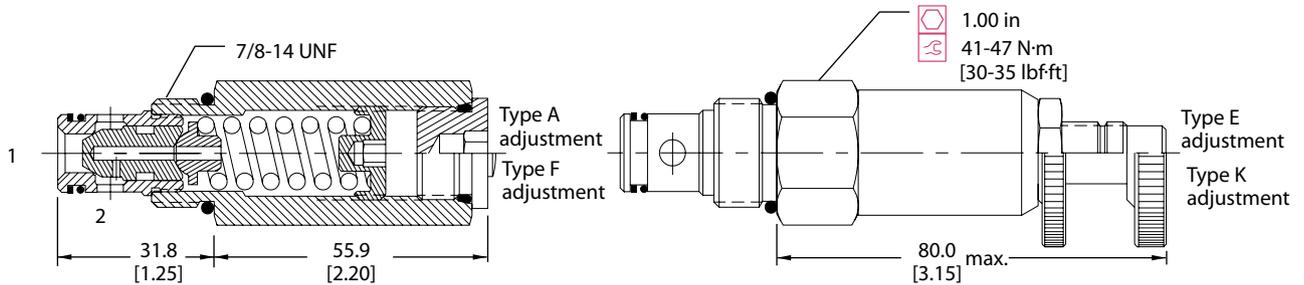
Specifications

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

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

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

Seals	Seal kit	Crack pressure	
B = Buna-N	120015	Code x 10 = psi	
V = Viton	120016	Example: 150 = 1500 psi	
Housing and ports	Housing P/N	Pressure range	
0 = No Housing	No Housing	A = 7-69	[100-1000]
DG3B = Al, 3/8 BSP	SDC10-2-DG-3B	Standard = 28	[400]
DG4B = Al, 1/2 BSP	SDC10-2-DG-4B	B = 17-172	[250-2500]
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]
Adjustment option			
A = Internal			
E = External			
F = Tamper resistant			
K = Knob			

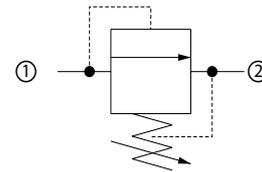
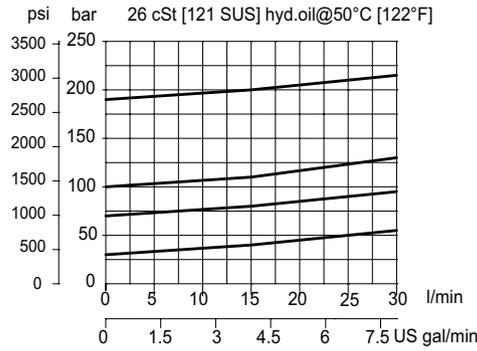
OPERATION

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



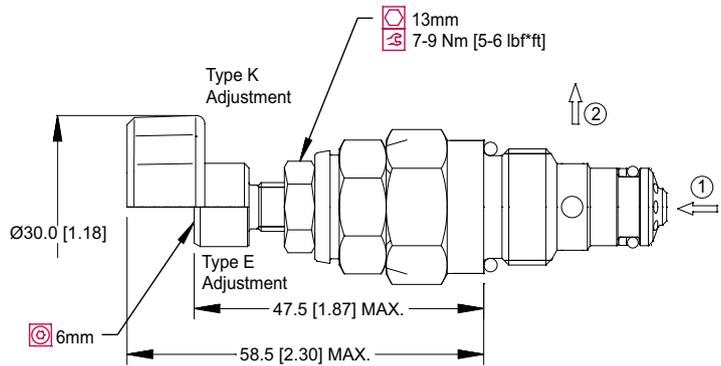
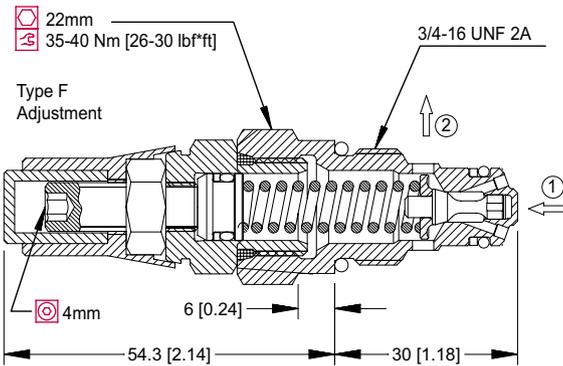
Specifications

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

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

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

Pressure range	Housing and ports	Housing P/N
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	
Adjustment option	Seals	Seal Kit
E = External	B = Buna-N	354000119
F = Tamper resistant	V = Viton	354000219
K = Knob		
Crack pressure		
Code = Setting in Bar		
XXX = No specific setting		

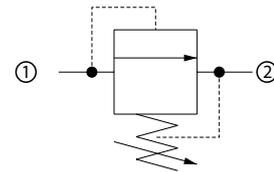
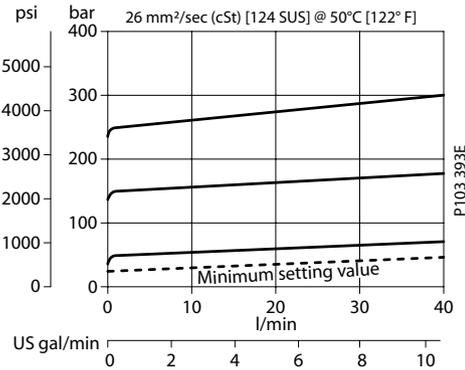
OPERATION

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

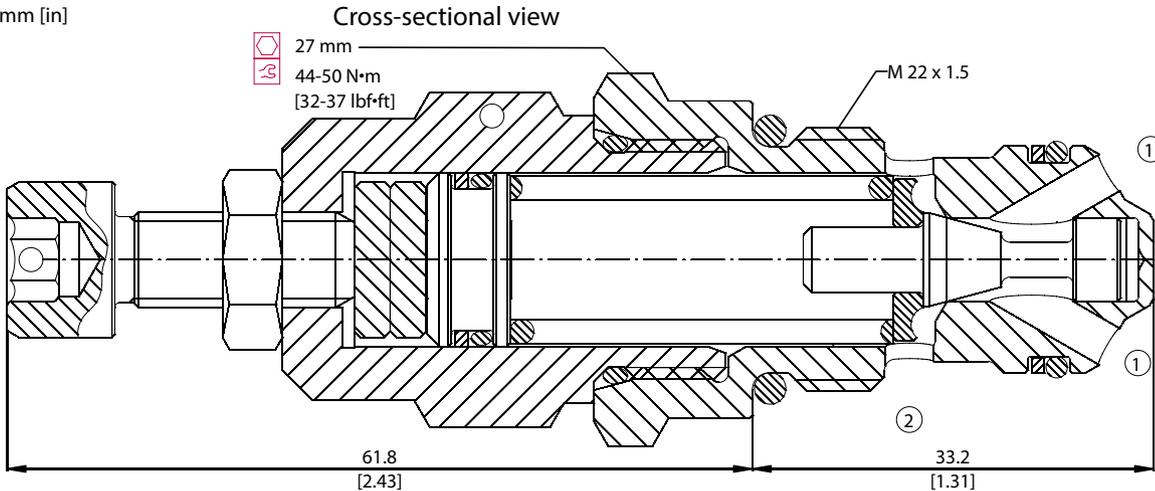


Specifications

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

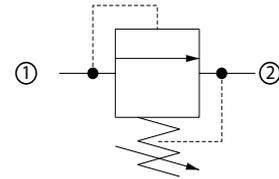
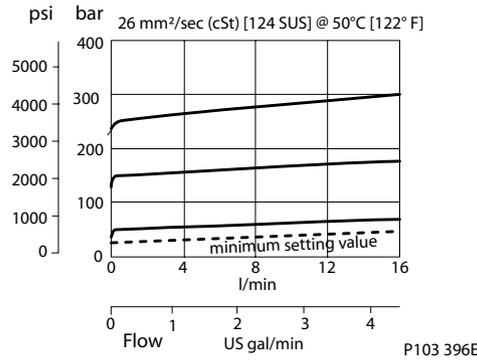
OPERATION

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



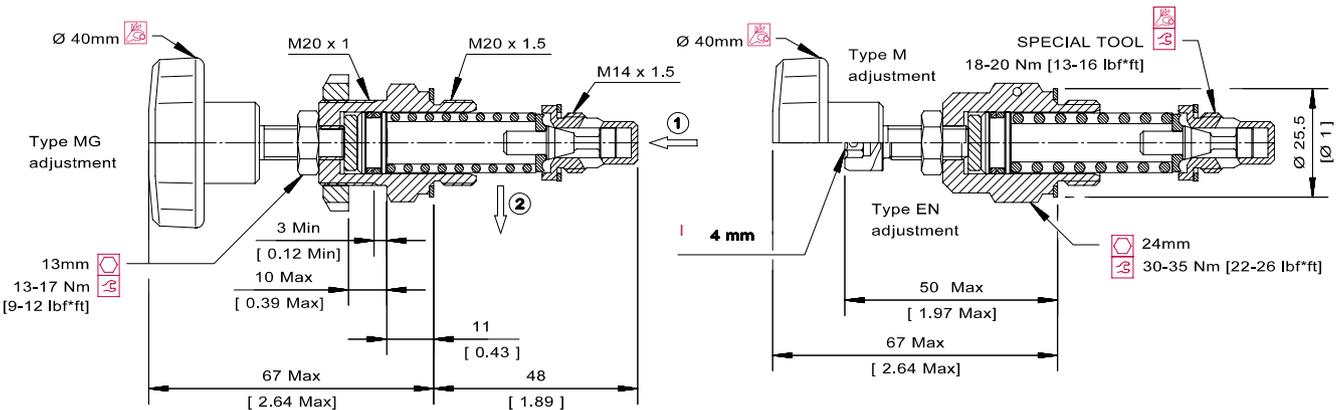
Specifications

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

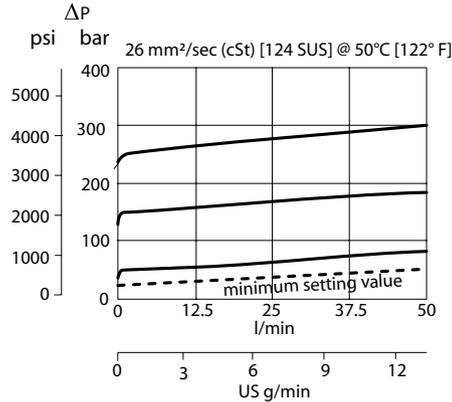
To order this valve with a specific factory setting, contact your Comatrol representative

OPERATION

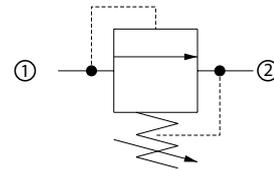
This is a direct-acting, poppet-type relief valve that relieves from 1 to 2. It features a highly damped poppet for smooth and stable response.

SPECIFICATIONS

Theoretical performance



Schematic



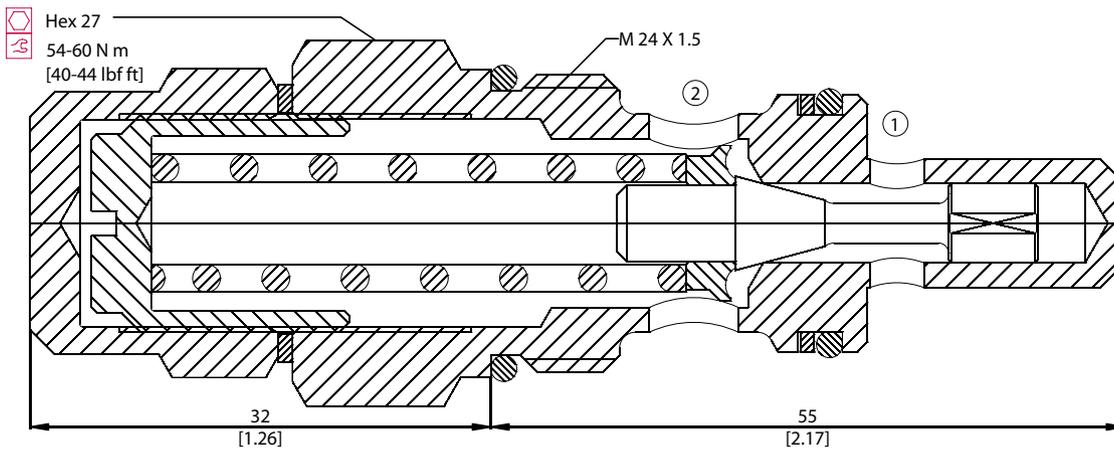
Specifications

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

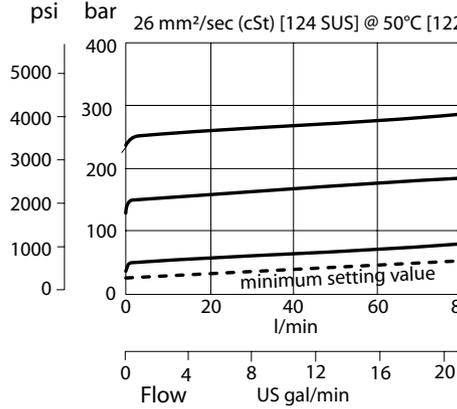
To order this valve with a specific factory setting, contact your Comatrol representative.

OPERATION

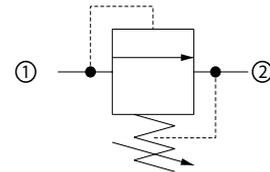
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SPECIFICATIONS

Theoretical performance



Schematic



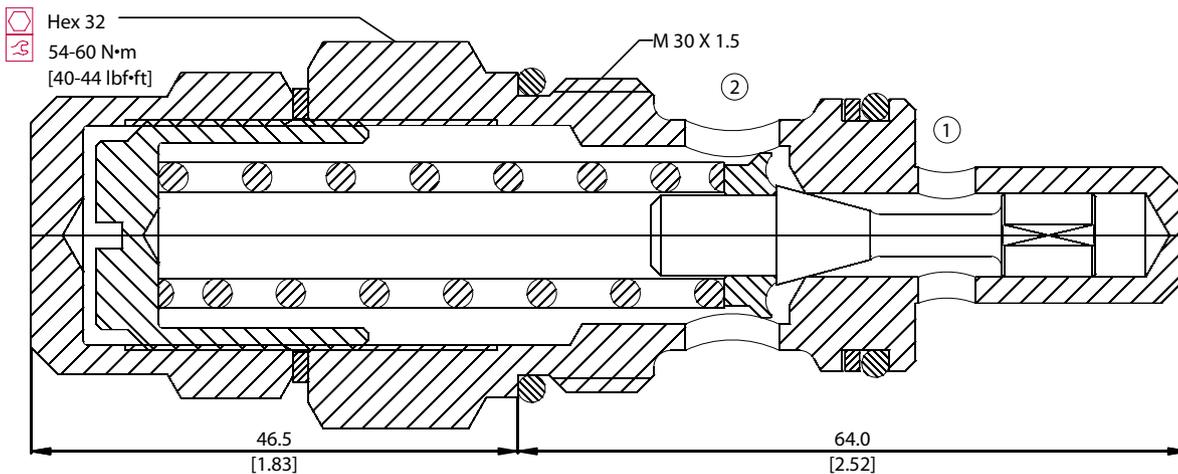
Specifications

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

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

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

Adjustment

E = Internal screw
 M = Handwheel

Setting range

1 = 25 - 80 bar [363-1160 psi]
 2 = 35 - 160 bar [508-2321 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
 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

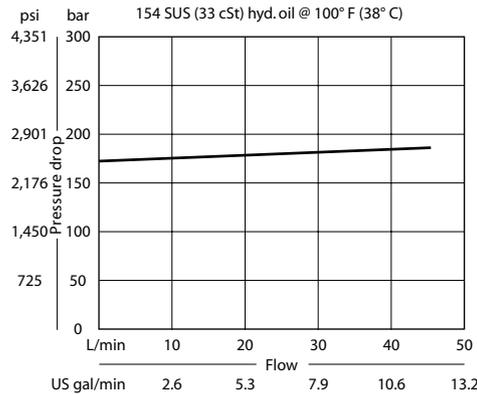
To order this valve with a specific factory setting, contact your Comatrol representative

OPERATION

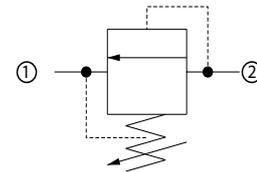
This is a direct acting differential area poppet type relief valve that relieves from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



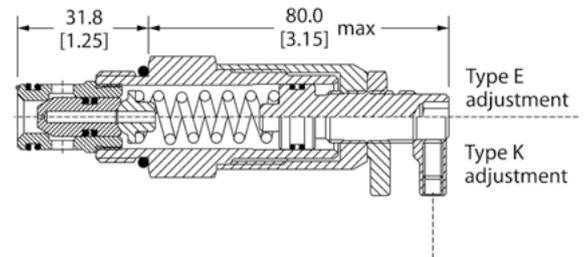
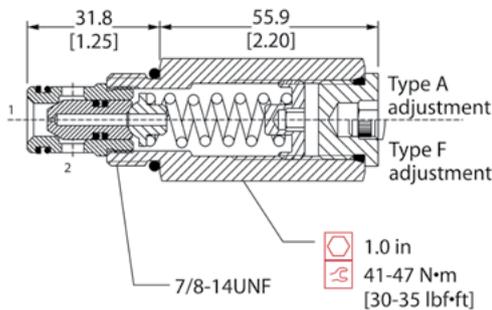
Specifications

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

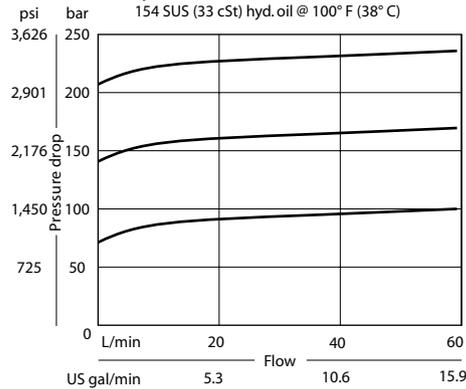
Adjustment ranges
 D = Standard bar psi
 69-345 [1000-5000]
 103 [1500]

OPERATION

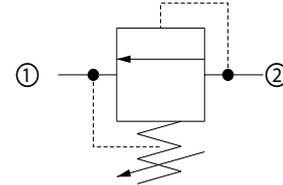
This is a direct acting differential area poppet type relief valve that relieves from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



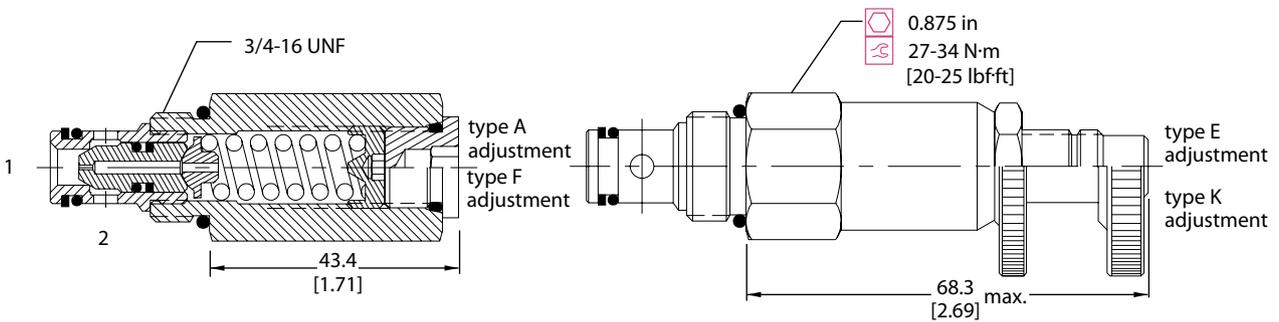
Specifications

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

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

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

- 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:

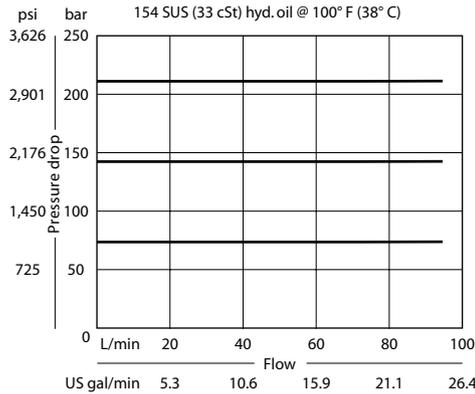
A = Standard	7-69 bar [100-1000] psi
B = Standard	28 bar [400] psi
C = Standard	14-138 bar [200-2000] psi
	69 bar [1000] psi
	35-248 bar [500-3600] psi
	103 bar [1500] psi

OPERATION

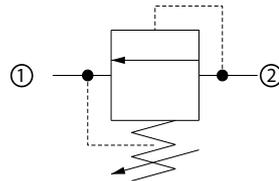
This is a direct acting differential area poppet type relief valve that relieves from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



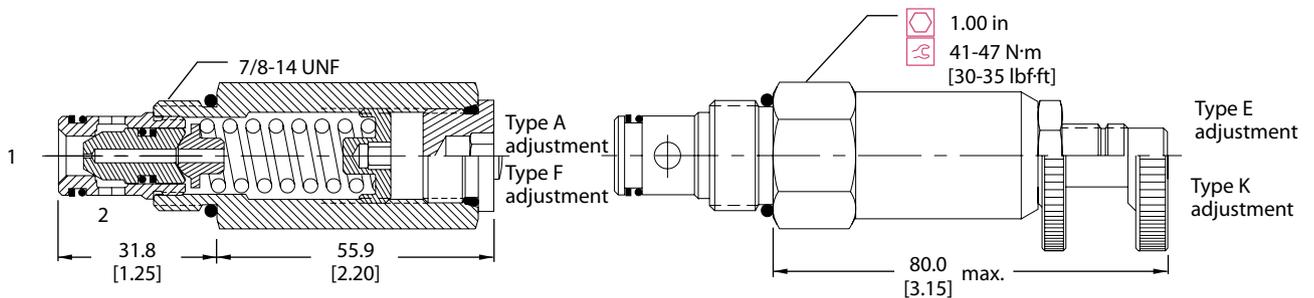
Specifications

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

Pressure range

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

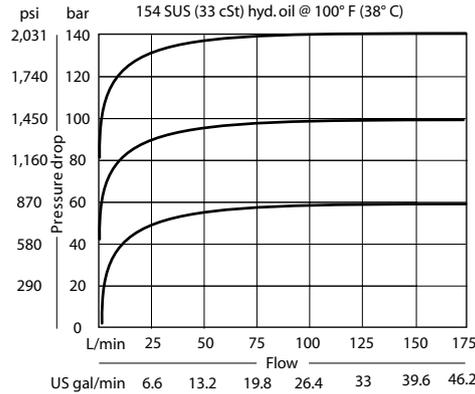
Adjustment option
 A = Internal
 E = External
 F = Tamper resistant
 K = Knob

OPERATION

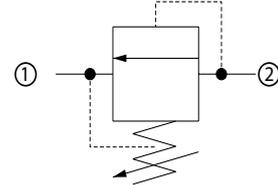
This is a direct acting differential area poppet type relief valve that relieves from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



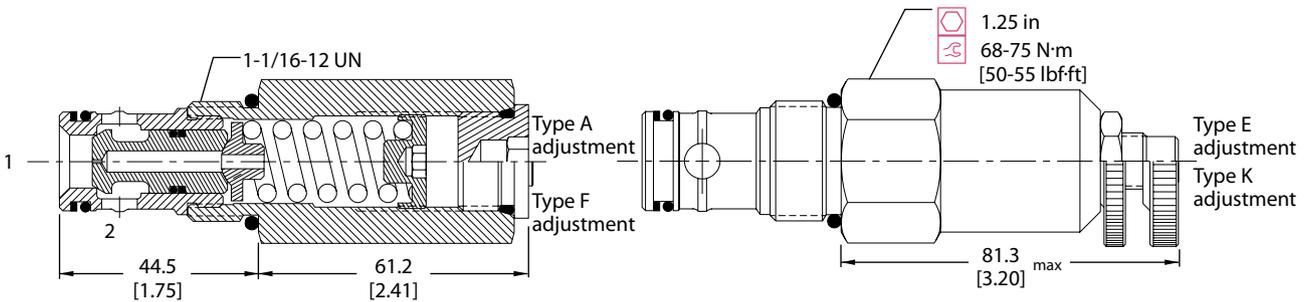
Specifications

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

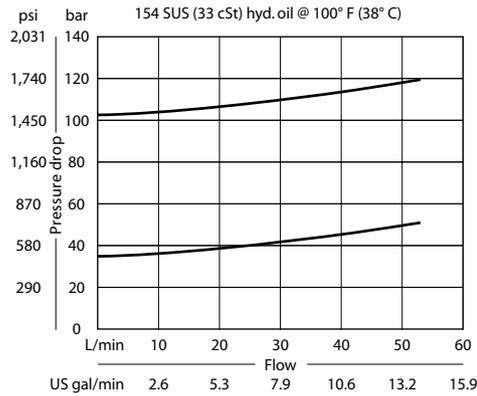
Code	bar	[psi]
A	7-69	[100-1000]
Standard	28	[400]
B	17-172	[250-2500]
Standard	69	[1000]
C	35-248	[500-3600]
Standard	103	[1500]

OPERATION

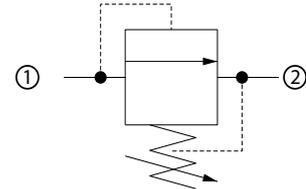
This is a direct acting spool-type relief valve that relieves from 1 to 2.

SPECIFICATIONS

Theoretical performance



Schematic



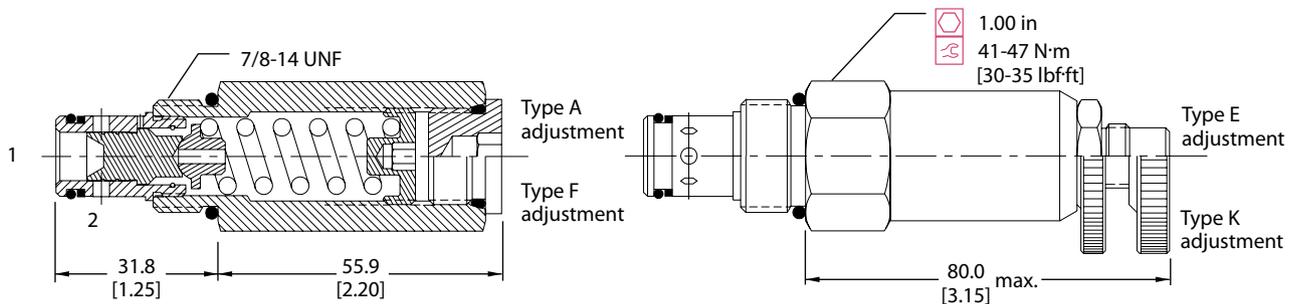
Specifications

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

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

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

Seals	B = Buna-N V = Viton	Seal kit	120015 120016	Crack pressure	Code x 10 = psi Example: 075 = 750 psi
Housing and ports	0 = No Housing DG3B = Al, 3/8 BSP DG4B = Al, 1/2 BSP 6S = Al, #6 SAE 8S = Al, #8 SAE	Housing P/N	No Housing SDC10-2-DG-3B SDC10-2-DG-4B CP10-2-6S CP10-2-8S	Pressure range	bar [psi]
Adjustment option	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]	

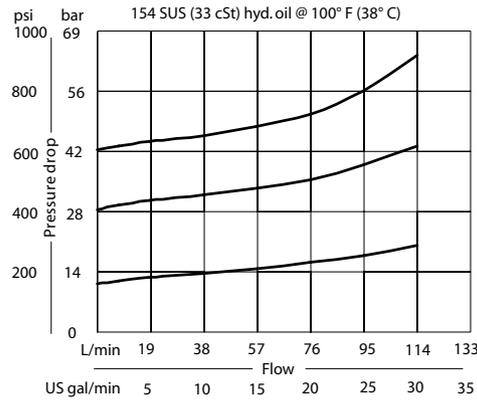
Other housings available

OPERATION

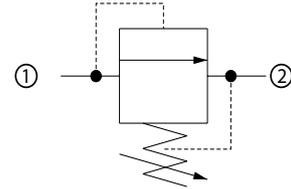
This is a direct acting spool-type relief valve that relieves from 1 to 2.

SPECIFICATIONS

Theoretical performance



Schematic



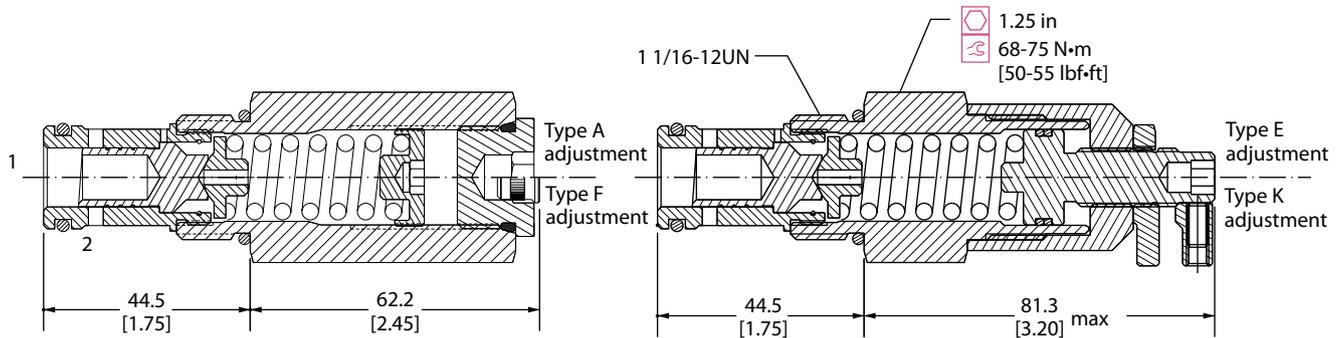
Specifications

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

DIMENSIONS

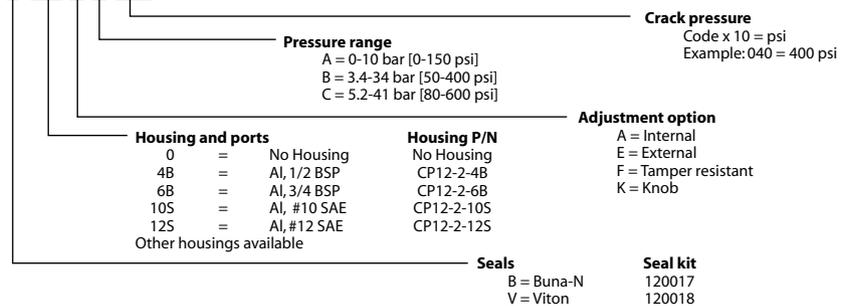
mm [in]

Cross-sectional view



ORDERING INFORMATION

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

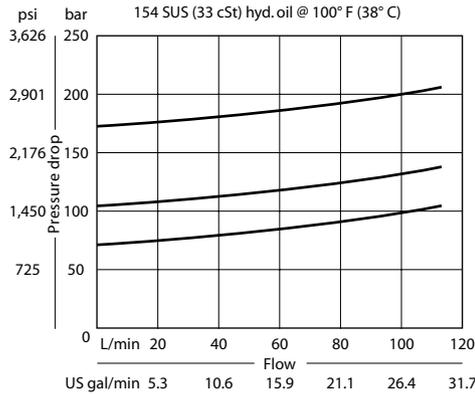


OPERATION

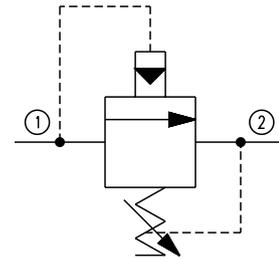
This is a pilot operated spool type relief valve that relieves pressure from 1 to 2.

SPECIFICATIONS

Theoretical performance



Schematic

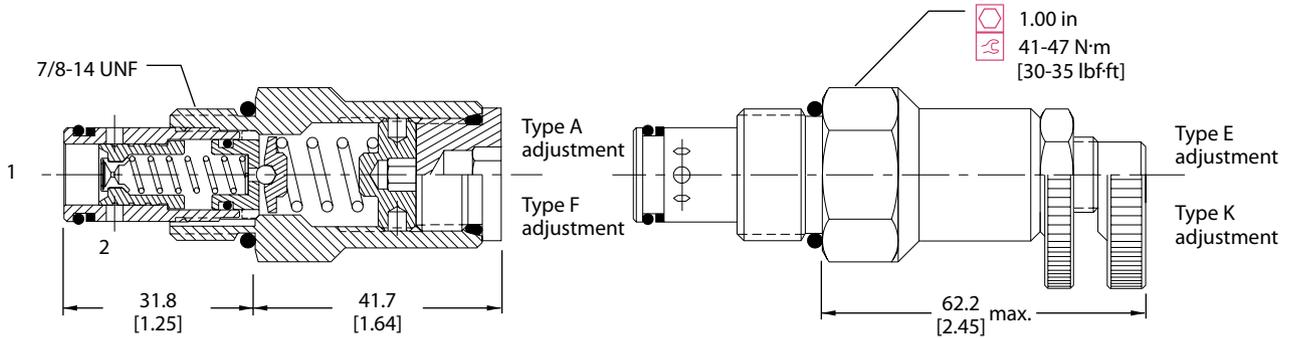


Specifications

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

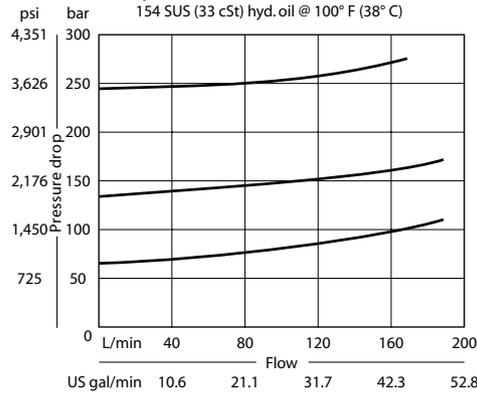
Code	bar	[psi]
A = Standard	14-69	[200-800]
B = Standard	28	[400]
B = Standard	14-103	[200-1500]
C = Standard	69	[1000]
C = Standard	28-207	[400-3000]
D = Standard	103	[1500]
D = Standard	28-345	[400-5000]

OPERATION

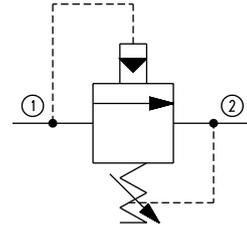
This valve relieves from 1 to 2 and is a pilot operated spool type relief.

SPECIFICATIONS

Theoretical performance



Schematic

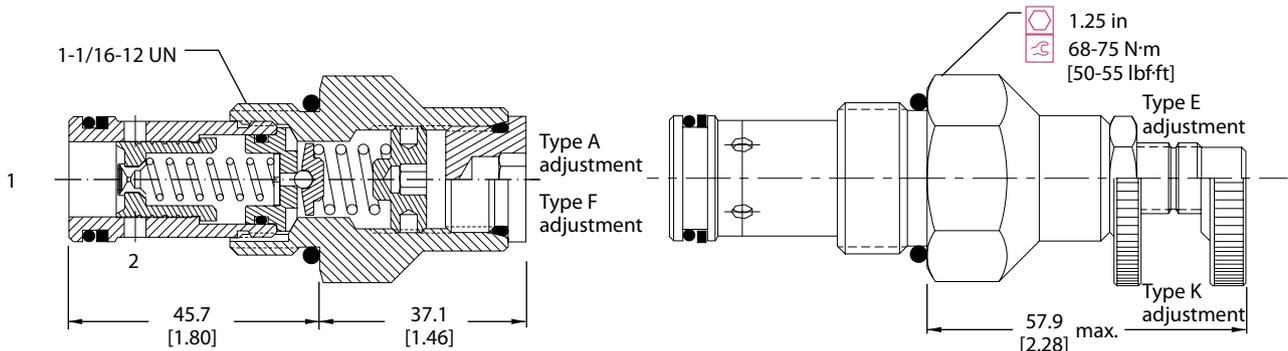


Specifications

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

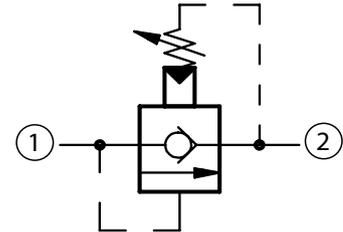
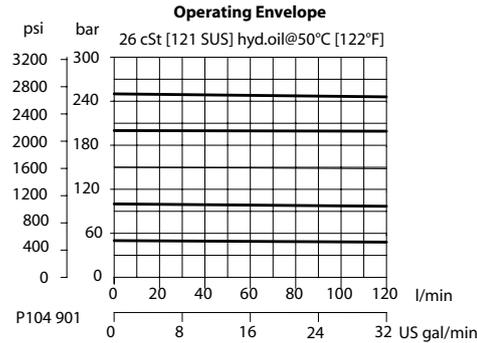
OPERATION

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

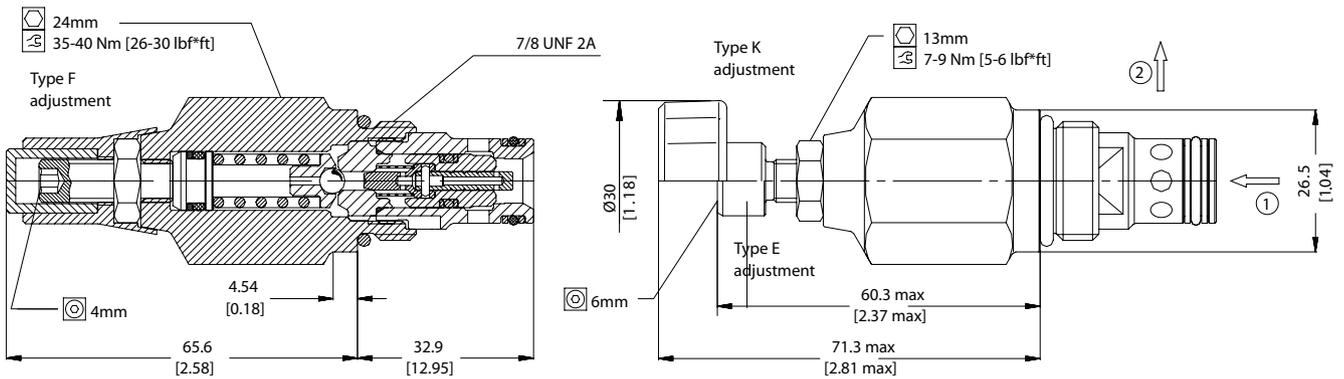


Specifications

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

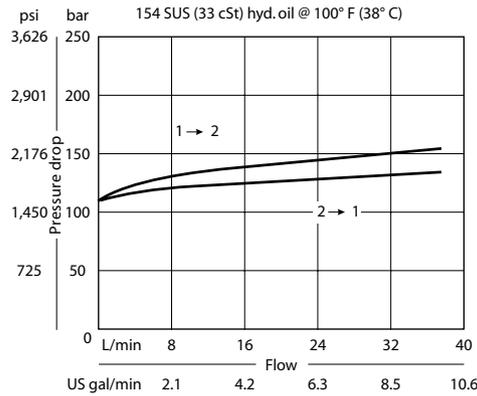
Body Nomenclature
 No Body
 CP10-2-6S
 CP10-2-8S
 SDC10-2-DG3B
 SDC10-2-DG4B

OPERATION

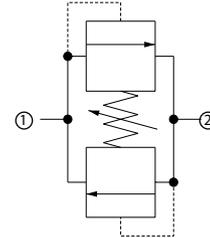
This is a bi-directional relief valve that relieves pressure from 1 to 2 and from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic

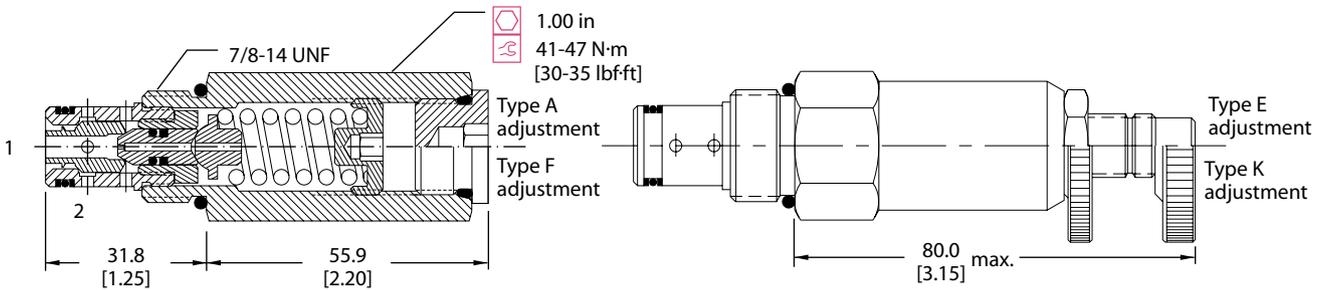


Specifications

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

DIMENSIONS

Cross-sectional view



ORDERING INFORMATION

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

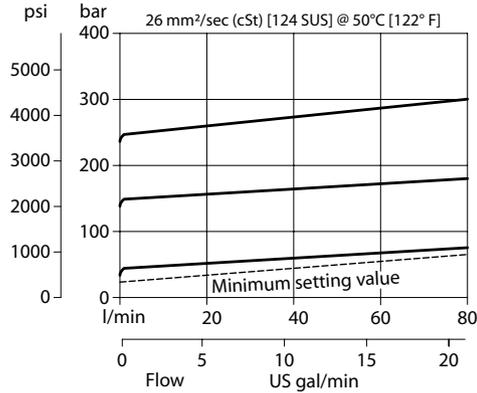
Seals		Seal kit		Crack pressure	
B = Buna-N		120073		Code x 10 = psi	
V = Viton		120074		Example: 150 = 1500 psi	
Housing and ports		Housing P/N		Pressure range	
0 = No Housing		No Housing		A = 7-41	bar [psi]
DG3B = Al, 3/8 BSP		SDC10-2-DG-3B		Standard 28	[100-600]
DG4B = Al, 1/2 BSP		SDC10-2-DG-4B		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]
Adjustment option					
A = Internal					
E = External					
F = Tamper resistant					
K = Knob					

OPERATION

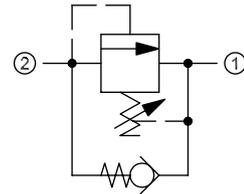
This is a direct-acting, differential area, poppet-type relief valve that relieves from 2 to 1 with an integral free-flow check from 1 to 2.

SPECIFICATIONS

Theoretical performance



Schematic



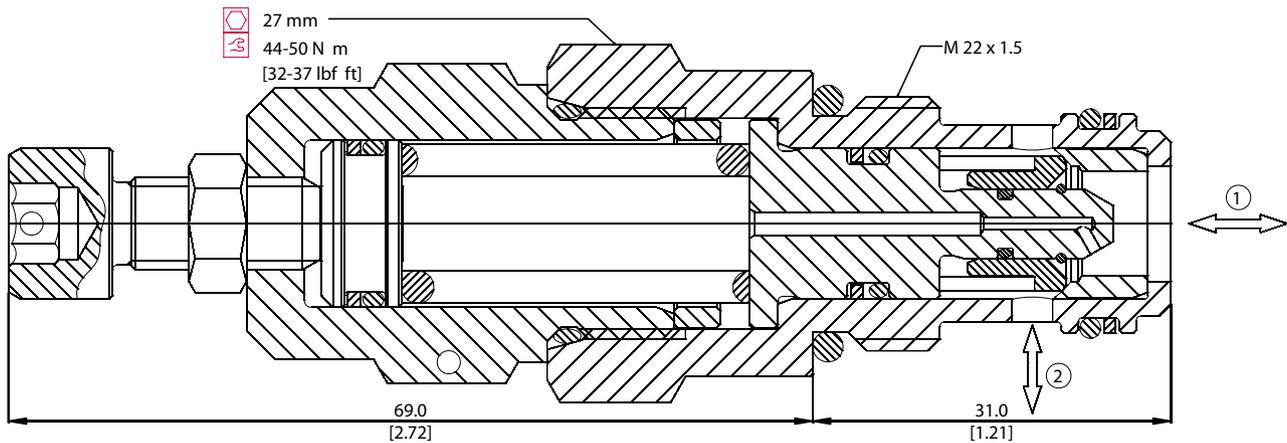
Specifications

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

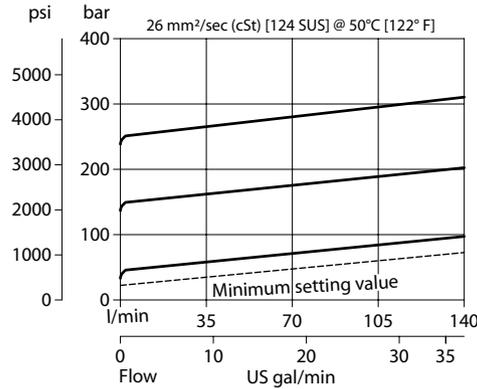
To order this valve with a specific factory setting, contact your Comatrol representative

OPERATION

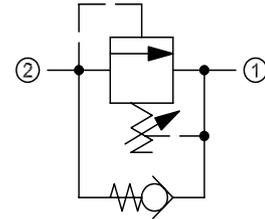
This is a direct-acting, differential area, poppet-type relief valve that relieves from 2 to 1 with an integral free-flow check from 1 to 2.

SPECIFICATIONS

Theoretical performance



Schematic

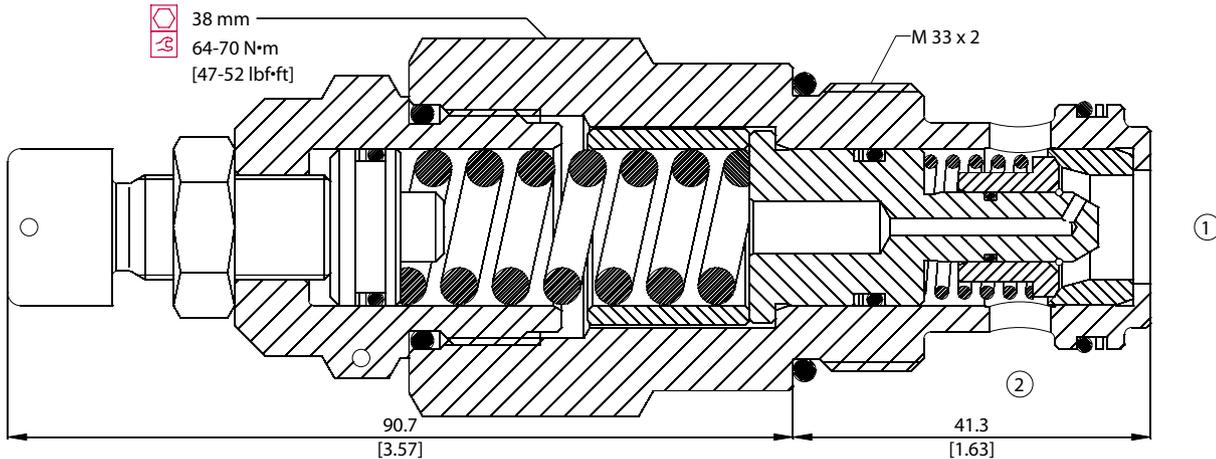


Specifications

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

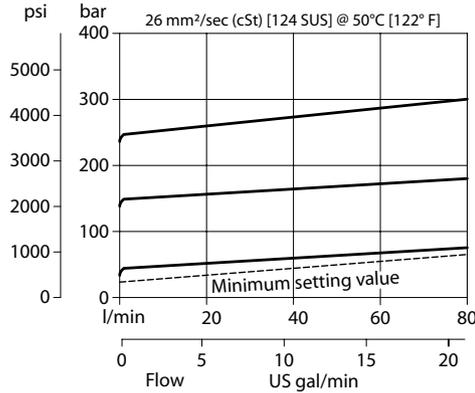
- No Housing
- NCS12/2-DG-1/2
- NCS12/2-DG-3/4
- NCS12/2-DG-8S
- NCS12/2-DG-12S

OPERATION

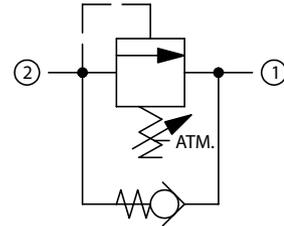
This is a direct-acting, differential area, atmospherically-vented, poppet-type relief valve that relieves from 2 to 1 with an integral free-flow check from 1 to 2.

SPECIFICATIONS

Theoretical performance



Schematic



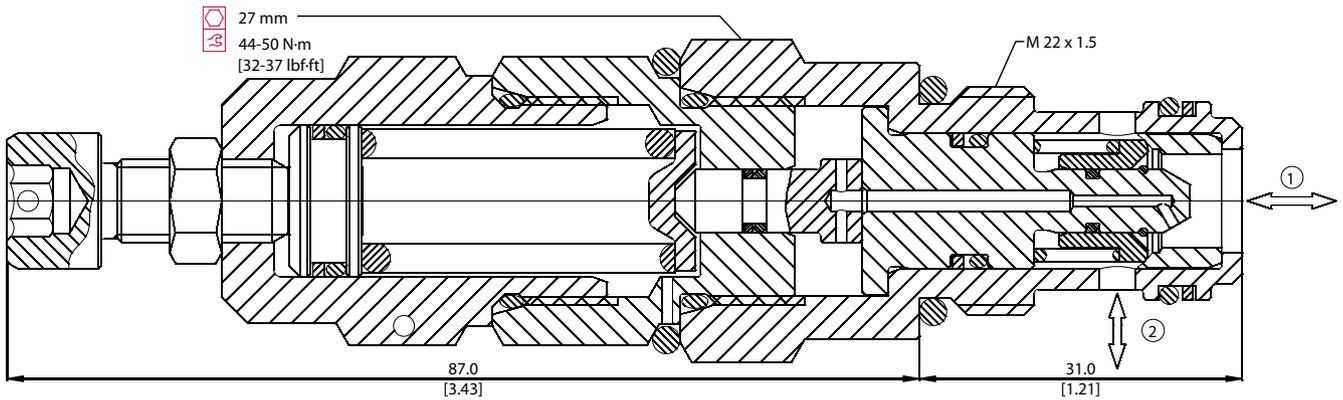
Specifications

Rated pressure	350 bar [5075 psi]
Rated flow	80 l/min [21 US gal/min]
Weight	0.29 kg [0.64 lb]
Cavity	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]	Seals	Seal Kit
	2 = 70 - 210 bar [1015 - 3046 psi]	V = Viton	230000380
3 = 105 - 350 bar [1523 - 5076 psi]	Omit = Buna-N	230000060	
		Housing and ports	Housing P/N
		00 = No Housing	No Housing
		DG3B = AL, 3/8 BSP	NCS06/2-DG-3/8
		DG4B = AL, 1/2 BSP	NCS06/2-DG-1/2
		DG6S = AL, #6 SAE	NCS06/2-DG-6S
		DG8S = AL, #8 SAE	NCS06/2-DG-8S
		Other housings available	

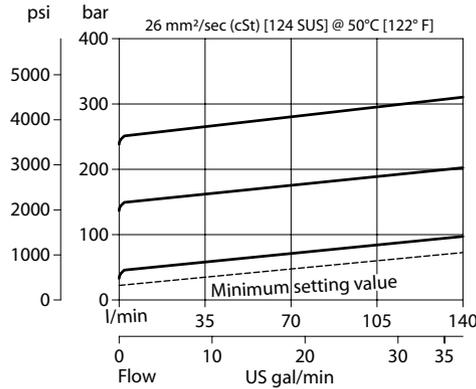
To order this valve with a specific factory setting, contact your Comatrol representative

OPERATION

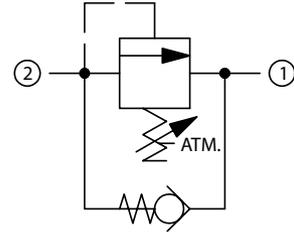
This is a direct-acting, differential area, atmospherically-vented, poppet-type relief valve that relieves from 2 to 1 with an integral free-flow check from 1 to 2.

SPECIFICATIONS

Theoretical performance



Schematic



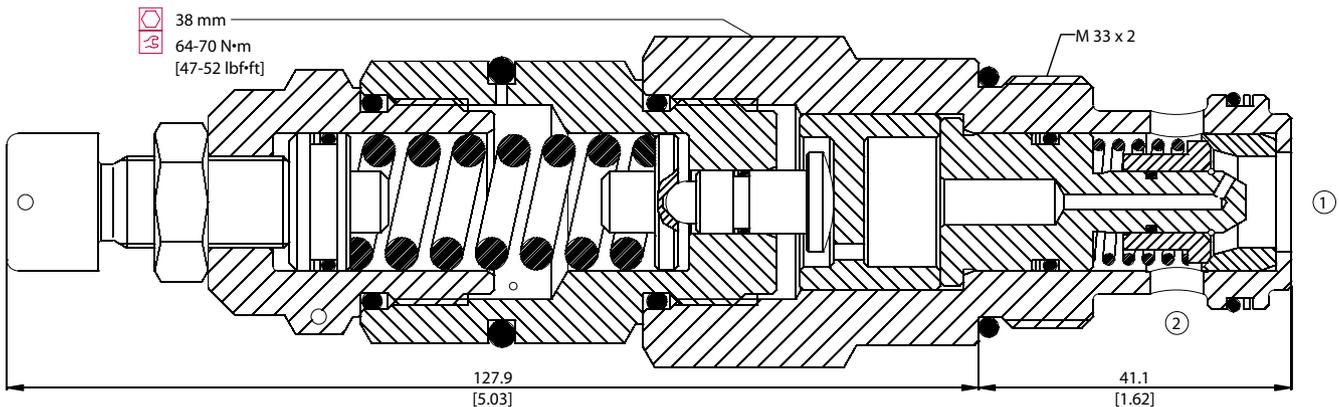
Specifications

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

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

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

	Seals	Seal Kit
	V = Viton	230000470
	Omit = Buna-N	230000120
	Housing and ports	Housing P/N
	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	
Setting range		
1 = 25 - 170 bar [363 - 2466 psi]		
2 = 70 - 270 bar [1015 - 3916 psi]		
3 = 105 - 350 bar [1523 - 5076 psi]		

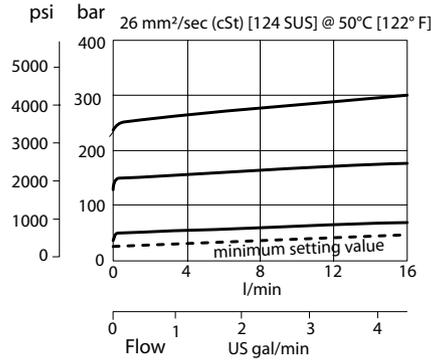
To order this valve with a specific factory setting, contact your Comatrol representative

OPERATION

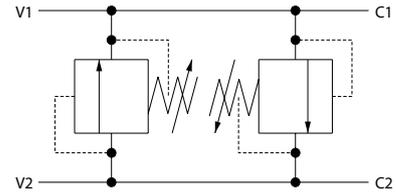
This valve is an inline cross relief. It uses two VME 06 direct-acting relief valves.

SPECIFICATIONS

Theoretical performance



Schematic



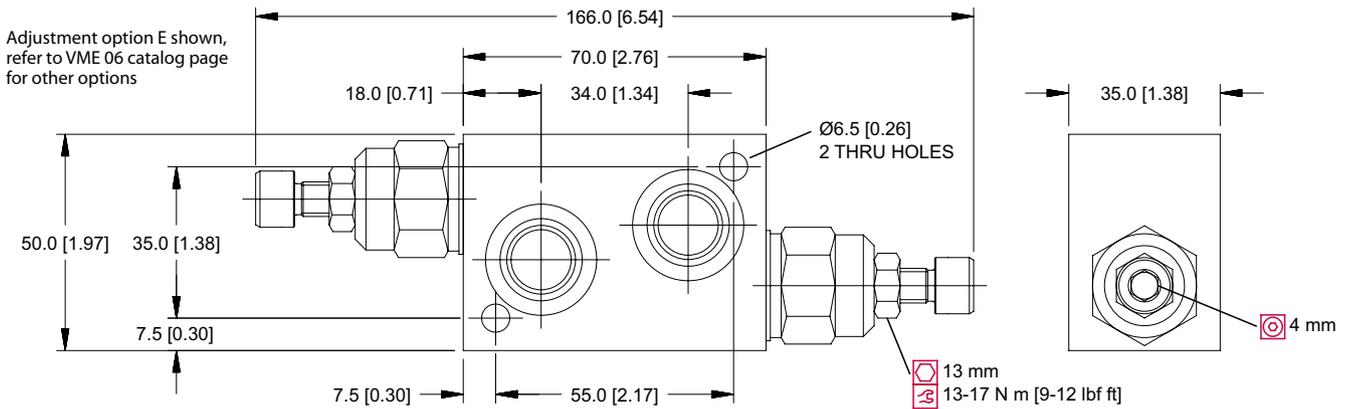
Specifications

Rated pressure	210 bar [3045 psi]
Rated flow	40 l/min [11 US gal/min]
Weight	1.11 kg [2.45 lb]
Cavity	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

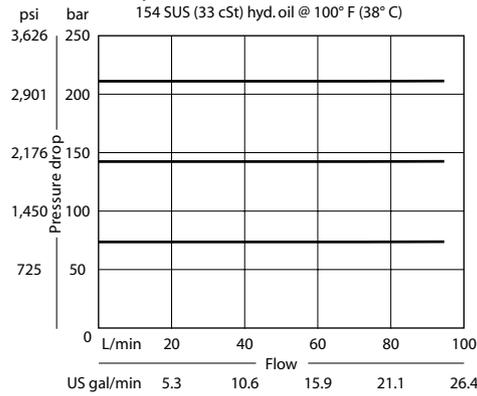
To order this valve with a specific factory setting, contact your Comatrol representative

OPERATION

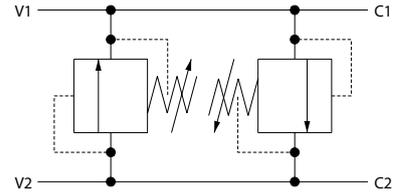
This valve is an inline cross relief. It uses two CP200-1 differential area relief valves.

SPECIFICATIONS

Theoretical performance



Schematic



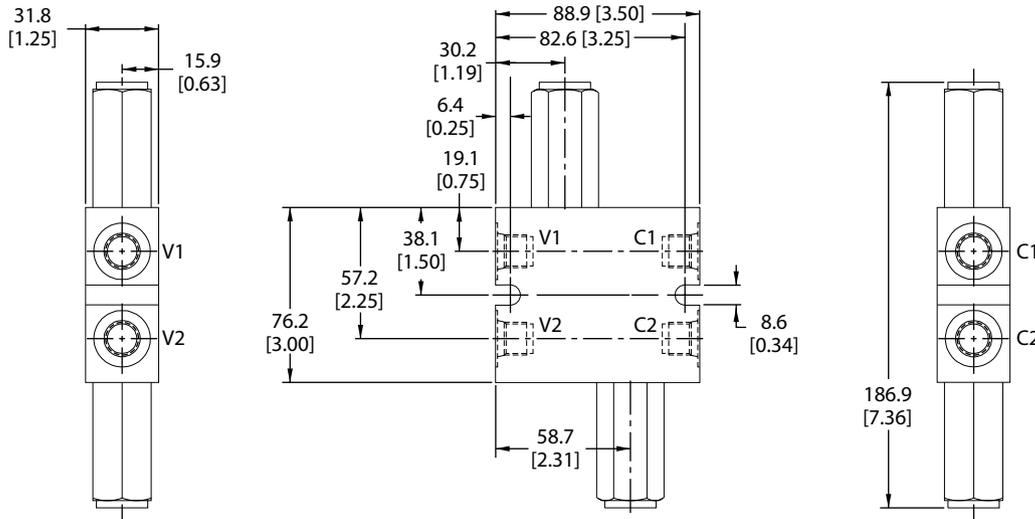
Specifications

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

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

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

Housing and ports

- 3B = Al, 3/8 BSP
 - 4B = Al, 1/2 BSP
 - 6S = Al, #6 SAE
 - 8S = Al, #8 SAE
- Other housings available

Housing P/N

- 221743
- 221744
- 220216
- 220217

Seals

- B = Buna-N
- V = Viton

- Seal kit 120072
- Seal kit 120161

Adjustment option

- A = Internal
- E = External
- F = Tamper resistant
- K = Knob

Crack pressure

Code x 10 = psi
 Example: 150 = 1500 psi

Pressure range

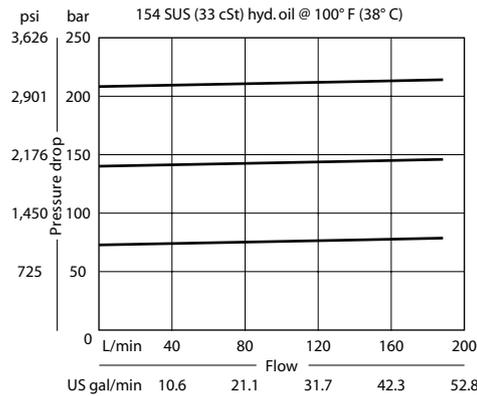
	bar	[psi]
A = Standard	7-55	[100-800]
B = Standard	28	[400]
B = Standard	17-138	[250-2000]
C = Standard	69	[1000]
C = Standard	41-248	[600-3600]
C = Standard	103	[1500]

OPERATION

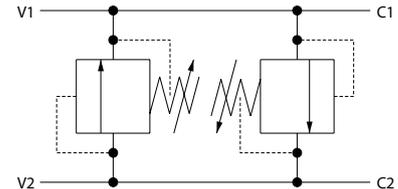
This valve is an inline cross relief. It uses two CP201-1 differential area relief valves.

SPECIFICATIONS

Theoretical performance



Schematic



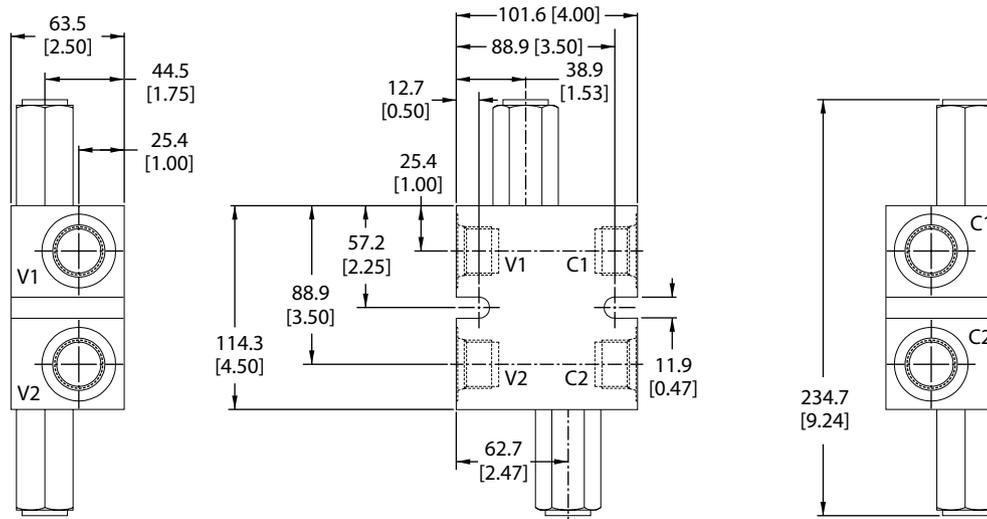
Specifications

Rated pressure	250 bar [3600 psi]
Rated flow	190 l/min [50 US gal/min]
Weight	2.25 kg [4.95 lb]
Cavity	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]

