

Comatrol

RESPONSIVENESS IN MOTION

Member of the Danfoss Group



Sequence & Unloading Valves

www.comatrol.com

Sequence	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP240-8	SDC10-3	Sequence Valve, 2-Way, Normally Closed	55 l/min [14 US gal/min]	210 bar [3000 psi]	SQ - 9
	CP241-8	CP12-3S			206 l/min [39 US gal/min]	206 bar [3000 psi]

Sequence	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP240-21	SDC10-3	Sequence Valve, Pilot Operated Spool	45 l/min [12 US gal/min]	350 bar [5075 psi]	SQ - 11
	CP241-21	CP12-3S			75 l/min [20 US gal/min]	350 bar [5075 psi]

Sequence	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP240-2	SDC10-3	Sequence Valve, 2-Way, Normally Closed, External Pilot, Internal Drain	35 l/min [9 US gal/min]	210 bar [3000 psi]	SQ - 13

Kick Down Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP240-22	SDC10-3	Sequence Valve, Kick-Down Type	45 l/min [12 US gal/min]	350 bar [5075 psi]	SQ - 14

Sequence	Model No.	Cavity	Description	Flow*	Pressure	Page
	VDP 06/NA	NCS06/3	Sequence Valve, 2-Way, Normally Open	25 l/min [7 US gal/min]	315 bar [4500 psi]	SQ - 15

* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

Sequence	Model No.	Cavity	Description	Flow*	Pressure	Page
	VDP 06/NC	NCS06/3	Sequence Valve, 2-Way, Normally Closed	25 l/min [7 US gal/min]	315 bar [4500 psi]	SQ - 16

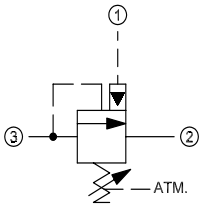
Sequence	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP240-5	SDC10-4	Sequence Valve, 2-Way, Normally Open	25 l/min [7 US gal/min]	210 bar [3000 psi]	SQ - 17

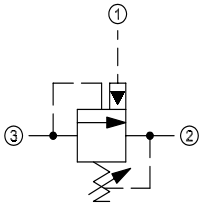
Sequence	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP240-1	SDC10-3	Sequence Valve, 3-Way	25 l/min [7 US gal/min]	210 bar [3000 psi]	SQ - 18

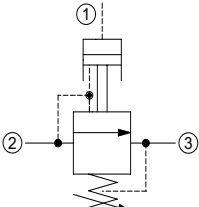
Sequence	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP240-9	SDC10-3	Sequence Valve, 3-Way	20 l/min [5 US gal/min]	210 bar [3000 psi]	SQ - 19

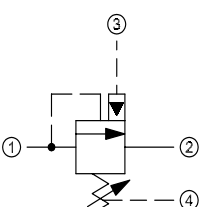
Sequence	Model No.	Cavity	Description	Flow*	Pressure	Page
	VDP 06/4201	NCS06/4	Sequence Valve, 3-Way	22 l/min [6 US gal/min]	315 bar [4500 psi]	SQ - 20

* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

Unloading	Model No.	Cavity	Description	Flow*	Pressure	Page
	VDB 06-CN	NCS06/3	Unloading Valve, Differential Area, Pilot Operated, Atmospheric Vented	80 l/min [21 US gal/min]	350 bar [5075 psi]	SQ- 21

Unloading	Model No.	Cavity	Description	Flow*	Pressure	Page
	VDB 06-EN	NCS06/3	Unloading Valve, Differential Area, Pilot Operated	80 l/min [21 US gal/min]	350 bar [5075 psi]	SQ- 22
	VDB 12-EN	NCS12/3		160 l/min [42 US gal/min]	350 bar [5075 psi]	SQ- 23

Unloading	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP240-30	SDC10-3	Unloading Valve, Pilot Operated	4 l/min [1 US gal/min]	240 bar [3500 psi]	SQ- 24

Unloading	Model No.	Cavity	Description	Flow*	Pressure	Page
	AUV 06	NCS06/4	Unloading Valve, Pilot Operated, Spool	50 l/min [13 US gal/min]	250 bar [3600 psi]	SQ- 25

* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

SEQUENCE VALVES

As the name implies, sequence valves control a sequence of operations. Sequence valves usually use a pressure signal to shift a spool, thereby opening or closing a flow path at a pre-set pressure.

Sequence valves



DIRECT-ACTING SEQUENCE VALVES

Direct-acting sequence valves are spool-type valves with a spring force holding the spool closed. When inlet pressure exceeds the spring setting, the spool shifts to direct flow to a second function.

Direct-acting sequence valves come in a variety of configurations:

- Internally-piloted with external drain
- Internally-piloted with internal drain
- Externally-piloted with internal drain

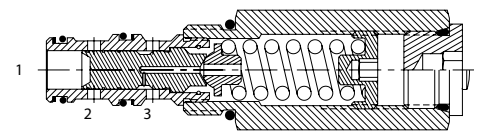
Direct-acting sequence valves are best suited for fairly constant flow and lower pressures.

PILOT-OPERATED SEQUENCE VALVES

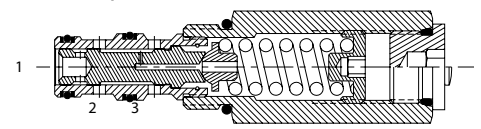
Also available are pilot-operated sequence valves that have an internal pilot and an external drain.

Pilot-operated sequence valves are best suited for higher and more widely varying flows, and higher pressures.

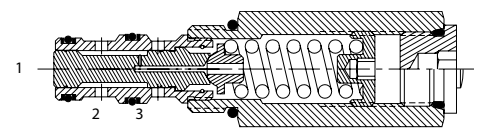
Internal-pilot with external drain



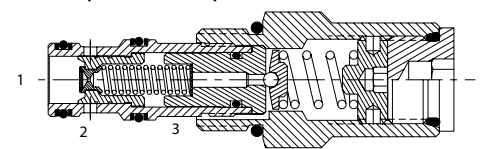
Internal-pilot with internal drain



External-pilot with internal drain



Pilot operated sequence valve

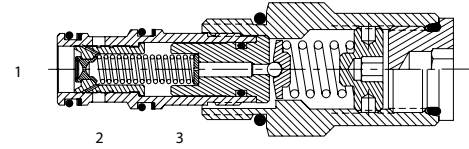


KICK-DOWN SEQUENCE VALVES

Another type of pilot-operated sequence valve is commonly known as a kick-down sequence valve. The kick-down sequence valve blocks flow at 1 until sufficient pressure exists 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. The spool will remain open until flow through the valve is shut off.

A common application for a kick-down sequence valve is as a safety device in circuits where overloading or overheating could cause damage if pressure is held for an extended period of time.

Kick-down sequence valve



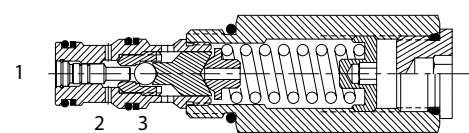
UNLOADING VALVES

Another type of sequence valve is commonly known as an unloading valve. The unloading valve blocks flow at 2 until sufficient pressure exists at 1 to pilot the poppet open against the pre-determined spring setting and allow flow from 2 to 3. If the pressure at 1 drops below the pilot ratio value multiplied by the pre-determined spring setting the valve will close, blocking flow at 2.

Various pilot ratio values are available; consult catalog sheets for details.

An unloading valve is typically used to *unload* a pump outlet to tank at a minimum pressure drop, resulting in higher system efficiencies with less heat generation.

Unloading valve



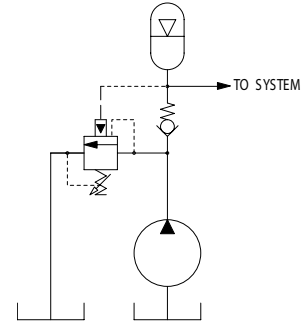
APPLICATIONS

Unloading valves

Common applications for unloading valves include:

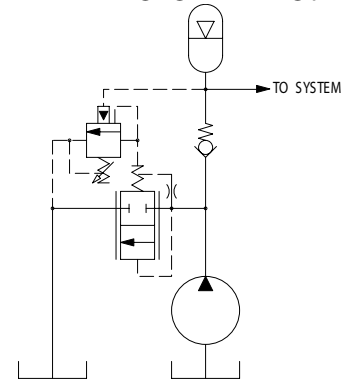
- Pump unloading in an accumulator charging system

Accumulator charging/unloading valve



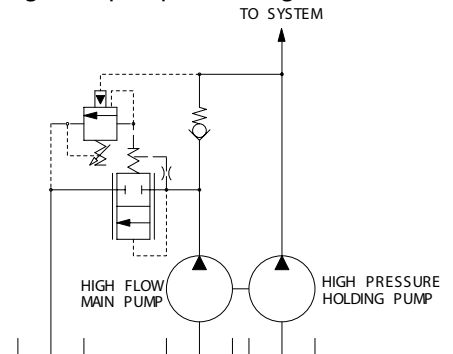
- For higher flow rates the unloading valve may be used to pilot a larger logic element

Accumulator charging/unloading pilot valve



- Pump unloading in a 2 pump high-low circuit

High-low pump unloading



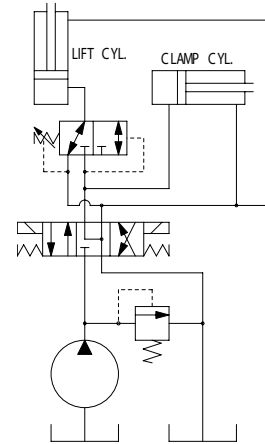
APPLICATIONS
 (continued)

Sequence valves

Both direct-acting and pilot-operated sequence valves have many common applications including:

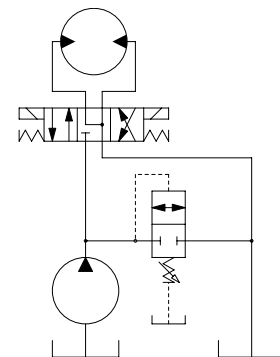
- Providing a sequenced series of operations such as in a clamp and lift circuit

Clamp & lift circuit



- Use as a relief valve where the return line has high or varying backpressure. The independent spring chamber drain line provides a relief setting unaffected by downstream pressure.

Sequence valve as relief

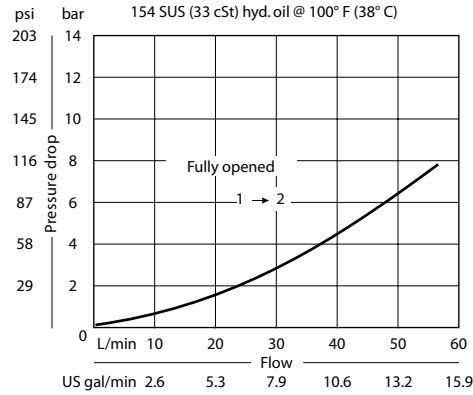


OPERATION

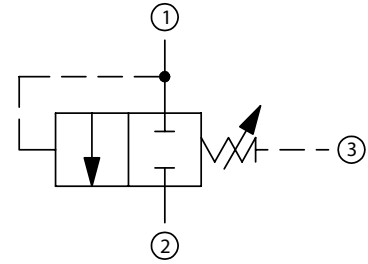
Valve blocks flow from 1 to 2 until sufficient pressure is applied at 1

SPECIFICATIONS

Theoretical performance



Schematic



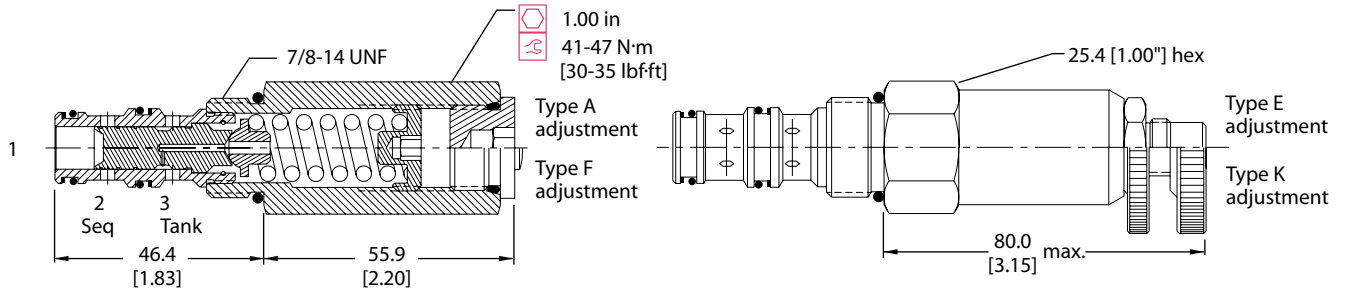
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	55 l/min [14 US gal/min]
Weight	0.26 kg [0.57 lb]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP240 - 8 - B - 6S - A - C-050

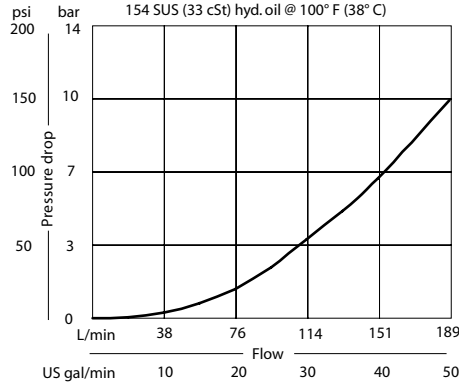
<p>Seals B = Buna-N V = Viton</p> <p>Housing and ports 0 = No Housing SE3B = Al, 3/8 BSP SE4B = Al, 1/2 BSP 6S = Al, #6 SAE 8S = Al, #8 SAE Other housings available</p> <p>Adjustment option A = Internal E = External F = Tamper resistant K = Knob</p>	<p>Seal kit 120027 120028</p> <p>Housing P/N No Housing SDC10-3-SE-3B SDC10-3-SE-4B CP10-3-6S CP10-3-8S</p>	<p>Crack pressure Code x 10 = psi Example: 100 = 1000 psi</p> <p>Pressure range</p> <table border="0"> <tr> <td>A =</td> <td>4-28</td> <td>bar</td> <td>[psi]</td> </tr> <tr> <td>Std. setting</td> <td>17</td> <td></td> <td>[250]</td> </tr> <tr> <td>B =</td> <td>5-55</td> <td></td> <td>[75-800]</td> </tr> <tr> <td>Std. setting</td> <td>28</td> <td></td> <td>[400]</td> </tr> <tr> <td>C =</td> <td>7-97</td> <td></td> <td>[100-1400]</td> </tr> <tr> <td>Std. setting</td> <td>69</td> <td></td> <td>[1000]</td> </tr> <tr> <td>D =</td> <td>34-166</td> <td></td> <td>[500-2400]</td> </tr> <tr> <td>Std. setting</td> <td>103</td> <td></td> <td>[1500]</td> </tr> </table>	A =	4-28	bar	[psi]	Std. setting	17		[250]	B =	5-55		[75-800]	Std. setting	28		[400]	C =	7-97		[100-1400]	Std. setting	69		[1000]	D =	34-166		[500-2400]	Std. setting	103		[1500]
A =	4-28	bar	[psi]																															
Std. setting	17		[250]																															
B =	5-55		[75-800]																															
Std. setting	28		[400]																															
C =	7-97		[100-1400]																															
Std. setting	69		[1000]																															
D =	34-166		[500-2400]																															
Std. setting	103		[1500]																															

OPERATION

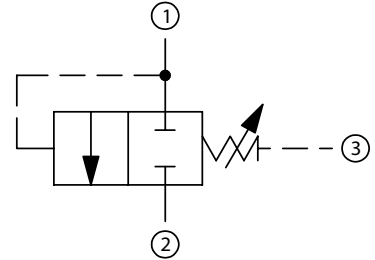
Valve blocks flow from 1 to 2 until sufficient pressure is applied at 1.

SPECIFICATIONS

Theoretical performance



Schematic



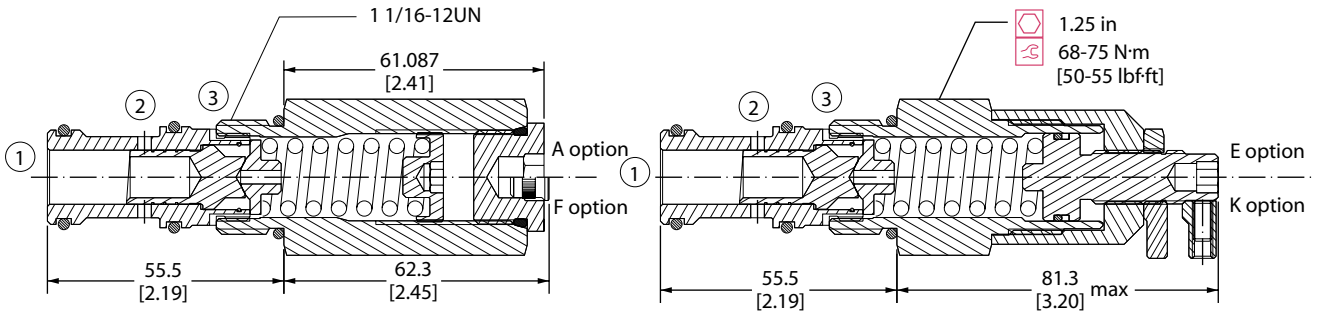
Specifications

Rated pressure	206 bar [3000 psi]
Rated flow at 7 bar [100 psi]	150 l/min [39 US gal/min]
Weight	0.41 kg [0.90 lb]
Cavity	CP12-3S

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP241-8-B-10S-A-C-050

Seals
 B= Buna-N
 V= Viton

Seal kit
 120680
 120681

Pressure range
 A = 1-10 bar [13-150 psi]
 B = 3.4-28 bar [50-400 psi]
 C = 5.5-41 bar [80-600 psi]

Pressure setting
 Code x 10psi (0.69 bar)
 Example: 050 = 500 psi (35 bar)

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

Housing P/N
 No Housing
 CP12-3S-4B/2B
 CP12-3S-6B/2B
 CP12-3S-10S/4S
 CP12-3S-12S/4S

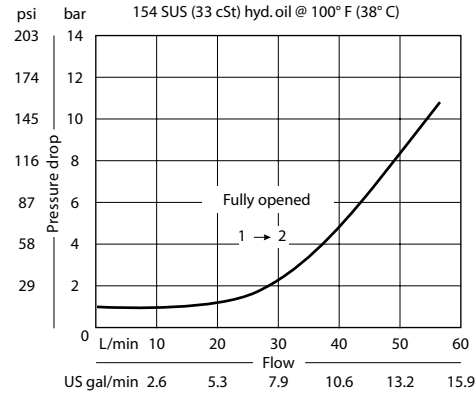
Adjustment option
 A = Internal
 E = External
 F = Tamper resistant
 K = Knob

OPERATION

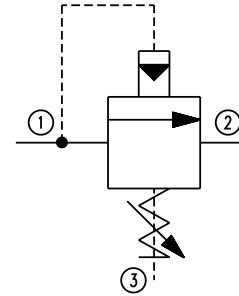
Valve is a pilot-operated sequence valve that blocks flow from 1 to 2 until sufficient pressure is applied at 1.

SPECIFICATIONS

Theoretical performance



Schematic



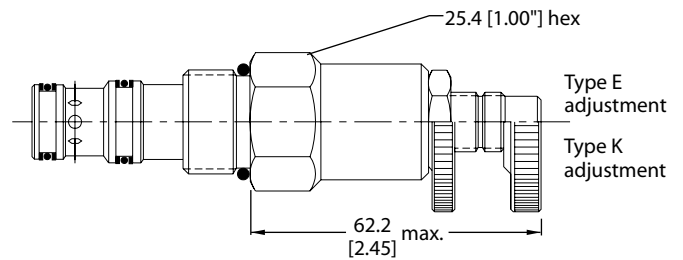
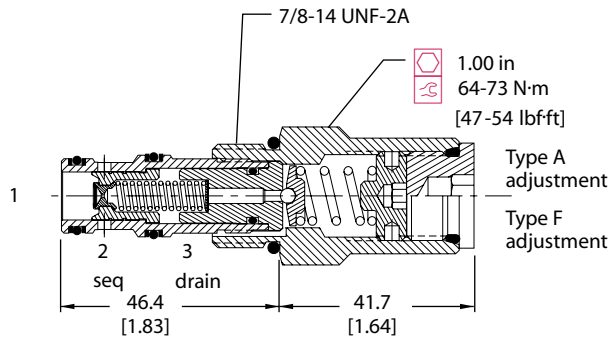
Specifications

Rated pressure	350 bar [5075 psi]
Rated flow at 7 bar [100 psi]	45 l/min [12 US gal/min]
Weight	0.23 kg [0.51 lb]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP240 - 21 - B - 6S - A - C - 150

- Seals**
 B = Buna-N
 V = Viton
- Housing and ports**
 0 = No Housing
 SE3B = Al, 3/8 BSP
 SE4B = 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**
 120009
 120010
- Housing P/N**
 No Housing
 SDC10-3-SE-3B
 SDC10-3-SE-4B
 CP10-3-6S
 CP10-3-8S

- Crack pressure**
 Code x 10 = psi
 Example: 150 = 1500 psi
 - Pressure range**
- | | bar | [psi] |
|--------------|--------|------------|
| A = | 14-55 | [200-800] |
| Std. setting | 28 | [400] |
| B = | 21-103 | [300-1500] |
| Std. setting | 69 | [1000] |
| C = | 28-207 | [400-3000] |
| Std. setting | 103 | [1500] |
| D = | 28-345 | [400-5000] |
| Std. setting | 103 | [1500] |

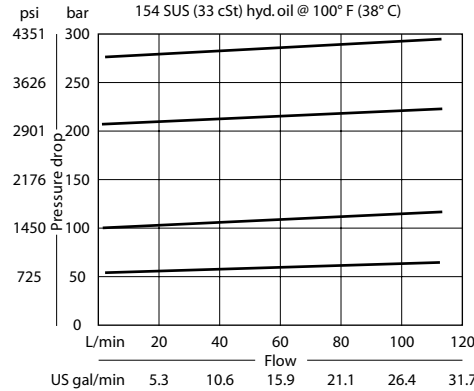
SQ - Sequence Valves
 CP240-21

OPERATION

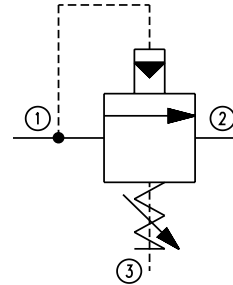
Valve is a pilot-operated sequence valve that blocks flow from 1 to 2 until sufficient pressure is applied at 1.

SPECIFICATIONS

Theoretical performance



Schematic



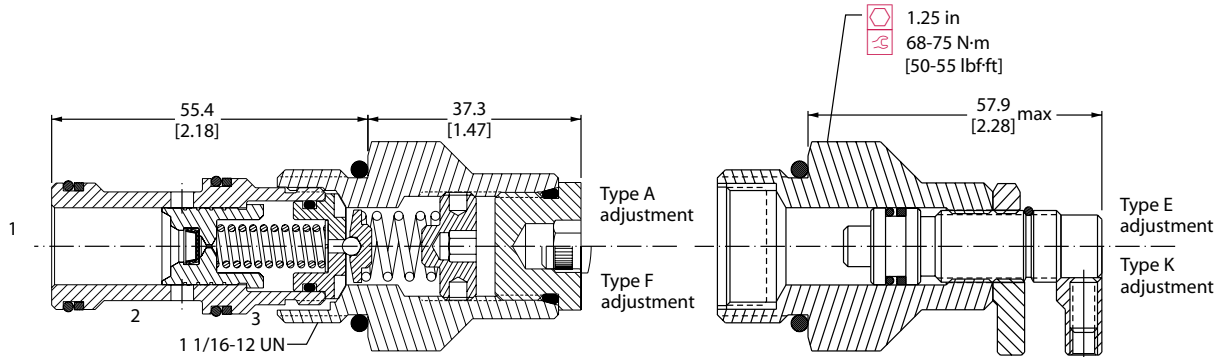
Specifications

Rated pressure	350 bar [5075 psi]
Rated flow at 7 bar [100 psi]	75 l/min [20 US gal/min]
Weight	0.17 kg [0.37 lb]
Cavity	CP12-3S

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP241 - 21 - B - 6S - A - C - 150

Seals
 B = Buna-N
 V = Viton

Seal kit
 120335
 120336

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

Housing P/N
 No Housing
 CP12-3S-4B/2B
 CP12-3S-6B/2B
 CP12-3S-10S/4S
 CP12-3S-12S/4S

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

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

Pressure range

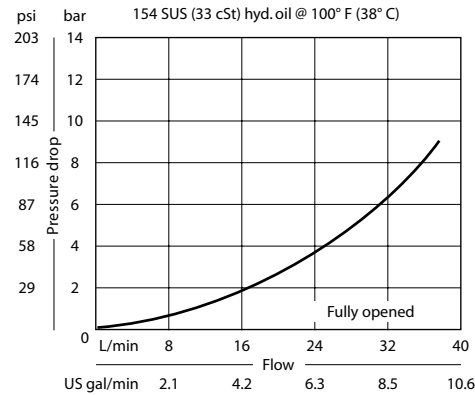
A =	14-55	[200-800]
Standard	28	[400]
B =	21-103	[300-1500]
Standard	69	[1000]
C =	28-207	[400-3000]
Standard	103	[1500]
D =	28-345	[400-5000]
Standard	103	[1500]

OPERATION

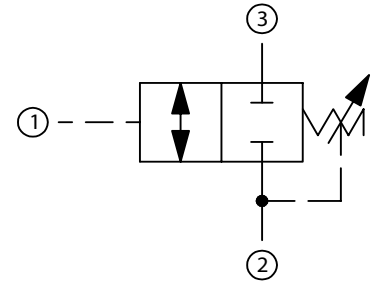
Valve blocks between 2 and 3 until sufficient pilot pressure is applied at 1 to open the valve. Note that pressure at 2 is additive to the spring setting.

SPECIFICATIONS

Theoretical performance



Schematic



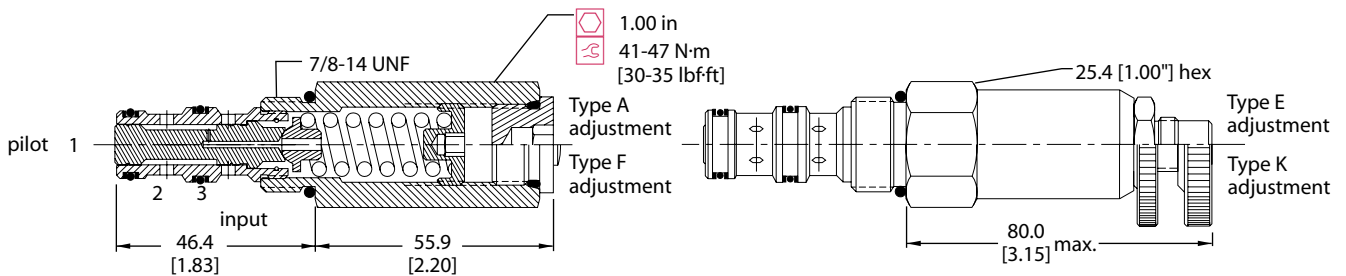
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	35 l/min [9 US gal/min]
Weight	0.24 kg [0.52 lb]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP240 - 2 - B - 6S - A - C - 100

Seals
 B = Buna-N
 V = Viton

Housing and ports
 0 = No Housing
 SE3B = Al, 3/8 BSP
 SE4B = 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
 120009
 120010

Housing P/N
 No Housing
 SDC10-3-SE-3B
 SDC10-3-SE-4B
 CP10-3-6S
 CP10-3-8S

Crack pressure
 Code x 10 = psi
 Example: 100 = 1000 psi

Pressure range

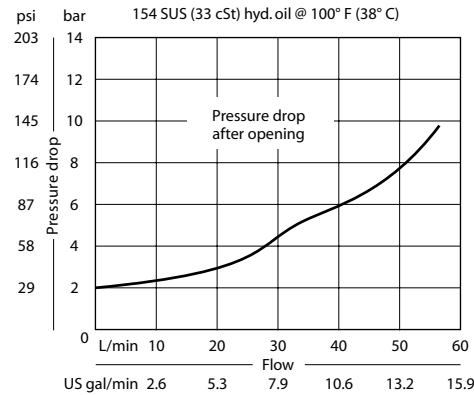
	bar	[psi]
A =	4-28	[50-400]
Std. setting	17	[250]
B =	5-55	[75-800]
Std. setting	28	[400]
C =	7-97	[100-1400]
Std. setting	69	[1000]
D =	34-166	[500-2400]
Std. setting	103	[1500]

OPERATION

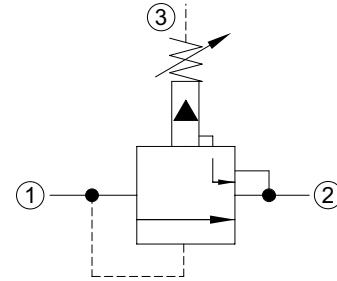
This is a “kick-down” type sequence valve that blocks flow from 1 to 2 until sufficient pressure is applied at 1. Once open, the valve remains open until flow is completely shut off.

SPECIFICATIONS

Theoretical performance



Schematic



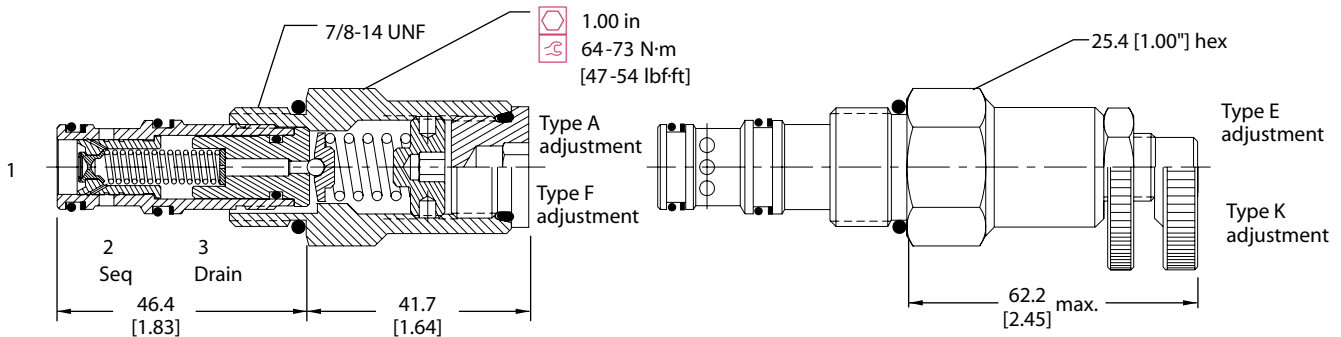
Specifications

Rated pressure	350 bar [5075 psi]
Rated flow at 7 bar [100 psi]	45 l/min [12 US gal/min]
Weight	0.19 kg [0.42 lb]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP240 - 22 - B - 6S - A - C - 150

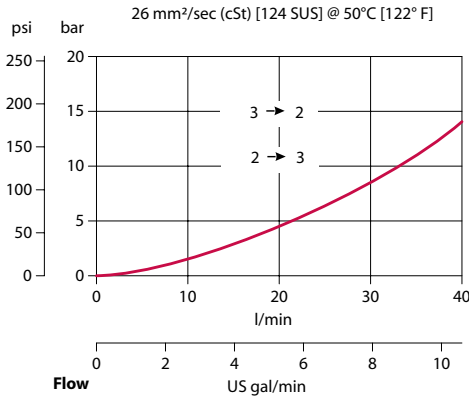
<p>Seals B = Buna-N V = Viton</p> <p>Housing and ports 0 = No Housing SE3B = Al, 3/8 BSP SE4B = Al, 1/2 BSP 6S = Al, #6 SAE 8S = Al, #8 SAE Other housings available</p> <p>Adjustment option A = Internal E = External F = Tamper resistant K = Knob</p>	<p>Seal kit 120027 120028</p> <p>Housing P/N No Housing SDC10-3-SE-3B SDC10-3-SE-4B CP10-3-6S CP10-3-8S</p>	<p>Crack pressure Code x 10 = psi Example: 150 = 1500 psi</p> <p>Pressure range</p> <table border="1"> <thead> <tr> <th></th> <th>bar</th> <th>[psi]</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>14-55</td> <td>[200-800]</td> </tr> <tr> <td>Standard</td> <td>28</td> <td>[400]</td> </tr> <tr> <td>B</td> <td>21-103</td> <td>[300-1500]</td> </tr> <tr> <td>Standard</td> <td>69</td> <td>[1000]</td> </tr> <tr> <td>C</td> <td>28-207</td> <td>[400-3000]</td> </tr> <tr> <td>Standard</td> <td>103</td> <td>[1500]</td> </tr> <tr> <td>D</td> <td>28-345</td> <td>[400-5000]</td> </tr> <tr> <td>Standard</td> <td>103</td> <td>[1500]</td> </tr> </tbody> </table>		bar	[psi]	A	14-55	[200-800]	Standard	28	[400]	B	21-103	[300-1500]	Standard	69	[1000]	C	28-207	[400-3000]	Standard	103	[1500]	D	28-345	[400-5000]	Standard	103	[1500]
	bar	[psi]																											
A	14-55	[200-800]																											
Standard	28	[400]																											
B	21-103	[300-1500]																											
Standard	69	[1000]																											
C	28-207	[400-3000]																											
Standard	103	[1500]																											
D	28-345	[400-5000]																											
Standard	103	[1500]																											

OPERATION

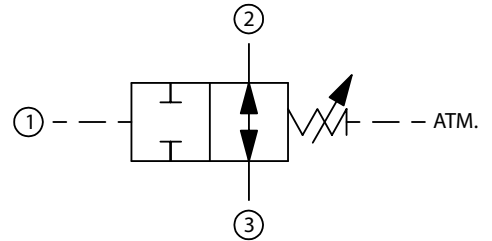
This is a direct-acting, normally-open, spool-type sequence valve with external pilot and atmospheric vent.

SPECIFICATIONS

Theoretical performance



Schematic



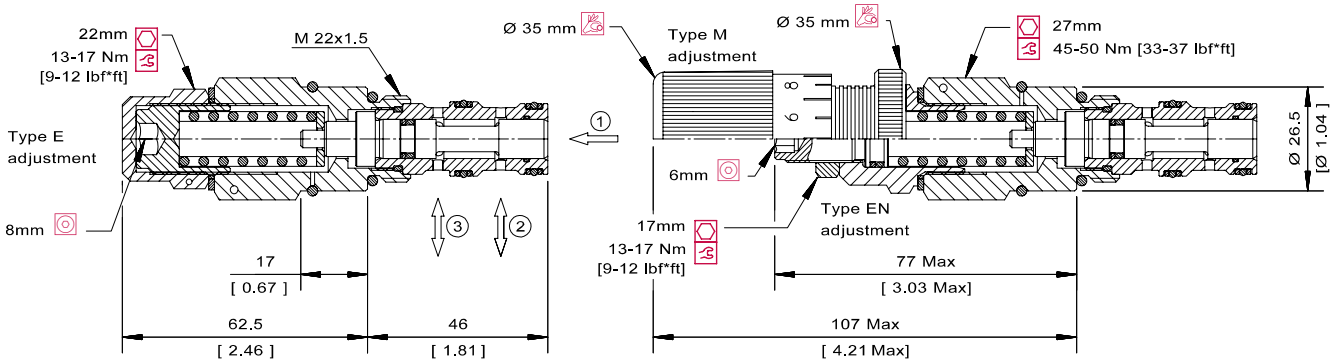
Specifications

Rated pressure	315 bar [4500 psi]
Rated flow at 7 bar [100 psi]	25 l/min [7 US gal/min]
Weight	0.26 kg [0.57 lb]
Cavity	NCS06/3

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

VDP 06 / NA - EN - 1 - 00 - V

Type of adjustment

- E = Internal screw
- EN = External screw
- M = Handwheel

Setting range

- 1 = 15-40 bar [217-580 psi]
- 2 = 30-120 bar [435-3046 psi]
- 3 = 105-190 bar [1523-2756 psi]

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

Seals

- V = Viton
- Omit = Buna-N

Seal kit

- 230000590
- 230000430

Housing and ports

- 00 = No Housing
- SE3/8 = AL, 3/8 BSP
- SE1/2 = AL, 1/2 BSP
- SE6S = AL, #6 SAE
- SE8S = AL, #8 SAE
- Other housings available

Housing P/N

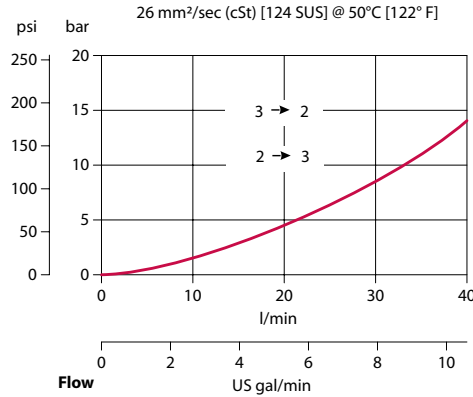
- No Housing
- NCS06/3-SE-3/8
- NCS06/3-SE-1/2
- NCS06/3-SE-6S
- NCS06/3-SE-8S

OPERATION

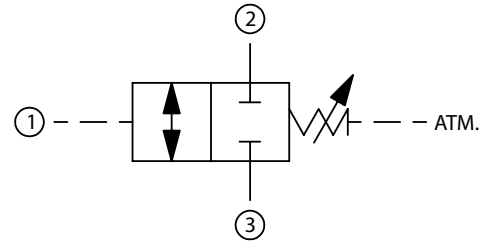
This is a direct-acting, normally-closed, spool-type sequence valve with external pilot and atmospheric vent.

SPECIFICATIONS

Theoretical performance



Schematic



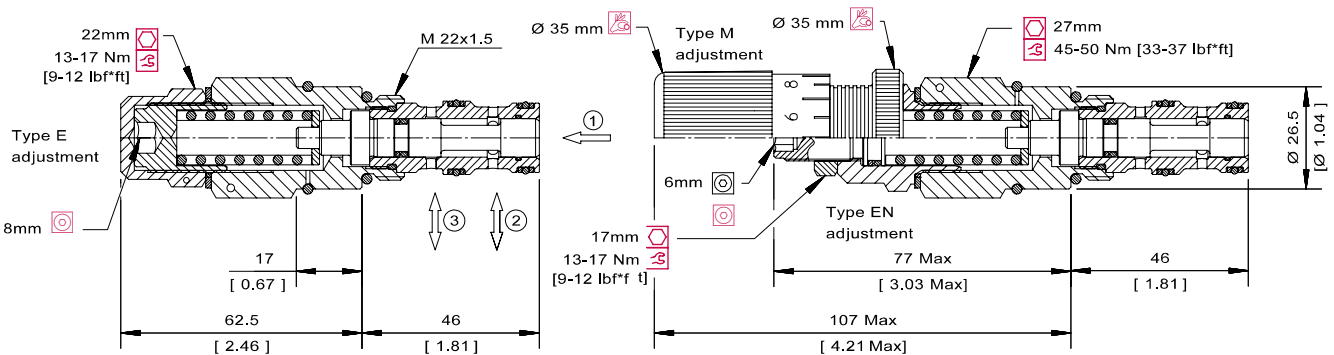
Specifications

Rated pressure	315 bar [4500 psi]
Rated flow at 7 bar [100 psi]	25 l/min [7 US gal/min]
Weight	0.26 kg [0.57 lb]
Cavity	NCS06/3

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

VDP 06 / NC - EN - 1 - 00 - V

Adjustment

- E = Internal screw
- EN = External screw
- M = Handwheel

Setting range

- 1 = 15-40 bar [217-580 psi]
- 2 = 30-120 bar [435-1740 psi]
- 3 = 105-190 bar [1523-2756 psi]

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

Seals

- V = Viton
- Omit = Buna-N

Seal kit

- 230000059
- 230000430

Housing and ports

- 00 = No Housing
- SE3/8 = AL, 3/8 BSP
- SE1/2 = AL, 1/2 BSP
- SE6S = AL, #6 SAE
- SE8S = AL, #8 SAE
- Other housings available

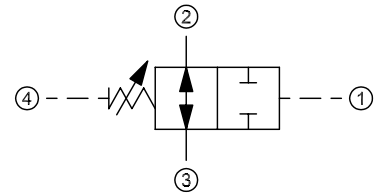
Housing P/N

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

OPERATION

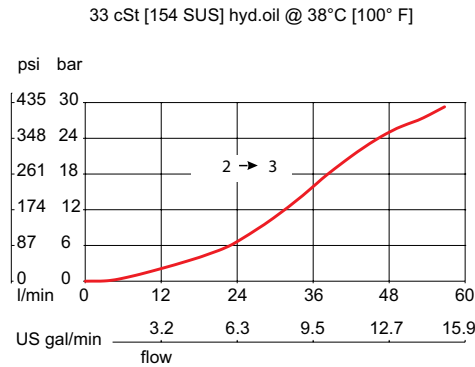
Valve allows flow between 2 and 3 until sufficient pressure is applied at 1 to close the valve. Note that pressure at 4 is additive to the spring setting.

Schematic



SPECIFICATIONS

Theoretical performance



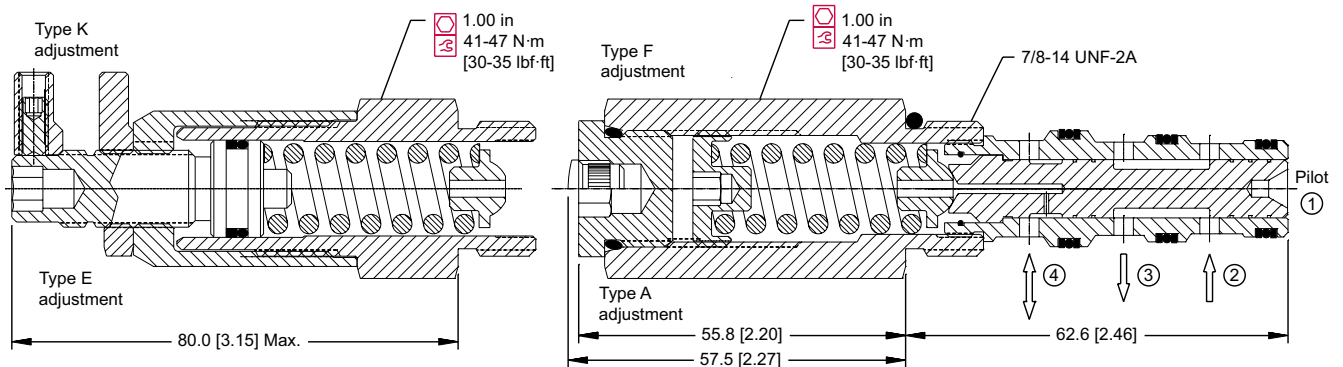
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	25 l/min [7 US gal/min]
Weight	0.26 kg [0.57 lb]
Cavity	SDC10-4

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP240-5-V-L3B-A-B-050

Seals

Seal kit

- B = Buna-N 120023
- V = Viton 120024

Housing and ports

- 0 = No Housing
- L3B = AL, 3/8 BSP
- L4B = AL, 1/2 BSP
- 6S = AL, #6 SAE
- 8S = AL, #8 SAE
- Other housings available

Housing P/N

- No Housing
- SDC10-4-L-3B
- SDC10-4-L-4B
- SDC10-4-6S
- SDC10-4-8S

Sequence Pressure

Code x 0.69 = bar
 [Code x 10 = psi]
 Example: 050 = 34.5 bar [500 psi]

Pressure range

- | bar | [psi] |
|------------------|--------------|
| A = 3.4 - 27.6 | [50 - 400] |
| B = 4.8 - 55.2 | [70 - 800] |
| C = 6.9 - 96.5 | [100 - 1400] |
| D = 34.5 - 165.5 | [500 - 2400] |

Adjustment option

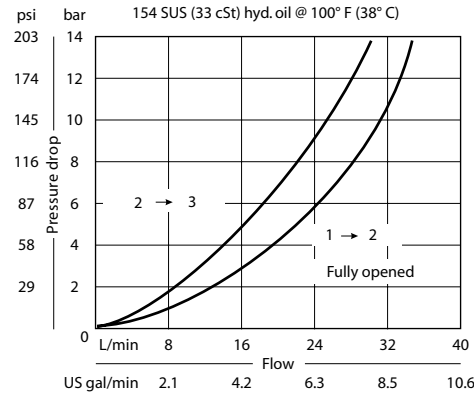
- A = Internal
- E = External
- F = Tamper resistant
- K = Knob

OPERATION

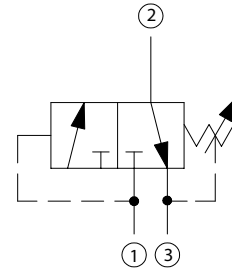
This valve is a direct acting, spool type sequence valve with internal pilot. This valve allows flow from 2 to 3 and blocks 1. At reaching the sequence pressure 1 is opened to 2.

SPECIFICATIONS

Theoretical performance



Schematic



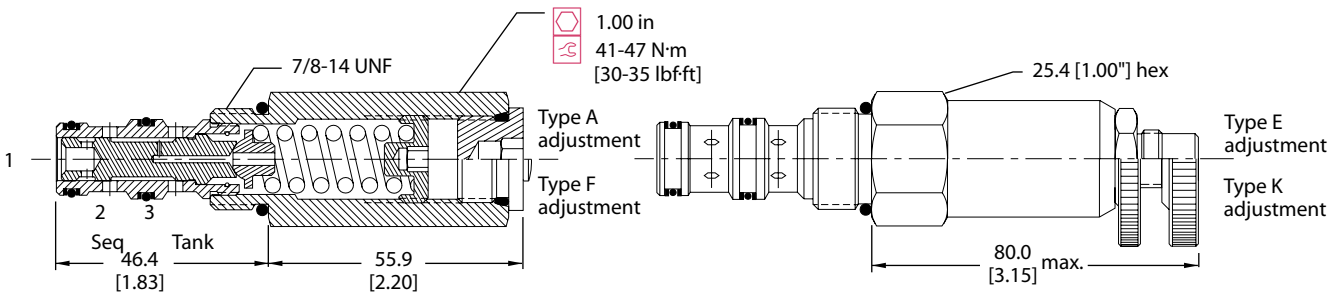
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	25 l/min [7 US gal/min]
Weight	0.25 kg [0.56 lb]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP240 - 1 - B - 6S - A - C - 100

- Seals**
 - B = Buna-N
 - V = Viton
- Seal kit**
 - 120009
 - 120010
- Housing and ports**
 - 0 = No Housing
 - SE3B = Al, 3/8 BSP
 - SE4B = Al, 1/2 BSP
 - 6S = Al, #6 SAE
 - 8S = Al, #8 SAE
 - Other housings available
- Housing P/N**
 - No Housing
 - SDC10-3-SE-3B
 - SDC10-3-SE-4B
 - CP10-3-6S
 - CP10-3-8S
- Adjustment option**
 - A = Internal
 - E = External
 - F = Tamper resistant
 - K = Knob
- Crack pressure**
 - Code x 10 = psi
 - Example: 100 = 1000 psi
- Pressure range**

	bar	[psi]
A =	4-28	[50-400]
Std. setting	17	[250]
B =	5-55	[75-800]
Std. setting	28	[400]
C =	7-97	[100-1400]
Std. setting	69	[1000]
D =	34-166	[500-2400]
Std. setting	103	[1500]

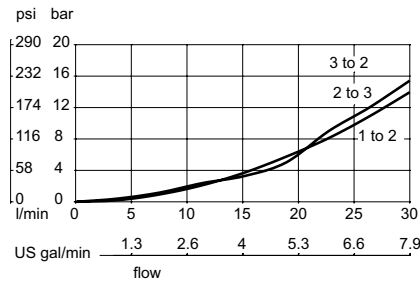
OPERATION

This valve drains 3 to 2 when the pressure at 1 is below the spring setting, and connects 1 to 2 when the pressure at 1 exceeds the spring setting. Note that pressure at 2 is additive to the spring setting.

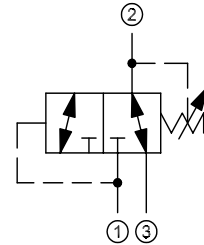
SPECIFICATIONS

Theoretical performance

33 cSt [154 SUS] hyd.oil @ 38°C [100° F]



Schematic



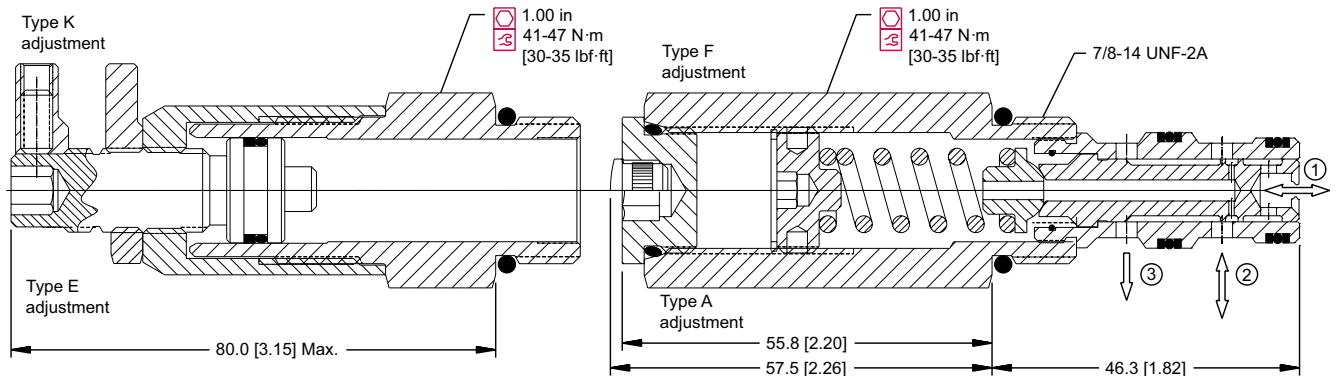
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	20 l/min [5 US gal/min]
Weight	0.24 kg [0.52 lb]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP240-9-B-6S-E-A-020

Seals

Seal kit
 B = Buna-n 120009
 V = Viton 120010

Housing and ports

0 = No Housing
 SE3B = Al, 3/8 BSP
 SE4B = Al, 1/2 BSP
 6S = Al, #6 SAE
 8S = Al, #8 SAE
 Other housings available

Housing P/N

No Housing
 SDC10-3-SE-3B
 SDC10-3-SE-4B
 CP10-3-6S
 CP10-3-8S

Crack Pressure

Code x 0.69 = bar
 [Code x 10 = psi]
 Example: 020 = 14 bar [200 psi]

Pressure range

	bar	[psi]
A	6.9 - 27.6	[100 - 400]
B	20.7 - 55.2	[300 - 800]
C	20.7 - 96.5	[300 - 1400]
D	68.9 - 165.5	[1000 - 2400]

Adjustment option

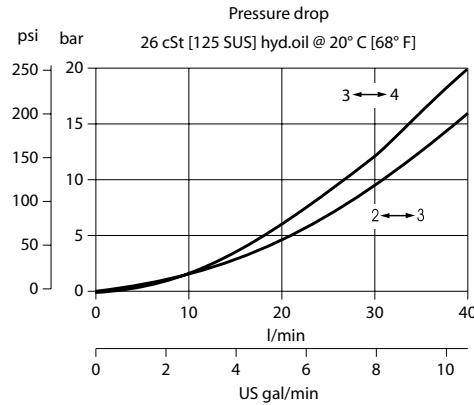
A = Internal
 E = External
 F = Tamper resistant
 K = Knob

OPERATION

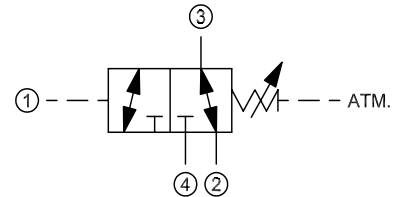
This is a direct-acting, spool-type sequence valve with external pilot and atmospheric vent.

SPECIFICATIONS

Theoretical performance



Schematic



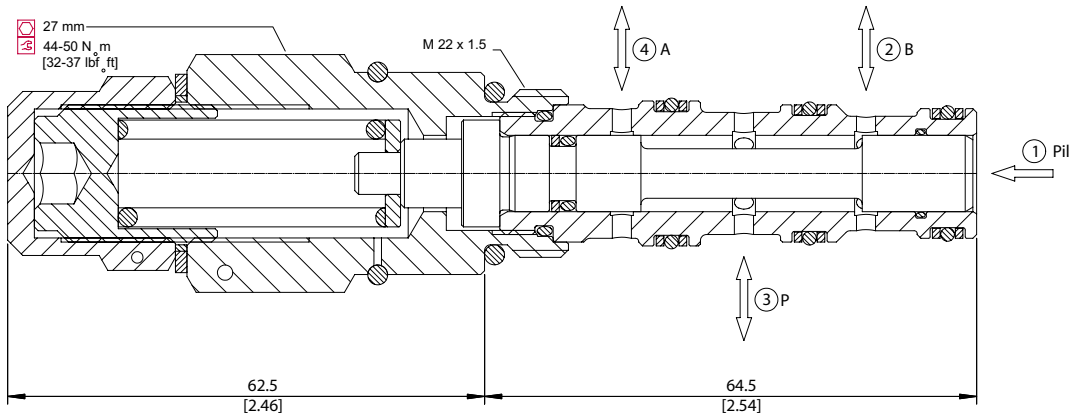
Specifications

Rated pressure	315 bar [4500 psi]
Rated flow at 7 bar [100 psi]	22 l/min [6 US gal/min]
Weight	0.28 kg [0.62 lb]
Cavity	NCS06/4

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

VDP 06 / 42 01 - M - 1 - 00 - V

Adjustment

- E = Internal screw
- EN = External screw
- M = Handwheel

Setting range

- 1 = 15- 40 bar [220-580 psi]
- 2 = 30 - 120 bar [430-1740 psi]
- 3 = 105 - 190 bar [1520-2750 psi]

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

Seals

- V = Viton
- Omit = Buna-N

Seal kit

- 230000350
- 230000080

Housing and ports

- 00 = No Housing
- L3/8 = AL, 3/8 BSP
- L1/2 = AL, 1/2 BSP
- L6S = AL, #6 SAE
- L8S = AL, #8 SAE
- Other housings available

Housing P/N

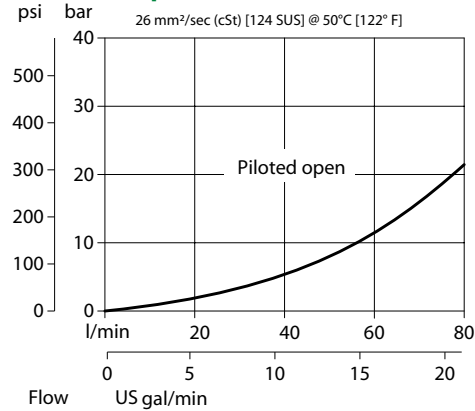
- No Housing
- NCS06/4-L-3/8
- NCS06/4-L-1/2
- NCS06/4-L-6S
- NCS06/4-L-8S

OPERATION

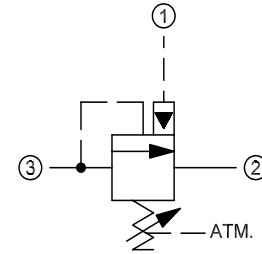
This is a pilot-operated, atmospherically-vented, unloading valve.

SPECIFICATIONS

Theoretical performance



Schematic

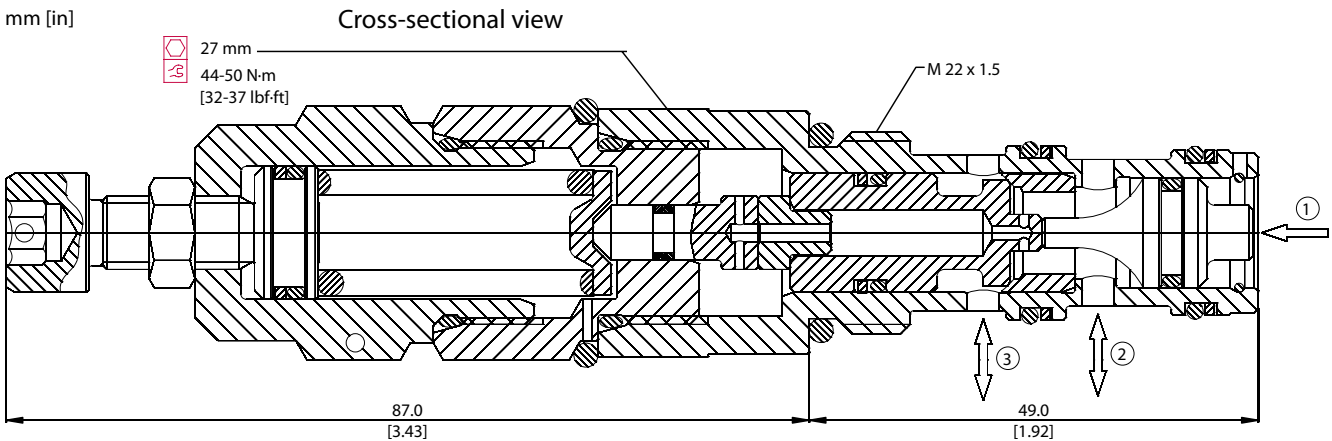


Specifications

Rated pressure	350 bar [5075 psi]
Rated flow	80 l/min [21 US gal/min]
Weight	0.29 kg [0.64 lb]
Cavity	NCS06/3

DIMENSIONS

mm [in]



ORDERING INFORMATION

VDB 06-CN - 2 - A - 00 - V

Setting range

- 1 = 25 - 140 bar [362 - 2031 psi]
- 2 = 70 - 210 bar [1015 - 3046 psi]
- 3 = 105 - 350 bar [1523 - 5076 psi]

Pilot ratio

- A = 7.1 : 1
- B = 4.1 : 1
- E = 1 : 1

Seals

- V = Viton
- Omit = Buna-N

Seal kit

- 230000110
- 230000070

Housing and ports

- 00 = No Housing
- SE3/8 = AL, 3/8 BSP
- SE1/2 = AL, 1/2 BSP
- SE6S = AL, #6 SAE
- SE8S = AL, #8 SAE
- Other housings available

Housing P/N

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

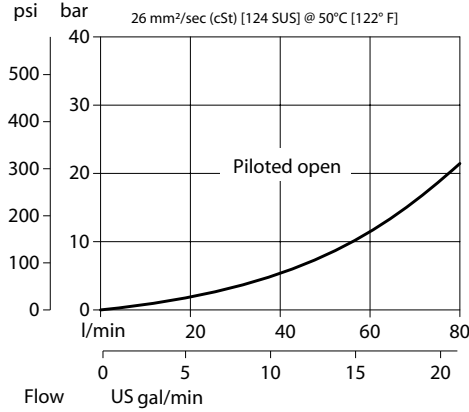
To order this valve with a specific factory setting, contact your Comatrol representative

OPERATION

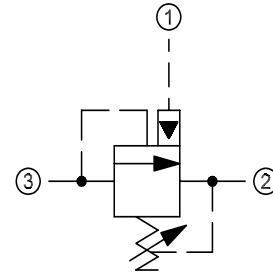
This is a pilot-operated unloading valve.

SPECIFICATIONS

Theoretical performance



Schematic

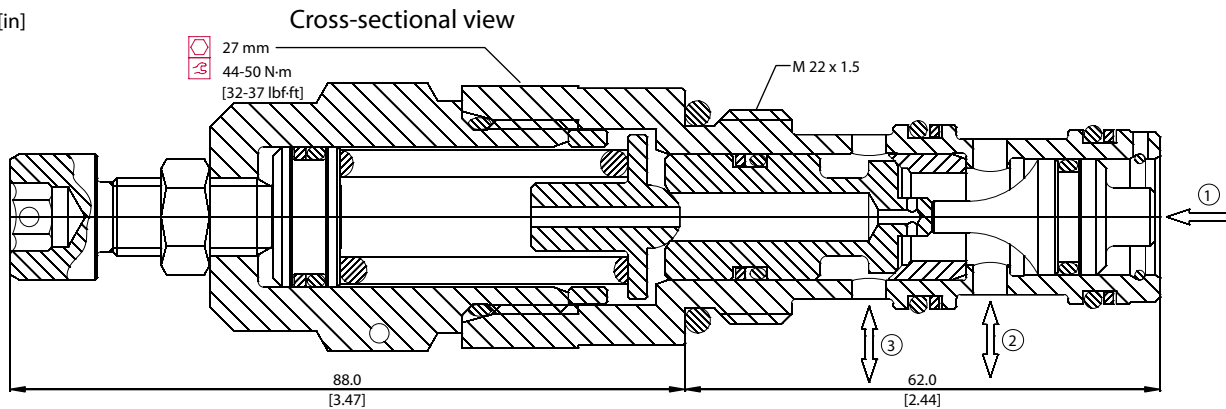


Specifications

Rated pressure	350 bar [5075 psi]
Rated flow	80 l/min [21 US gal/min]
Weight	0.21 kg [0.46 lb]
Cavity	NCS06/3

DIMENSIONS

mm [in]



ORDERING INFORMATION

VDB 06-EN - 2 - A - SE3/8 - V

Setting range

- 1 = 25 - 140 bar [362 - 2031 psi]
- 2 = 70 - 210 bar [1015 - 3046 psi]
- 3 = 105 - 350 bar [1523 - 5076 psi]

Pilot ratio

- A = 7.1 : 1
- B = 4.1 : 1
- E = 1 : 1

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

Seals

- V = Viton
- Omit = Buna-N

Seal kit

- 230000110
- 230000070

Housing and ports

- 00 = No Housing
- SE3/8 = AL, 3/8 BSP
- SE1/2 = AL, 1/2 BSP
- SE6S = AL, #6 SAE
- SE8S = AL, #8 SAE
- Other housings available

Housing P/N

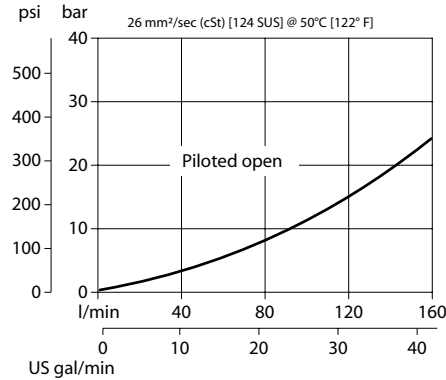
- No Housing
- NCS06/3-SE-3/8
- NCS06/3-SE-1/2
- NCS06/3-SE-6S
- NCS06/3-SE-8S

OPERATION

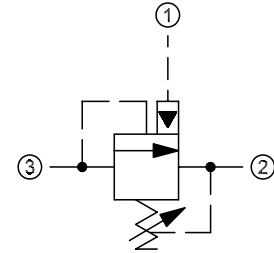
This is a pilot-operated unloading valve.

SPECIFICATIONS

Theoretical performance



Schematic

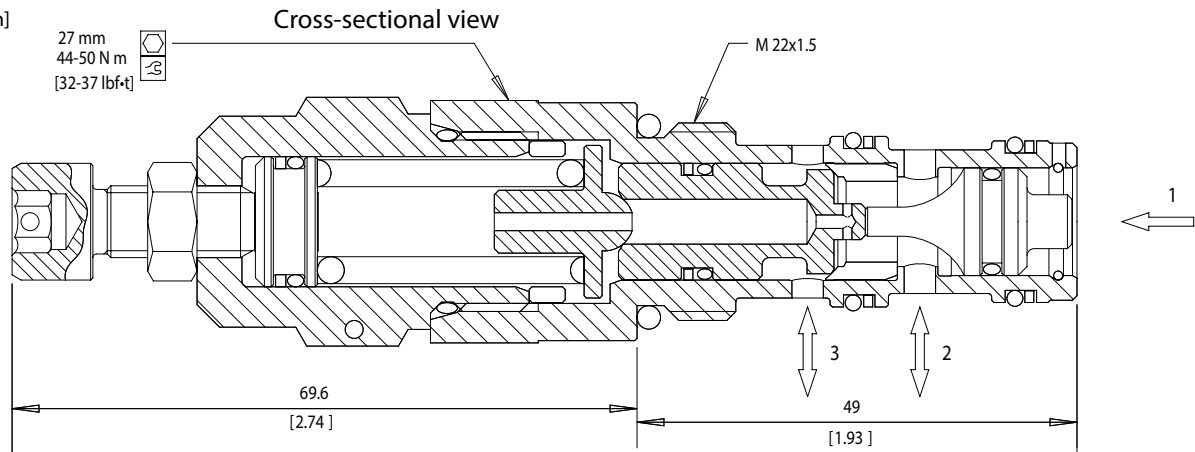


Specifications

Rated pressure	350 bar [5075 psi]
Rated flow	160 l/min [42 US gal/min]
Weight	0.70 kg [1.54 lb]
Cavity	NCS12/3

DIMENSIONS

mm [in]



ORDERING INFORMATION

VDB 12-EN - 2 - A - 00 - V

Setting range

Pilot ratio A	Pilot ratio B
1 = 25 - 170 bar [363-2466 psi]	1 = 25 - 120 bar [363-1740 psi]
2 = 70 - 250 bar [1015-3626 psi]	2 = 60 - 200 bar [870-2900 psi]
3 = 105 - 350 bar [1523-5076 psi]	3 = 90 - 280 bar [1305-4061 psi]

Pilot ratio

A = 6.9 : 1
 B = 4.7 : 1

Seals
 V = Viton
 Omit = Buna-N

Housing and ports
 00 = No Housing
 SE1/2 = AL, 1/2 BSP
 SE3/4 = AL, 3/4 BSP
 SE85 = AL, #8 SAE
 SE125 = AL, #12 SAE
 Other housings available

Seal kit
 230000360
 230000130

Housing P/N
 No Housing
 NCS12/3-SE-1/2
 NCS12/3-SE-3/4
 NCS12/3-SE-85
 NCS12/3-SE-125

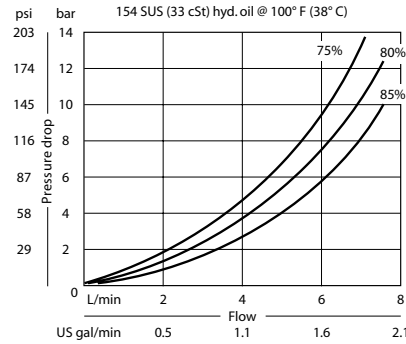
To order this valve with a specific factory setting, contact your Comatrol representative

OPERATION

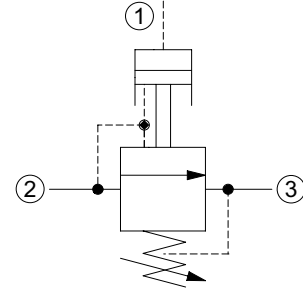
This is a normally-closed sequence valve that loads and unloads a system at a pre-determined ratio.

SPECIFICATIONS

Theoretical performance



Schematic



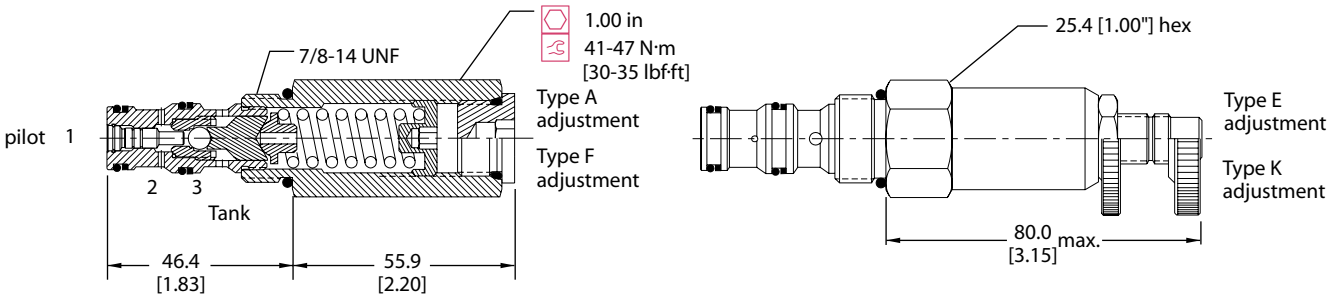
Specifications

Rated pressure	240 bar [3500 psi]
Maximum flow	4 l/min [1 US gal/min]
Weight	0.24 kg [0.53 lb]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP240 - 30 - B - 6S - A - B - 75 - 150

- Seals: B = Buna-N, V = Viton
- Seal kit: 120027, 120028
- Housing and ports: 0 = No Housing, SE3B = Al, 3/8 BSP, SE4B = Al, 1/2 BSP, 6S = Al, #6 SAE, 8S = Al, #8 SAE. Other housings available.
- Housing P/N: No Housing, SDC10-3-SE-3B, SDC10-3-SE-4B, CP10-3-6S, CP10-3-8S
- Adjustment option: A = Internal, E = External, F = Tamper resistant, K = Knob
- Crack pressure: Code x 10 = psi. Example: 150 = 1500 psi
- Pressure ratio: 75 = 75%, 80 = 80%, 85 = 85%
- Pressure range: A = 28-103 bar [400-1500 psi], Std. setting 69 [1000]; B = 62-240 bar [900-3500 psi], Std. setting 103 [1500]

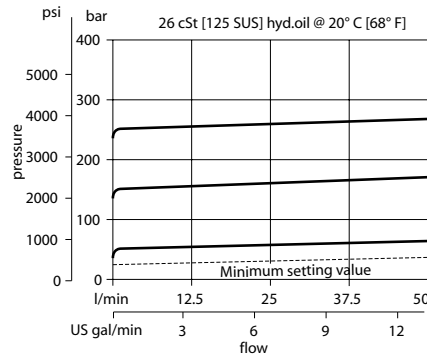
P102 182E

OPERATION

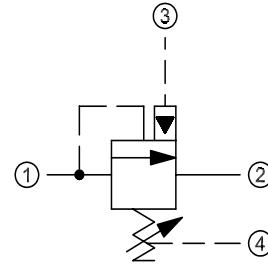
This is a normally-closed sequence valve that loads and unloads a system at a pre-determined ratio.

SPECIFICATIONS

Theoretical performance



Schematic

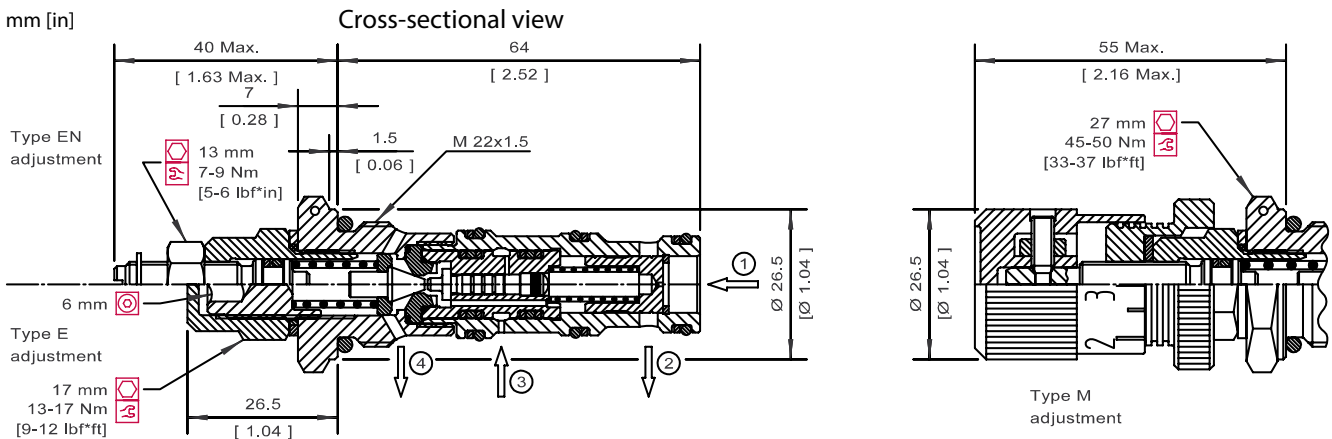


Specifications

Rated pressure	250 bar [3600 psi]
Rated flow	50 l/min [13 US gal/min]
Weight	0.22 kg [0.49 lb]
Cavity	NCS06/4

DIMENSIONS

mm [in]



ORDERING INFORMATION

AUV 06 - EN - 1 - A - L3/8 - V

Adjustment

E = Internal screw
 EN = External screw
 M = Handwheel

Setting range

1 = 10-70 bar [145-1015 psi]
 2 = 30-140 bar [435-2031 psi]
 3 = 70-210 bar [1015-3046 psi]

Pressure ratio

A = 85%

Seals

V = Viton
 Omit = Buna-N

Seal kit

230000350
 230000080

Housing and ports

00 = No Housing
 L3/8 = AL, 3/8 BSP
 L1/2 = AL, 1/2 BSP
 L6S = AL, #6 SAE
 L8S = AL, #8 SAE

Housing P/N

No Housing
 NCS06/4-L-3/8
 NCS06/4-L-1/2
 NCS06/4-L-6S
 NCS06/4-L-8S

Other housings available

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

