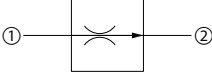
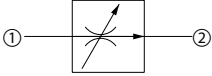
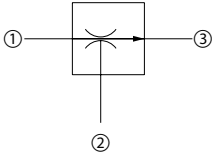
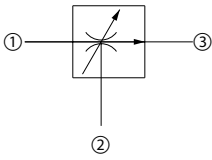
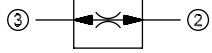


Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP308-1	SDC08-2	Flow control (restrictive, pressure compensated, fixed)	15 l/min [4 US gal/min]	210 bar [3000 psi]	07.7
	CP300-1	SDC10-2		23 l/min [6 US gal/min]	210 bar [3000 psi]	07.8
	CP301-1	CP12-2		60 l/min [16 US gal/min]	210 bar [3000 psi]	07.9

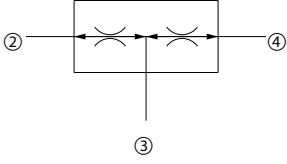
Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP308-2	SDC08-2	Flow control (restrictive, pressure compensated, ltd. adj.)	15 l/min [4 US gal/min]	210 bar [3000 psi]	07.10
	CP300-2	SDC10-2		23 l/min [6 US gal/min]	210 bar [3000 psi]	07.11
	VR 06	NCS06/2		30 l/min [8 US gal/min]	315 bar [4500 psi]	07.12
	VR 12	NCS12/2		60 l/min [16 US gal/min]	315 bar [4500 psi]	07.13

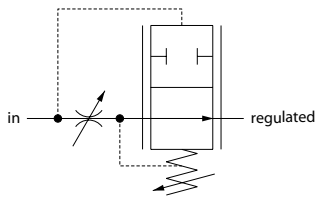
Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP310-1	SDC10-3	Flow control (priority, pressure compensated, fixed)	23 l/min [6 US gal/min]	210 bar [3000 psi]	07.14
	VRF 06	NCS06/3		30 l/min [8 US gal/min]	315 bar [4500 psi]	07.15
	CP311-1	CP12-3		45 l/min [12 US gal/min]	210 bar [3000 psi]	07.16
	CP312-1	SDC16-3		65 l/min [17 US gal/min]	210 bar [3000 psi]	07.17

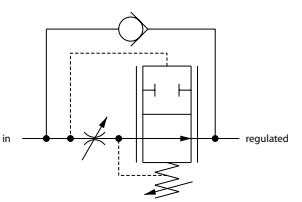
Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP310-2	SDC10-3	Flow control (priority, pressure compensated, ltd. adj.)	23 l/min [6 US gal/min]	210 bar [3000 psi]	07.18
	VRC 06	NCS06/3		50 l/min [13 US gal/min]	315 bar [4500 psi]	07.19
	VRC 12	NCS12/3		100 l/min [26 US gal/min]	315 bar [4500 psi]	07.20

Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP300-6	SDC10-3	Flow control (bi-directional, pressure compensated)	23 l/min [6 US gal/min]	210 bar [3000 psi]	07.21

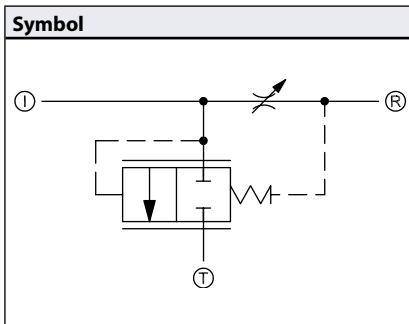
* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

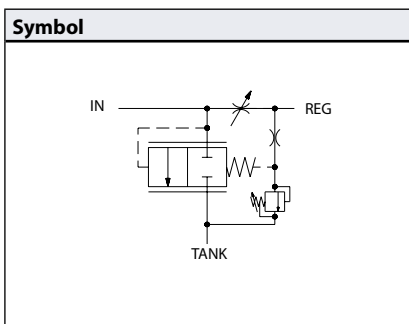
Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	VDF 06	NCS06/4	Flow divider/combiner	45 l/min [12 US gal/min]	210 bar [3000 psi]	07.22
	CP340-1	SDC10-4		45 l/min [12 US gal/min]	210 bar [3000 psi]	07.23
	CP341-1	CP12-4		75 l/min [20 US gal/min]	210 bar [3000 psi]	07.24
	CP342-1	CP16-4		150 l/min [40 US gal/min]	210 bar [3000 psi]	07.25
	CP342-3	CP16-4		150 l/min [40 US gal/min]	450 bar [6500 psi]	07.26
	CP343-1	SDC20-4		340 l/min [90 US gal/min]	210 bar [3000 psi]	07.27

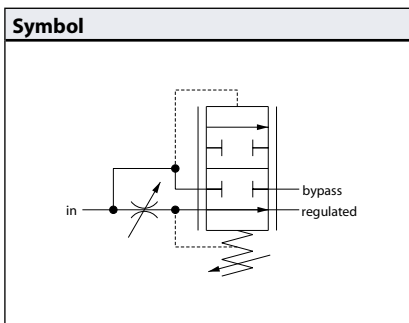
Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	2F74	none	Flow control (restrictive, pressure compensated, fully adjustable)	30 l/min [8 US gal/min]	210 bar [3000 psi]	07.28
	2F75	none		60 l/min [16 US gal/min]	210 bar [3000 psi]	07.29
	2F76	none		95 l/min [25 US gal/min]	210 bar [3000 psi]	07.30
	2F77	none		190 l/min [50 US gal/min]	210 bar [3000 psi]	07.31

Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	2FC74	none	Flow control (restrictive, pressure compensated, fully adjustable, with free reverse flow)	30 l/min [8 US gal/min]	210 bar [3000 psi]	07.32
	2FC75	none		60 l/min [16 US gal/min]	210 bar [3000 psi]	07.33
	2FC76	none		95 l/min [25 US gal/min]	210 bar [3000 psi]	07.34
	2FC77	none		190 l/min [50 US gal/min]	210 bar [3000 psi]	07.35

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

Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	2F84	none	Flow control (bypass, pressure compensated, fully adjustable)		210 bar [3000 psi]	07.36
	2F85	none			210 bar [3000 psi]	07.37
	2F86	none			210 bar [3000 psi]	07.38
	2F87	none			210 bar [3000 psi]	07.39

Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page	
	2FA84	none	Flow control (bypass, pressure compensated, fully adjustable, with integral relief valve)	30 l/min [8 US gal/min]	210 bar [3000 psi]	07.40	
	2FA85	none			60 l/min [16 US gal/min]	210 bar [3000 psi]	07.41
	2FA86	none			95 l/min [25 US gal/min]	210 bar [3000 psi]	07.42
	2FA87	none			190 l/min [50 US gal/min]	210 bar [3000 psi]	07.43

Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page	
	2F94	none	Flow control (priority, pressure compensated, fully adjustable)	30 l/min [8 US gal/min]	210 bar [3000 psi]	07.44	
	2F95	none			60 l/min [16 US gal/min]	210 bar [3000 psi]	07.45
	2F96	none			95 l/min [25 US gal/min]	210 bar [3000 psi]	07.46
	2F97	none			190 l/min [50 US gal/min]	210 bar [3000 psi]	07.47

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

Cartridge Valves Technical Information

Flow control valves

Application notes

OVERVIEW

Pressure compensated flow control valves are used to limit or regulate flow. Three basic types of cartridges are available; restrictive-type, priority-type, and divider/combiner type. Combination valves in manifolds for additional features such as fully adjustable flow or free reverse flow are also available.

Flow control valves



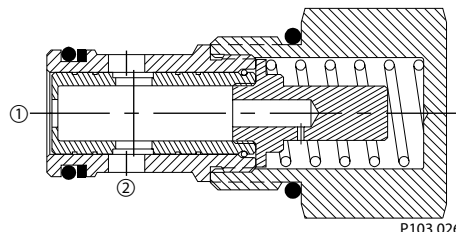
F102 003

RESTRICTED-TYPE PRESSURE COMPENSATED

Restrictive-type pressure compensated flow control valves are two-ported valves that maintain a constant flow rate from ① to ② regardless of load pressure changes in the circuit downstream of ②. The control orifice in the spool is factory set to the flow specification. The valve begins to respond to load changes when flow through the valve creates a pressure differential across the control orifice of approximately 7 bar [100 psi], and accurately maintains flow within +/- 10% across the range of 35-207 bar [500-3000 psi]. Reverse flow from ② to ① returns through the control orifice and is non-compensated.

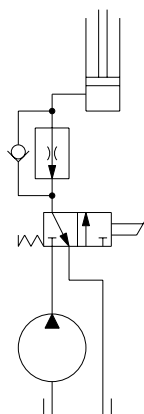
Restrictive-type flow control valves can be used in meter-in or meter-out applications to control actuator speeds.

Restricted-type pressure compensated flow control valve



P103 026

Actuator speed control circuit



P103 051

Cartridge Valves Technical Information

Flow control valves

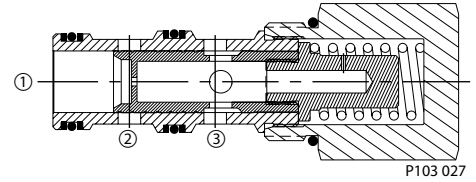
Application notes

PRIORITY-TYPE PRESSURE COMPENSATED

Priority-type pressure compensated flow control valves are three-ported valves that maintain a constant flow rate from ① to ③ regardless of load pressure changes in the priority circuit downstream of ③ or in the bypass circuit downstream of ②. The control orifice in the spool is factory set to the flow specification. The valve begins to respond to load pressure changes when flow to ③ creates a pressure differential across the control orifice of approximately 7 bar [100 psi]. The valve accurately maintains flow to the priority circuit across the range of 35-207 bar [500-3000 psi], with any excess inlet flow bypassing to ②. Note that both ② and ③ may be fully and independently pressurized. Also note that if ② is blocked, the valve will function as a restrictive-type flow control.

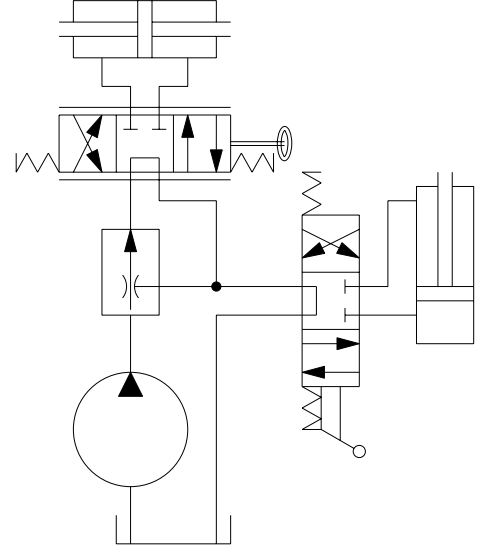
Priority-type flow control valves are used in meter-in applications. A common application is to direct a fixed flow rate to a priority function, such as steering, while secondary flow is available to other intermittent functions.

Priority-type pressure compensated flow control valve



P103 027

Steering priority circuit



P103 053

Cartridge Valves Technical Information

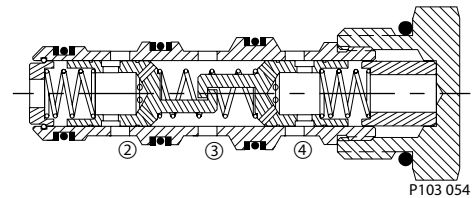
Flow control valves

Application notes

FLOW DIVIDER / COMBINER

Flow divider/combiners are pressure compensated valves. When the valve is functioning as a divider, it will divide input flow from ③ to the two outputs at ② and ④ according to a preset ratio. This ratio is unaffected by pressure. When the valve is functioning as a combiner, it will combine the flow from the two inputs from ② and ④ into one output at ③. Note that a flow divider/combiner is specified with a nominal flow rate for each leg. When operating with flow rates higher than specified, the dividing and combining ratios will be maintained, but at a cost of higher pressure drop and associated heat generation. When operating with lower flow rates than specified, the dividing and combining ratios are also maintained, but at a cost of accuracy. For example, a 22 l/min [5.8 US gal/min] : 22 l/min [5.8 US gal/min] flow divider will divide flow in a 50:50 ratio with an accuracy of $\pm 10\%$ (± 2.2 l/min [± 0.58 US gal/min]) per leg. With an input flow of 8.0 l/min [2.1 US gal/min], the flow division will be 4.0 ± 2.2 l/min [1.1 ± 0.58 US gal/min] per leg.

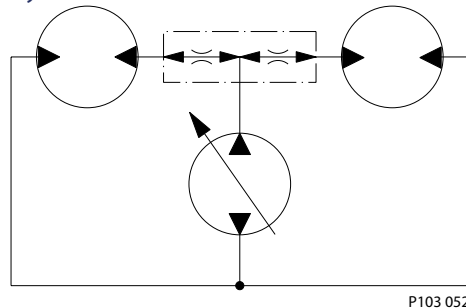
Flow divider / combiner



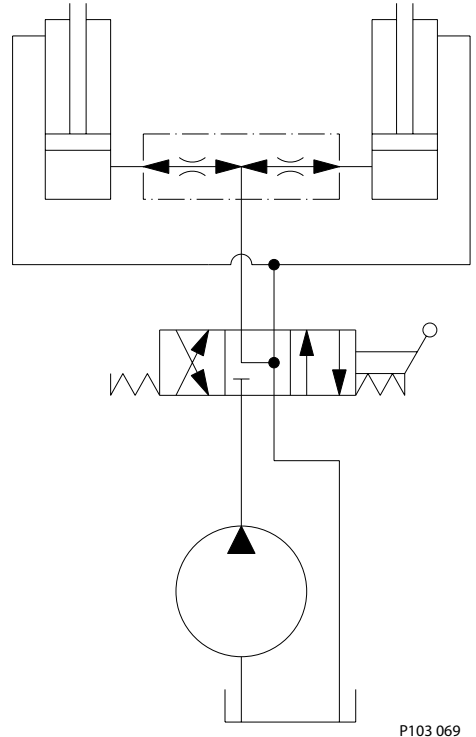
Common applications for flow divider/combiners include:

- Combining flow (forward) or dividing flow (reverse) to hydraulic wheel motors for vehicle drive application. Note that an external orifice is added to allow more flow to one motor than the other while turning a corner (not shown).
- Synchronizing motion of hydraulic cylinders. Note that if circuit operation results in a blockage of one cylinder port, the other port will also close. Consult factory for details.

Hydraulic wheel motor circuit



Synchronized hydraulic cylinders circuit





Cartridge Valves Technical Information

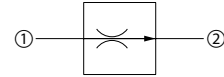
Flow control valves

CP308-1

OPERATION

This valve is a fixed pressure compensated flow control valve.

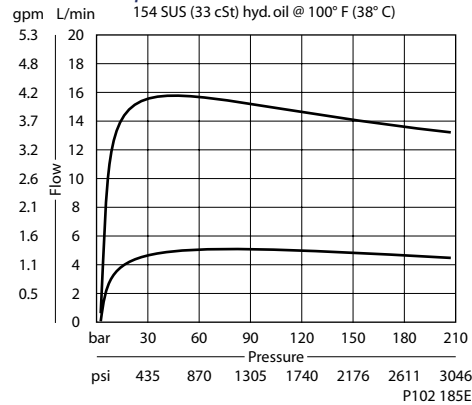
Schematic



P102 183E

SPECIFICATIONS

Theoretical performance



Specifications

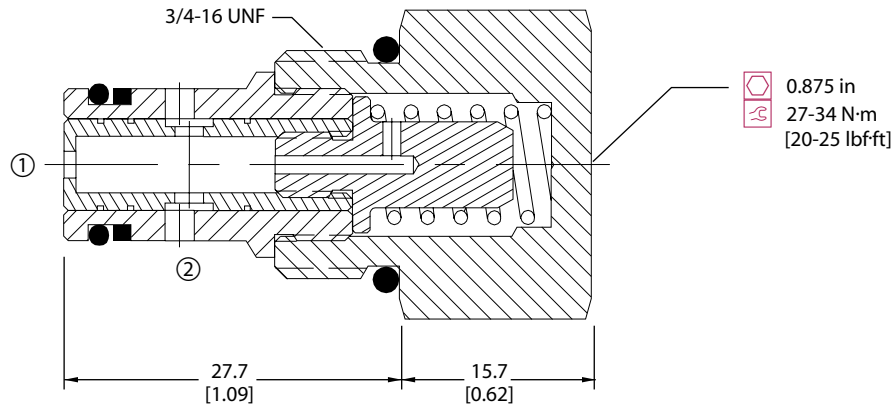
Rated pressure	210 bar [3000 psi]
Max regulated flow	15 l/min [4 US gal/min]
Weight	0.08 kg [0.17 lb]
Accuracy ± 20%	0.4-2.2 l/min [0.1-0.6 US gal/min]
± 15%	2.3-6.8 l/min [0.6-1.8 US gal/min]
± 10%	6.9-15.1 l/min [1.8-4 US gal/min]
Cavity	SDC08-2

Flow control valves
CP308-1

DIMENSIONS

mm [in]

Cross-sectional view



P102 184E

ORDERING INFORMATION

CP308 - 1 - B - 6S - 1.0

Seals	Seal kit		Regulated Flow	
B = Buna-N	120221		L/min	[US gal/min]
V = Viton	120022		0.1 = .4	[0.1]
			To	
			4.0 = 15.1	[4.0]
Housing and ports	Housing P/N			
0 = No Housing	No Housing			
DG2B = Al, 1/4 BSP	SDC08-2-DG-2B			
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				

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Cartridge Valves Technical Information

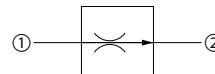
Flow control valves

CP300-1

OPERATION

This valve is a fixed pressure compensated flow control valve.

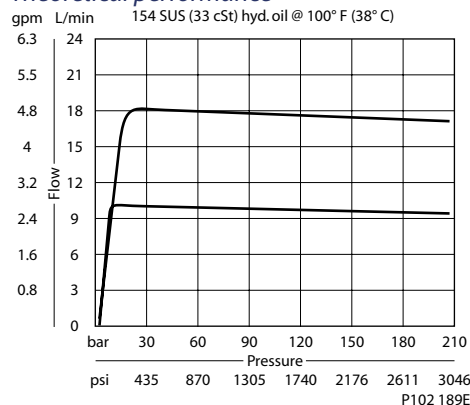
Schematic



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SPECIFICATIONS

Theoretical performance



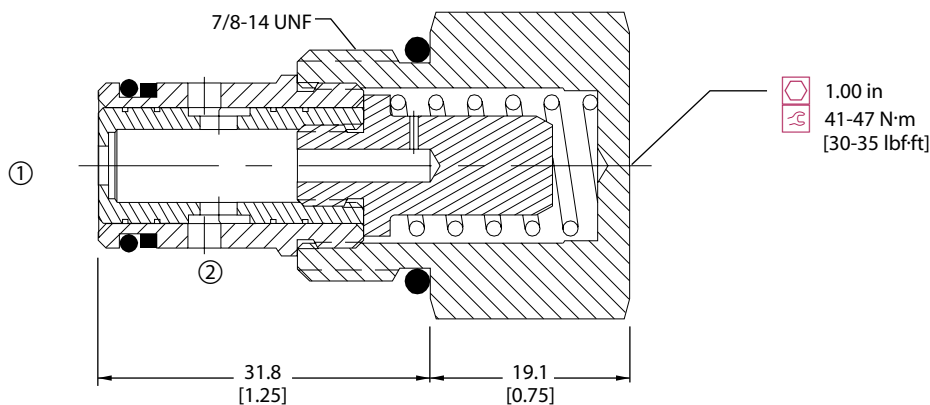
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	23 l/min [6 US gal/min]
Weight	0.12 kg [0.26 lb]
Accuracy ± 20%	0.4-2.2 l/min [0.1-0.6 US gal/min]
± 15%	2.3-6.8 l/min [0.6-1.8 US gal/min]
± 10%	6.9-22.7 l/min [1.8-6 US gal/min]
Cavity	SDC10-2

DIMENSIONS

mm [in]

Cross-sectional view



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ORDERING INFORMATION

CP300 - 1 - B - 8S - 2.5

Seals	Seal kit	Regulated Flow	L/min [US gal/min]
B = Buna-N V = Viton	120015 120016		
Housing and ports	Housing P/N		
0 = No Housing DG3B = Al, 3/8 BSP DG4B = Al, 1/2 BSP 6S = Al, #6 SAE 8S = Al, #8 SAE Other housings available	No Housing SDC10-2-DG-3B SDC10-2-DG-4B CP10-2-6S CP10-2-8S		

P102 191E



Cartridge Valves Technical Information

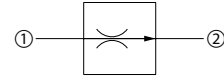
Flow control valves

CP301-1

OPERATION

This valve is a fixed pressure compensated flow control valve.

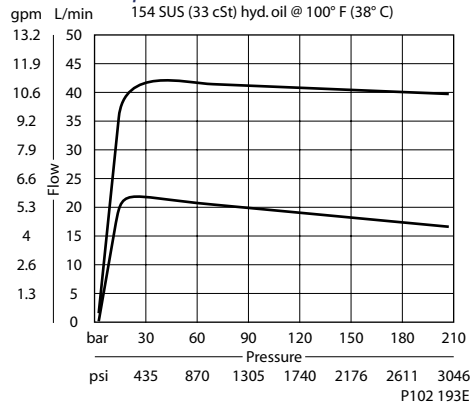
Schematic



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SPECIFICATIONS

Theoretical performance



Specifications

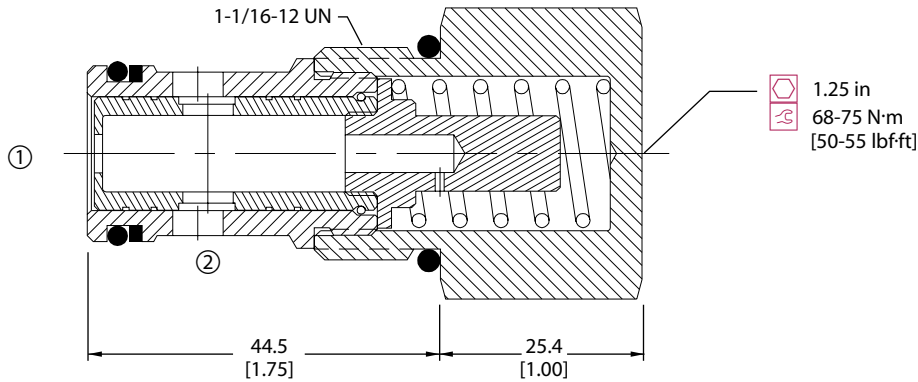
Rated pressure	210 bar [3000 psi]
Max regulated flow	57 l/min [15 US gal/min]
Weight	0.24 kg [0.52 lb]
Accuracy ± 15%	1.9-7.5 l/min [0.5-2 US gal/min]
± 10%	7.6-56.8 l/min [2-15 US gal/min]
Cavity	CP12-2

Flow control valves
CP301-1

DIMENSIONS

mm [in]

Cross-sectional view



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ORDERING INFORMATION

CP301 - 1 - B - 12S - 10.0

Seals	Seal kit	Regulated Flow
B = Buna-N V = Viton	120017 120018	
Housing and ports	Housing P/N	L/min [US gal/min]
0 = No Housing	No Housing	0.5 = 1.9 [0.5]
4B = Al, 1/2 BSP	CP12-2-4B	to
6B = Al, 3/4 BSP	CP12-2-6B	15.0 = 56.8 [15.0]
10S = Al, #10 SAE	CP12-2-10S	
12S = Al, #12 SAE	CP12-2-12S	

Other housings available

P102 195E



Cartridge Valves Technical Information

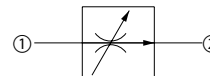
Flow control valves

CP308-2

OPERATION

This valve is a limited adjustment pressure compensated flow control valve.

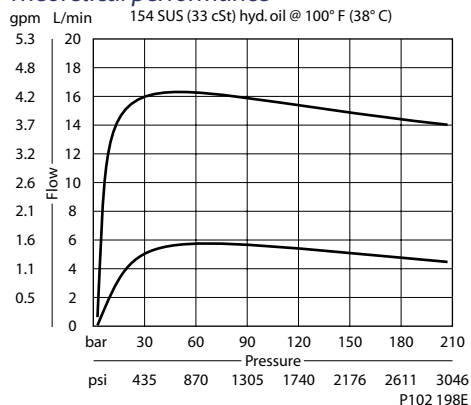
Schematic



P102 196E

SPECIFICATIONS

Theoretical performance



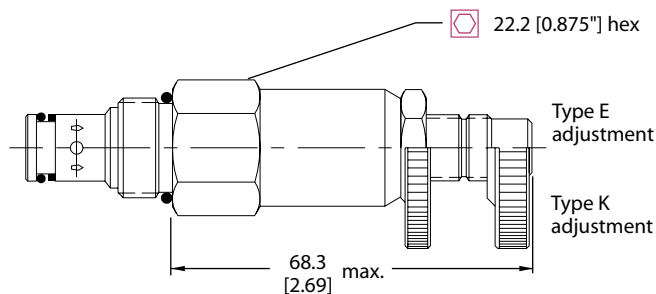
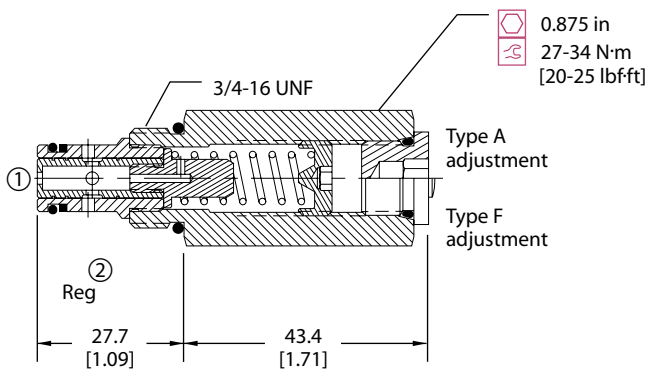
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	15 l/min [4 US gal/min]
Weight	0.15 kg [0.32 lb]
Cavity	SDC08-2

DIMENSIONS

mm [in]

Cross-sectional view



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ORDERING INFORMATION

CP308 - 2 - B - 6S - A - 1.0

<p>Seals</p> <p>B = Buna-N</p> <p>V = Viton</p>	<p>Seal kit</p> <p>120221</p> <p>120222</p>	<p>Regulated Flow</p> <p>L/min [US gal/min]</p> <p>0.1 = .4 [0.1]</p> <p>To</p> <p>4.0 = 15.1 [4.0]</p>
<p>Housing and ports</p> <p>0 = No Housing</p> <p>DG2B = Al, 1/4 BSP</p> <p>DG3B = Al, 3/8 BSP</p> <p>4S = Al, #4 SAE</p> <p>6S = Al, #6 SAE</p> <p>Other housings available</p>	<p>Housing P/N</p> <p>No Housing</p> <p>SDC08-2-DG-2B</p> <p>SDC08-2-DG-3B</p> <p>CP08-2-4S</p> <p>CP08-2-6S</p>	<p>Adjustment option</p> <p>A = Internal</p> <p>E = External</p> <p>F = Tamper resistant</p> <p>K = Knob</p>

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Cartridge Valves Technical Information

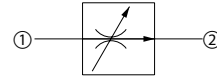
Flow control valves

CP300-2

OPERATION

This valve is a limited adjustment pressure compensated flow control valve.

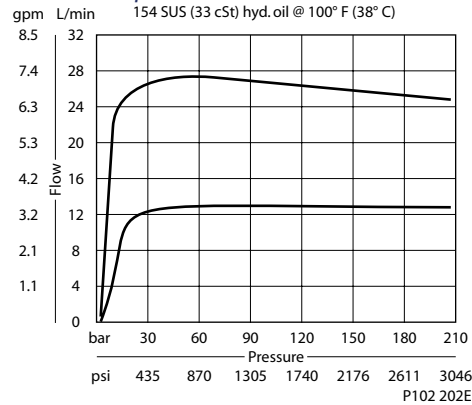
Schematic



P102 196E

SPECIFICATIONS

Theoretical performance



Specifications

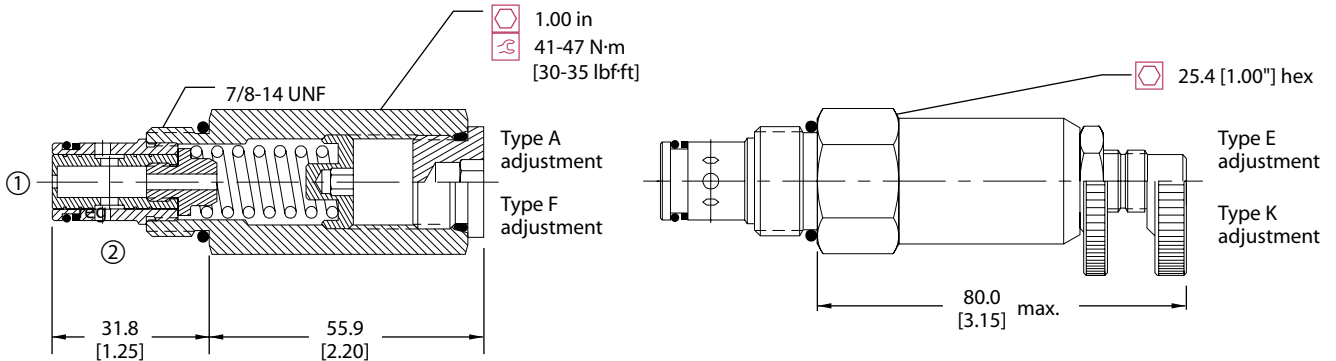
Rated pressure	210 bar [3000 psi]
Max regulated flow	23 l/min [6 US gal/min]
Weight	0.24 kg [0.52 lb]
Accuracy ± 20%	0.5-2.2 l/min [0.1-0.5 US gal/min]
± 15%	2.3-6.8 l/min [0.5-1.5 US gal/min]
± 10%	6.8-27.3 l/min [1.5-6 US gal/min]
Cavity	SDC10-2

Flow control valves
CP300-2

DIMENSIONS

mm [in]

Cross-sectional view



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ORDERING INFORMATION

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
CP10-2-6S
CP10-2-8S

Regulated Flow

L/min [US gal/min]
0.5 = 2.4 [0.5]
To
6.0 = 22.7 [6.0]

Adjustment option

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

P102 204E



Cartridge Valves Technical Information

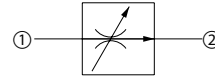
Flow control valves

VR 06

OPERATION

This valve is a limited adjustment, pressure compensated, restrictive-type flow control valve.

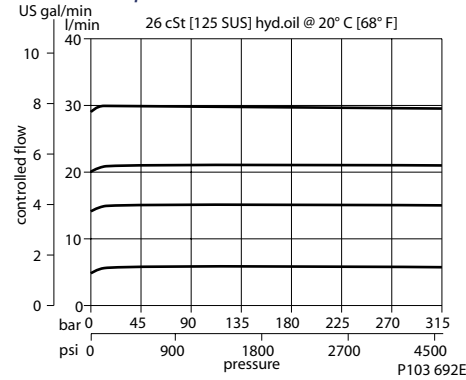
Schematic



P102 196E

SPECIFICATIONS

Theoretical performance



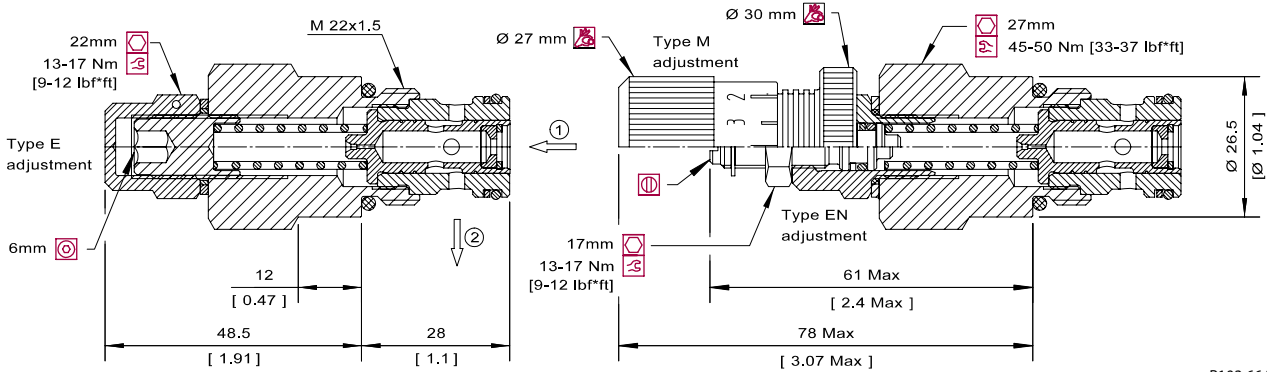
Specifications

Rated pressure	315 bar [4500 psi]
Max regulated flow	30 l/min [8 US gal/min]
Weight	0.19 kg [0.42 lb]
Cavity	NCS06/2

DIMENSIONS

mm [in]

Cross-sectional view



P103 664

ORDERING INFORMATION

VR 06 - EN-1.25 - 00 - V

<p>Adjustment</p> <p>E = Internal screw EN = External screw M = Handwheel</p> <p>Orifice size</p> <table border="0"> <tr> <td>mm</td> <td>L/min</td> <td>[US gal/m]</td> </tr> <tr> <td>1.25</td> <td>= 1-4</td> <td>[0.3-1.1]</td> </tr> <tr> <td>2.00</td> <td>= 3-10</td> <td>[0.8-2.6]</td> </tr> <tr> <td>3.00</td> <td>= 6-20</td> <td>[1.6-5.3]</td> </tr> <tr> <td>3.50</td> <td>= 10-30</td> <td>[2.6-7.9]</td> </tr> </table> <p>other orifices available consult factory</p>	mm	L/min	[US gal/m]	1.25	= 1-4	[0.3-1.1]	2.00	= 3-10	[0.8-2.6]	3.00	= 6-20	[1.6-5.3]	3.50	= 10-30	[2.6-7.9]	<p>Seals</p> <p>V = Viton Omit = Buna-N</p> <p>Housing and ports</p> <p>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</p>	<p>Seal kit</p> <p>230000380 230000060</p> <p>Housing P/N</p> <p>No Housing NCS06/2-DG-3/8 NCS06/2-DG-1/2 NCS06/2-DG-6S NCS06/2-DG-8S</p>
mm	L/min	[US gal/m]															
1.25	= 1-4	[0.3-1.1]															
2.00	= 3-10	[0.8-2.6]															
3.00	= 6-20	[1.6-5.3]															
3.50	= 10-30	[2.6-7.9]															

P103 718E



Cartridge Valves Technical Information

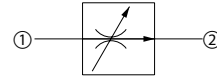
Flow control valves

VR 12

OPERATION

This valve is a limited adjustment, pressure compensated, restrictive-type flow control valve.

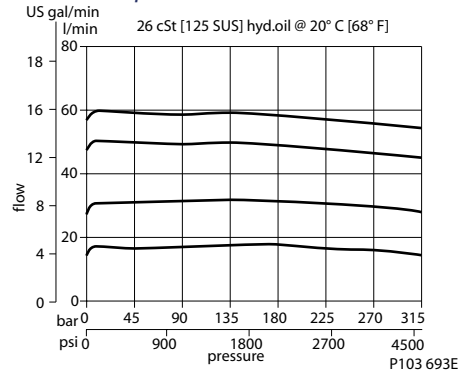
Schematic



P102 196E

SPECIFICATIONS

Theoretical performance



Specifications

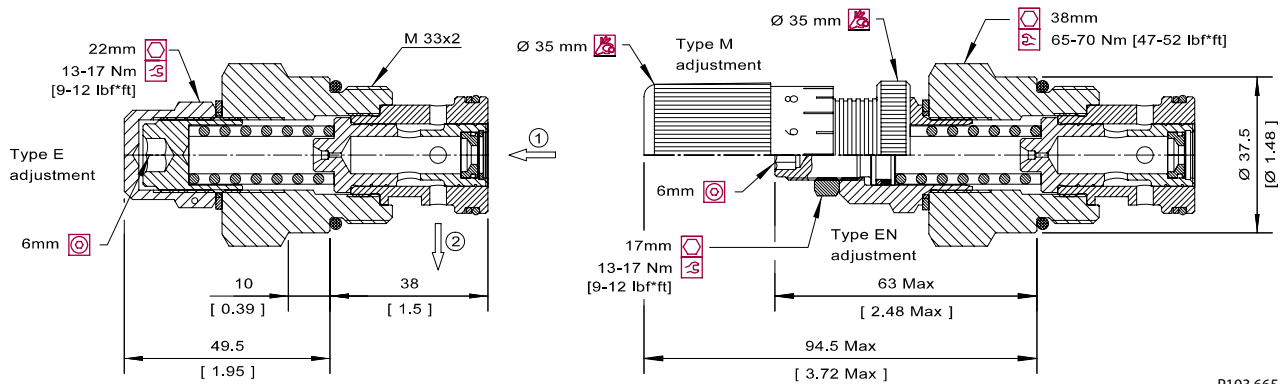
Rated pressure	315 bar [4500 psi]
Max regulated flow	60 l/min [16 US gal/min]
Weight	0.44 kg [0.97 lb]
Cavity	NCS12/2

Flow control valves
VR 12

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

VR 12 - EN-1.25 - 00 - V

Adjustment

E = Internal screw
EN = External screw
M = Handwheel

Orifice size

mm	L/min	[US gal/m]
1.50 =	2.5-6.5	[0.7-1.7]
2.50 =	6-16	[1.6-4.2]
4.00 =	16-40	[4.2-10.6]
5.00 =	25-60	[6.6-15.8]

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

P103 719E



Cartridge Valves Technical Information

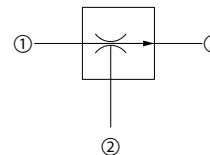
Flow control valves

CP310-1

OPERATION

This valve is a fixed, pressure compensated priority-type flow control valve.

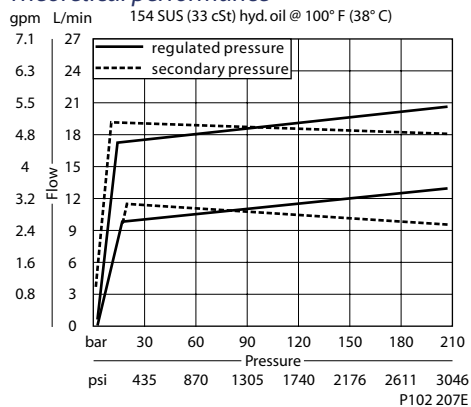
Schematic



P102 205E

SPECIFICATIONS

Theoretical performance



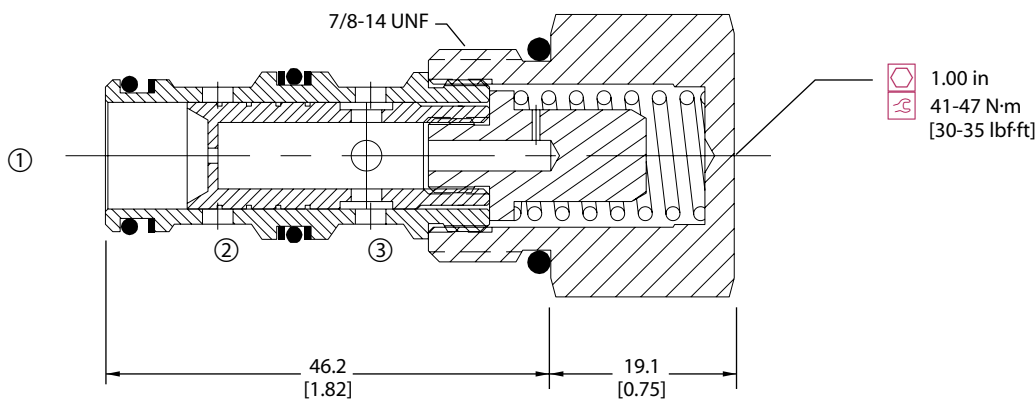
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	23 l/min [6 US gal/min]
Max inlet flow	38 l/min [10 US gal/min]
Weight	0.13 kg [0.29 lb]
Accuracy ± 20%	0.4-2.2 l/min [0.1-0.6 US gal/min]
± 15%	2.3-6.8 l/min [0.6-1.8 US gal/min]
± 10%	6.9-22.7 l/min [1.8-6 US gal/min]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



P102 206E

ORDERING INFORMATION

CP310 - 1 - B - 8S - 2.5

Seals	Seal kit	Regulated Flow	L/min [US gal/m]
B = Buna-N V = Viton	120240 120241		
Housing and ports	Housing P/N		
00 = No Housing SE3B = Al, 3/8 BSP SE4B = Al, 1/2 BSP 6S = Al, #6 SAE 8S = Al, #8 SAE Other housings available	No Housing SDC10-3-SE-3B SDC10-3-SE-4B CP10-3-6S CP10-3-8S		

P102 209E

Flow control valves CP310-1



Cartridge Valves Technical Information

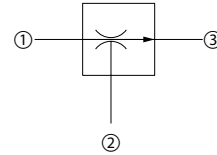
Flow control valves

VRF 06

OPERATION

This valve is a fixed, pressure compensated, priority-type flow control.

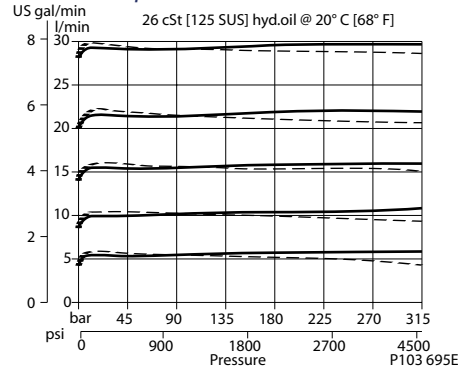
Schematic



P102 205E

SPECIFICATIONS

Theoretical performance



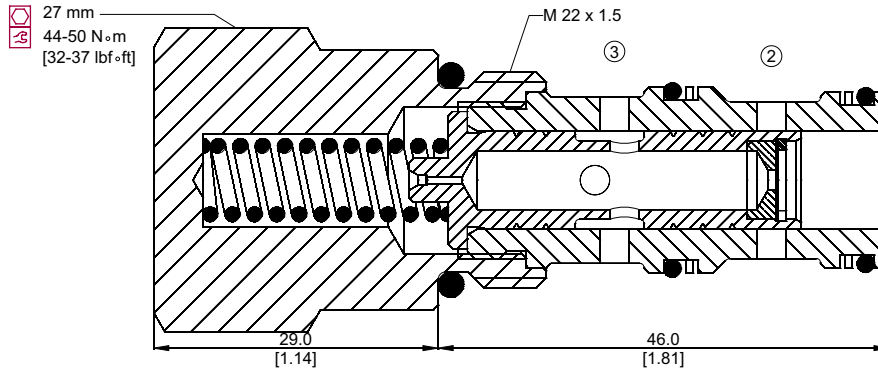
Specifications

Rated pressure	315 bar [4500 psi]
Max regulated flow	26 l/min [7 US gal/min]
Max inlet flow	50 l/min [13 US gal/min]
Weight	0.19 kg [0.42 lb]
Accuracy ± 10%	2.3-25.5 l/min [0.5-6.8 US gal/min]
Cavity	NCS06/3

DIMENSIONS

mm [in]

Cross-sectional view



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ORDERING INFORMATION

VRF 06 - 1.5 - SE3/8 - V

Orifice size	flow
Orifice	L/min [US gal/min]
0.75	= 1.5 [0.4]
1.00	= 2.0 [0.53]
1.25	= 3.5 [0.92]
1.50	= 4.5 [1.19]
1.75	= 6 [1.58]
2.00	= 9.0 [2.38]
2.25	= 10 [2.64]
2.50	= 12 [3.30]
2.75	= 15 [3.96]
3.00	= 18 [4.75]
3.25	= 21.5 [5.68]
3.50	= 25 [6.73]

Seals	Seal kit
V = Viton	230000110
Omit = Buna-N	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

P103 722E



Cartridge Valves Technical Information

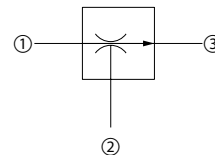
Flow control valves

CP311-1

OPERATION

This valve is a fixed, pressure compensated priority-type flow control valve.

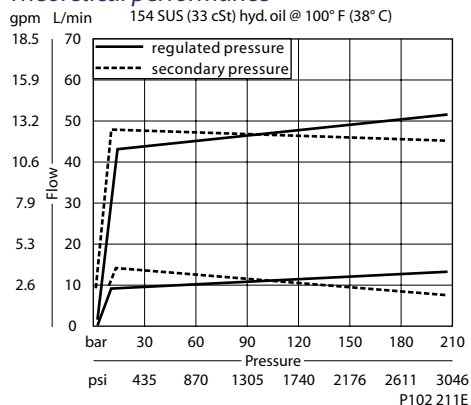
Schematic



P102 205E

SPECIFICATIONS

Theoretical performance



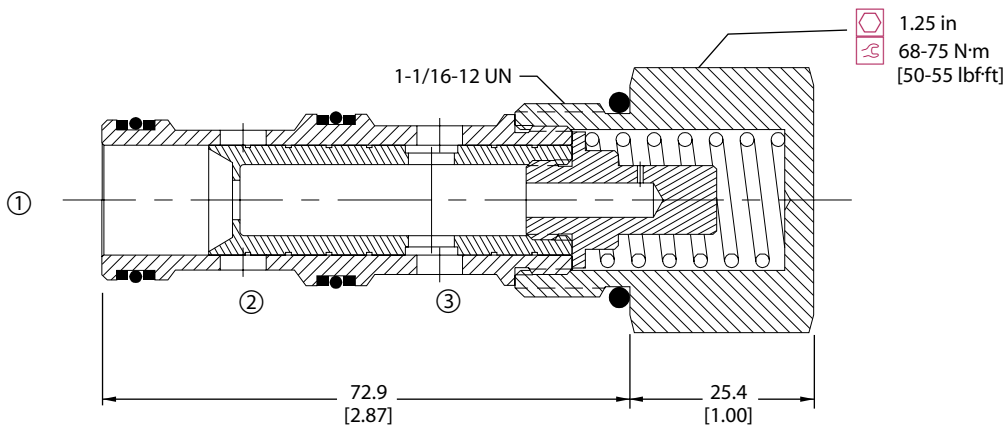
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	45 l/min [12 US gal/min]
Max inlet flow	95 l/min [25 US gal/min]
Weight	0.28 kg [0.61 lb]
Accuracy ± 15%	1.9-7.5 l/min [0.5-2 US gal/min]
± 10%	7.6-45.4 l/min [2-12 US gal/min]
Cavity	CP12-3

DIMENSIONS

mm [in]

Cross-sectional view



P102 210E

ORDERING INFORMATION

CP311 - 1 - B - 12S - 10.0

Seals	Seal kit		
B = Buna-N	120053		
V = Viton	120052		
Housing and ports	Housing P/N	Regulated Flow	
0 = No Housing	No Housing	0.5 L/min [US gal/min]	[0.5]
4B = Al, 1/2 BSP	CP12-3-4B	12.0 = 45.4	[12.0]
6B = Al, 3/4 BSP	CP12-3-6B		
10S = Al, #10 SAE	CP12-3-10S		
12S = Al, #12 SAE	CP12-3-12S		

Other housings available

P102 213E

Flow control valves CP311-1



Cartridge Valves Technical Information

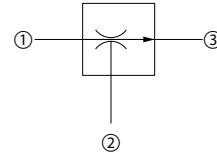
Flow control valves

CP312-1

OPERATION

This valve is a fixed, pressure compensated priority-type flow control valve.

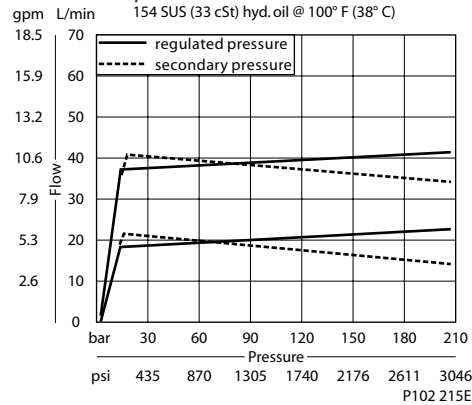
Schematic



P102 205E

SPECIFICATIONS

Theoretical performance



Specifications

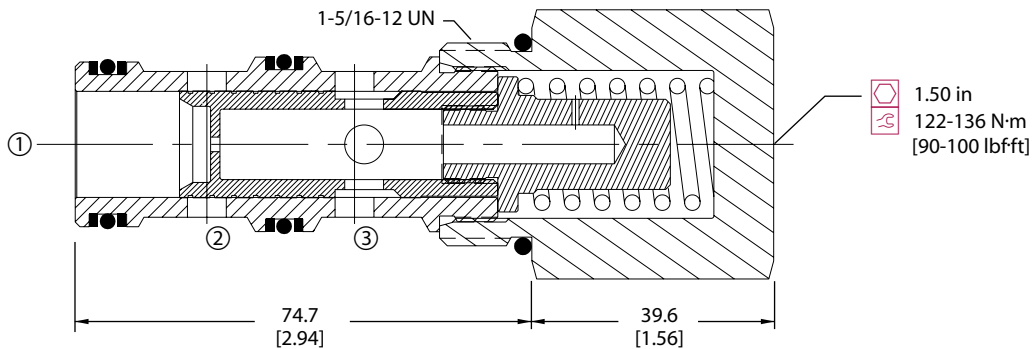
Rated pressure	210 bar [3000 psi]
Max regulated flow	64 l/min [17 US gal/min]
Max inlet flow	130 l/min [34 US gal/min]
Weight	0.53 kg [1.17 lb]
Accuracy ± 15%	1.9-7.5 l/min [0.5-2 US gal/min]
± 10%	7.6-64.3 l/min [2-17 US gal/min]
Cavity	SDC16-3

Flow control valves
CP312-1

DIMENSIONS

mm [in]

Cross-sectional view



P102 214E

ORDERING INFORMATION

CP312 - 1 - B - 16S - 10.0

Seals		Seal kit		Regulated flow
B = Buna-N		120202		L/min [US gal/min]
V = Viton		120203		0.5 = 1.9 [0.5]
				To
Housing and ports		Housing P/N		17.0 = 64.3 [17.0]
0 = No Housing		No Housing		
SE6B = Al, 3/4 BSP		SDC16-3-SE-6B		
SE8B = Al, 1 BSP		SDC16-3-SE-8B		
12S = Al, #12 SAE		CP16-3-12S		
16S = Al, #16 SAE		CP16-3-12S		
Other housings available				

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Cartridge Valves Technical Information

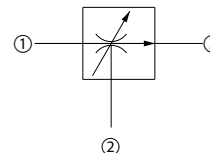
Flow control valves

CP310-2

OPERATION

This valve is a limited adjustment, pressure compensated, priority-type flow control valve.

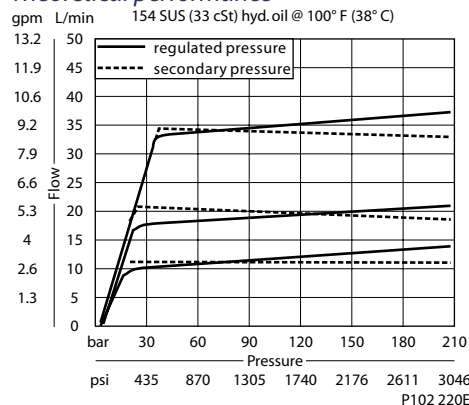
Schematic



P102 218E

SPECIFICATIONS

Theoretical performance



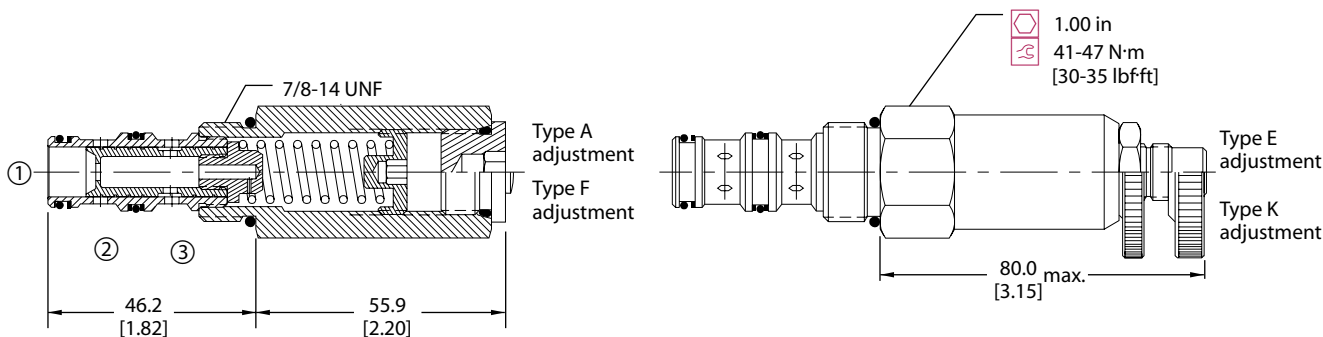
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	23 l/min [6 US gal/min]
Max inlet flow	38 l/min [10 US gal/min]
Weight	0.24 kg [0.52 lb]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



P102 219E

ORDERING INFORMATION

CP310 - 2 - B - 8S - A - 2.5

<p>Seals B = Buna-N V = Viton</p> <p>Seal kit 120240 120241</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>Housing P/N No Housing SDC10-3-SE-3B SDC10-3-SE-4B CP10-3-6S CP10-3-8S</p>	<p>Regulated Flow L/min [US gal/min] 0.1 = .4 [0.1] To 6.0 = 22.7 [6.0]</p> <p>Adjustment option A = Internal E = External F = Tamper resistant K = Knob</p>
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Cartridge Valves Technical Information

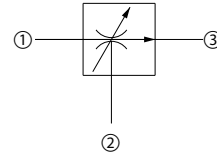
Flow control valves

VRC 06

OPERATION

This valve is a limited adjustment, pressure compensated, priority-type flow control valve.

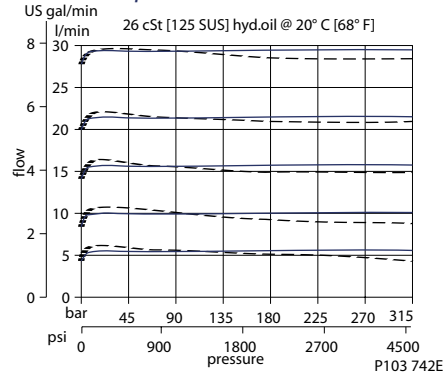
Schematic



P102 218E

SPECIFICATIONS

Theoretical performance



Specifications

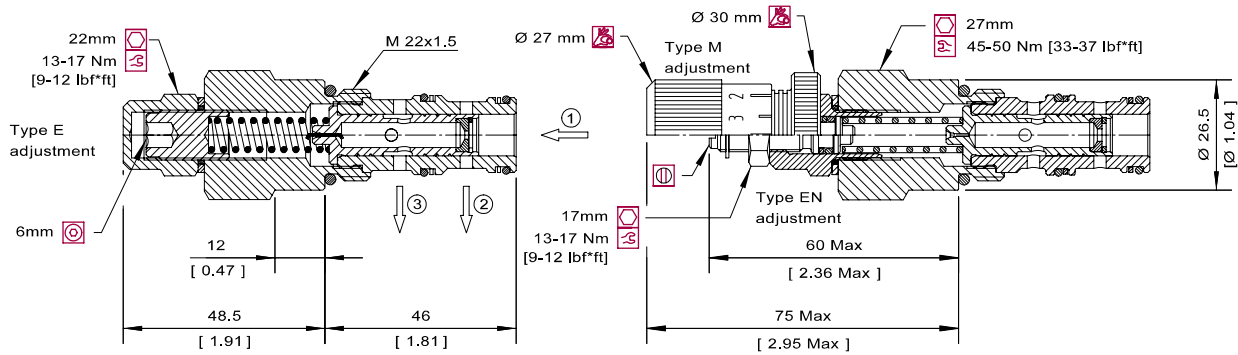
Rated pressure	315 bar [4500 psi]
Max regulated flow	30 l/min [8 US gal/min]
Max inlet flow	50 l/min [13 US gal/min]
Weight	0.21 kg [0.46 lb]
Cavity	NCS06/3

Flow control valves
VRC 06

DIMENSIONS

mm [in]

Cross-sectional view



P103 741

ORDERING INFORMATION

VRC 06 - EN-2.0 - SE3/8 - V

Type of adjustment
E = Internal screw
EN = External screw
M = Handwheel

Orifice size

mm	L/min	[US gal/m]
1.25	= 1-4	[0.3-1.1]
2.0	= 3-10	[0.8-2.5]
3.0	= 6-20	[1.6-5.3]
3.5	= 10-30	[2.6-7.9]

other orifices available
consult factory

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
SE65 = AL, #6 SAE
SE85 = AL, #8 SAE
Other housings available

Housing P/N
No Housing
NCS06/3-SE-3/8
NCS06/3-SE-1/2
NCS06/3-SE-65
NCS06/3-SE-85

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Cartridge Valves Technical Information

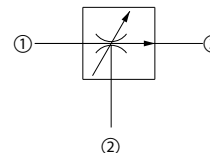
Flow control valves

VRC 12

OPERATION

This valve is a limited adjustment, pressure compensated, priority-type flow control valve.

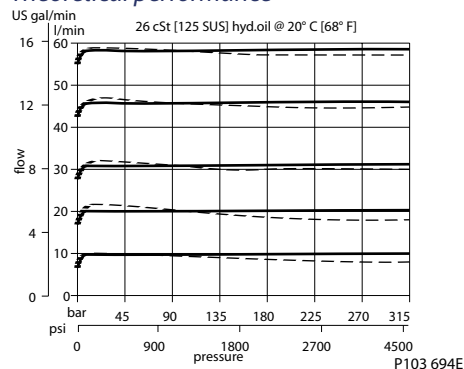
Schematic



P102 218E

SPECIFICATIONS

Theoretical performance



Specifications

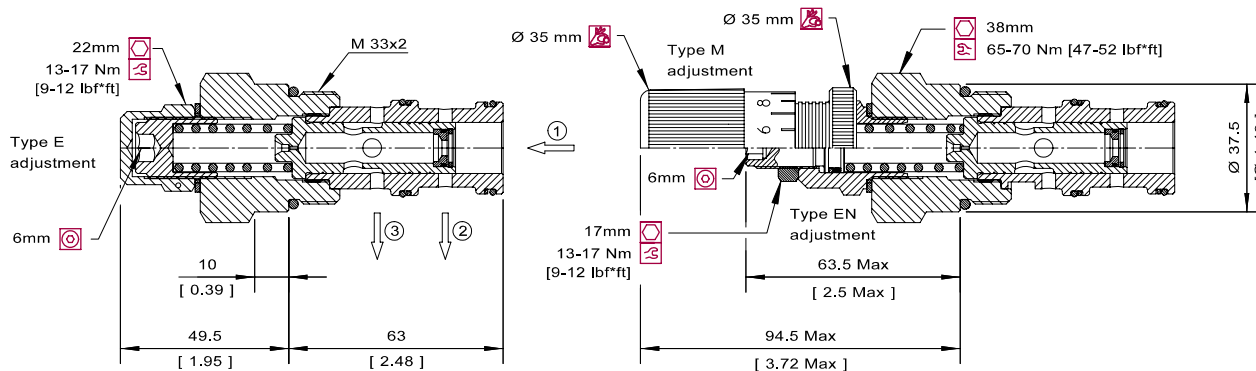
Rated pressure	315 bar [4500 psi]
Max regulated flow	73 l/min [19 US gal/min]
Max inlet flow	100 l/min [26 US gal/min]
Weight	0.50 kg [1.10 lb]
Cavity	NCS12/3

Flow control valves
VRC 12

DIMENSIONS

Cross-sectional view

mm [in]



P103 666

ORDERING INFORMATION

VRC 12 - EN-1.5 - SE1/2 - V

Adjustment

E = Internal screw
EN = External screw
M = Handwheel

Orifice size

mm	L/min	[US gal/min]
1.25	= 2.5-6.5	[0.7-1.7]
2.50	= 6-16	[1.6-4.2]
3.50	= 9-32	[2.4-8.4]
4.00	= 16-40	[4.2-10.6]
5.00	= 25-60	[6.6-15.8]
5.75	= 30-73	[7.9-19.3]

Seals

V = Viton
Omit = Buna-N

Seal kit

230000360
230000130

Housing and ports

00 = No Housing
SE1/2 = AL, 1/2 BSP
SE3/4 = AL, 3/4 BSP
SE8S = AL, #8 SAE
SE12S = AL, #12 SAE
Other housings available

Housing P/N

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

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Cartridge Valves Technical Information

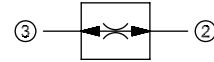
Flow control valves

CP300-6

OPERATION

This valve is a fixed setting, pressure compensated, bi-directional flow control valve. NOTE: Port 1 must be blocked for proper operation.

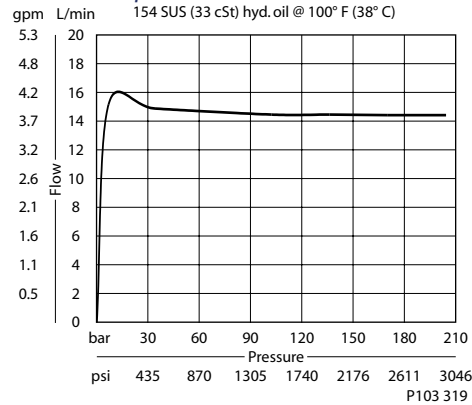
Schematic



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SPECIFICATIONS

Theoretical performance



Specifications

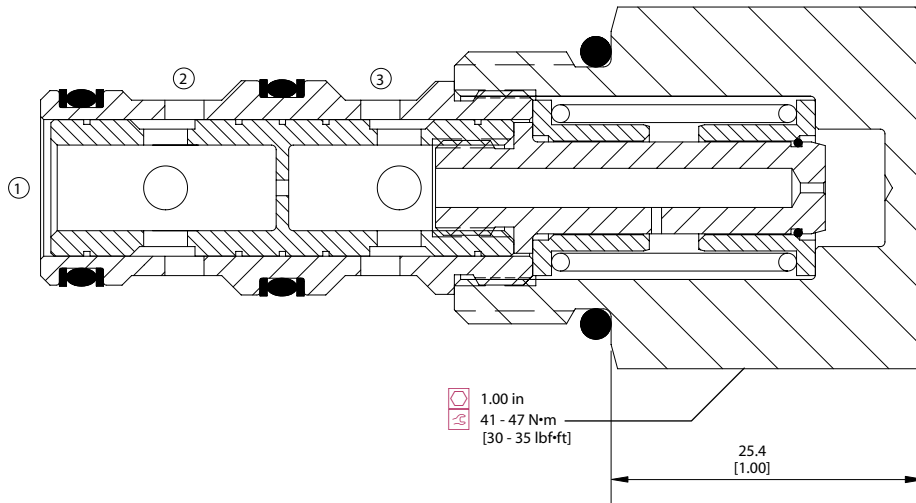
Rated pressure	210 bar [3000 psi]
Max regulated flow	23 l/min [6 US gal/min]
Weight	0.13 kg [0.29 lb]
Accuracy ± 20%	0.4-2.2 l/min [0.1-0.6 US gal/min]
± 15%	2.4-6.8 l/min [0.6-1.8 US gal/min]
± 10%	6.9-23 l/min [1.8-6 US gal/min]
Cavity	SDC10-3

Flow control valves
CP300-6

DIMENSIONS

mm [in]

Cross-sectional view



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ORDERING INFORMATION

CP300 - 6 - B - 8S - 2.5

Seals	Seal kit
B = Buna-N	120009
V = Viton	120010
Housing and ports	Housing P/N
0 = No Housing	No Housing
SE3B = Al, 3/8 BSP	SDC10-3-SE-3B
SE4B = Al, 1/2 BSP	SDC10-3-SE-4B
6S = Al, #6 SAE	CP10-3-6S
8S = Al, #8 SAE	CP10-3-8S
Other housings available	

Regulated Flow

L/min	[US gal/min]
0.1 = 0.4	[0.1]
6.0 = 23.0	[6.0]

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Cartridge Valves Technical Information

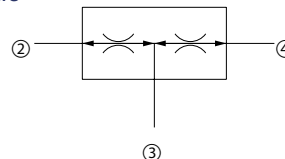
Flow control valves

VDF 06

OPERATION

This valve is a fixed ratio, pressure compensated flow divider/combiner.

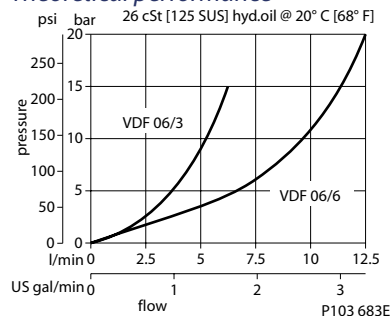
Schematic



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SPECIFICATIONS

Theoretical performance



Specifications

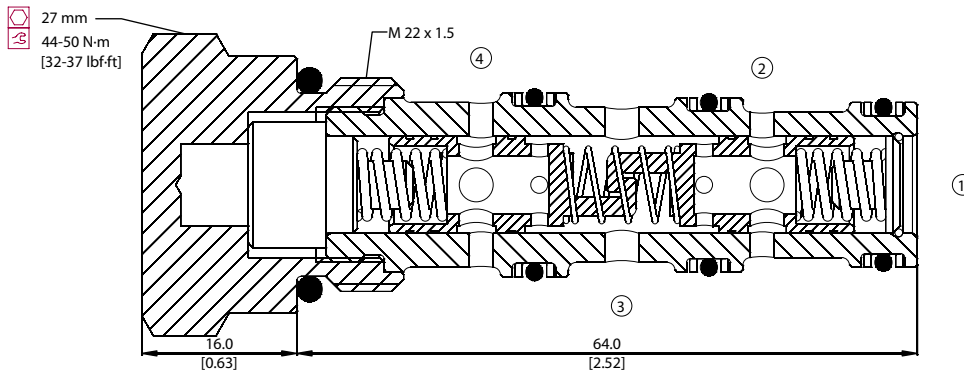
Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	45 l/min [12 US gal/min]
Weight	0.15 kg [0.33 lb]
Cavity	NCS06/4

Flow control valves
VDF 06

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

VDF 06 - 10 - 00 - V

Flow rate
l/min [US gal/min]
3 = Min 3 [0.8] Max 6.5 [1.7]
6 = Min 6 [1.6] Max 12.5 [3.3]
10 = Min 10 [2.6] Max 25 [6.6]
25 = Min 22 [5.8] Max 45 [11.9]

Seals
V = Viton
Omit = Buna-N

Seal kit
230000350
230000610

Housing and ports
00 = No Housing
L3/8 = AL, 3/8 BSP
L3/4 = AL, 3/4 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

P103 710E



Cartridge Valves Technical Information

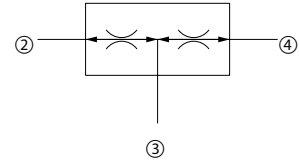
Flow control valves

CP340-1

OPERATION

This valve is a fixed ratio, pressure compensated flow divider/combiner.

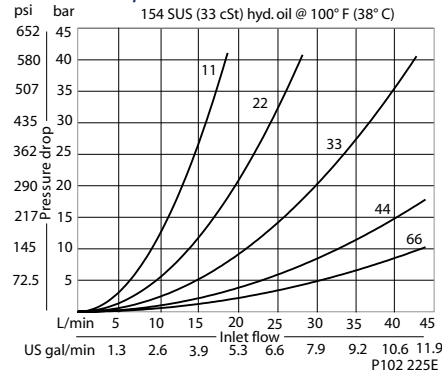
Schematic



P102 223

SPECIFICATIONS

Theoretical performance



Specifications

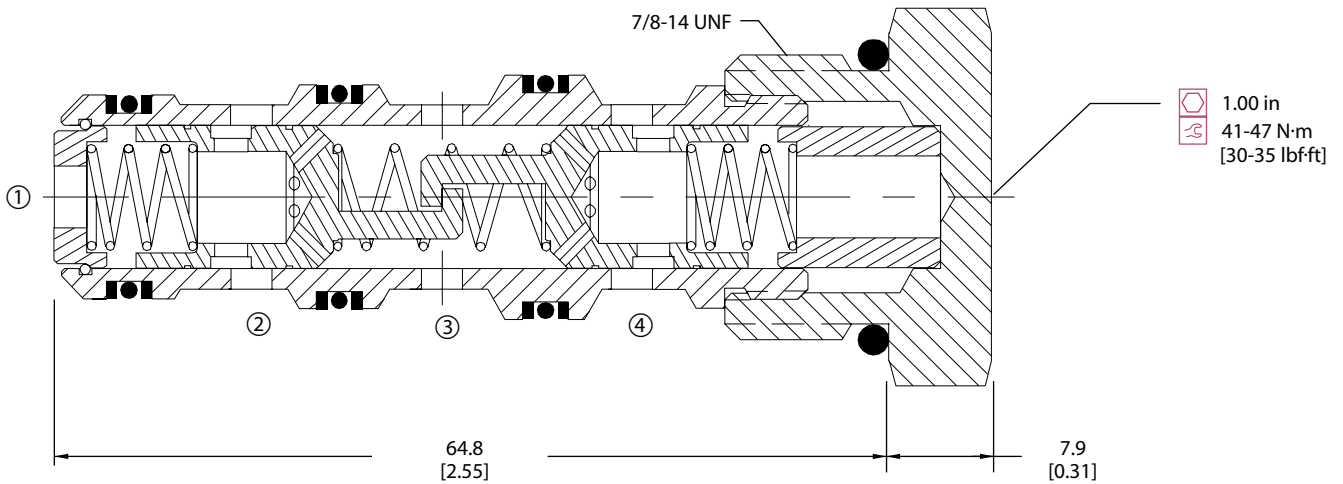
Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	45 l/min [12 US gal/min]
Weight	0.11 kg [0.24 lb]
Cavity	SDC10-4

Flow control valves CP340-1

DIMENSIONS

mm [in]

Cross-sectional view



P102 224E

ORDERING INFORMATION

CP340 - 1 - B - 6S - 44

Seals	Seal kit	Flow settings
B = Buna-N	120023	Code
V = Viton	120024	Flow ratio
		Port 2:Port 4
Housing and ports	Housing P/N	Total flow
0 = No Housing	No Housing	11 1:1 7.6 L/min [2 gpm]
3B = Al, 3/8 BSP	CP10-4-2B-X1	22 1:1 15 L/min [4 gpm]
4B = Al, 1/2 BSP	CP10-4-3B-X1	33 1:1 23 L/min [6 gpm]
4S = Al, #4 SAE	CP10-4-4S-X1	36 1:2 34 L/min [9 gpm]
6S = Al, #6 SAE	CP10-4-6S-X1	44 1:1 30 L/min [8 gpm]
Other housings available		46 2:3 38 L/min [10 gpm]
		63 2:1 34 L/min [9 gpm]
		64 3:2 38 L/min [10 gpm]
		66 1:1 45 L/min [12 gpm]

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Cartridge Valves Technical Information

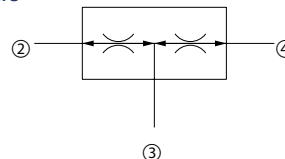
Flow control valves

CP341-1

OPERATION

This valve is a fixed ratio, pressure compensated flow divider/combiner.

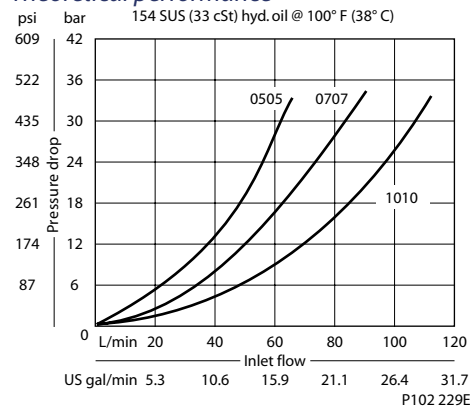
Schematic



P102 223

SPECIFICATIONS

Theoretical performance



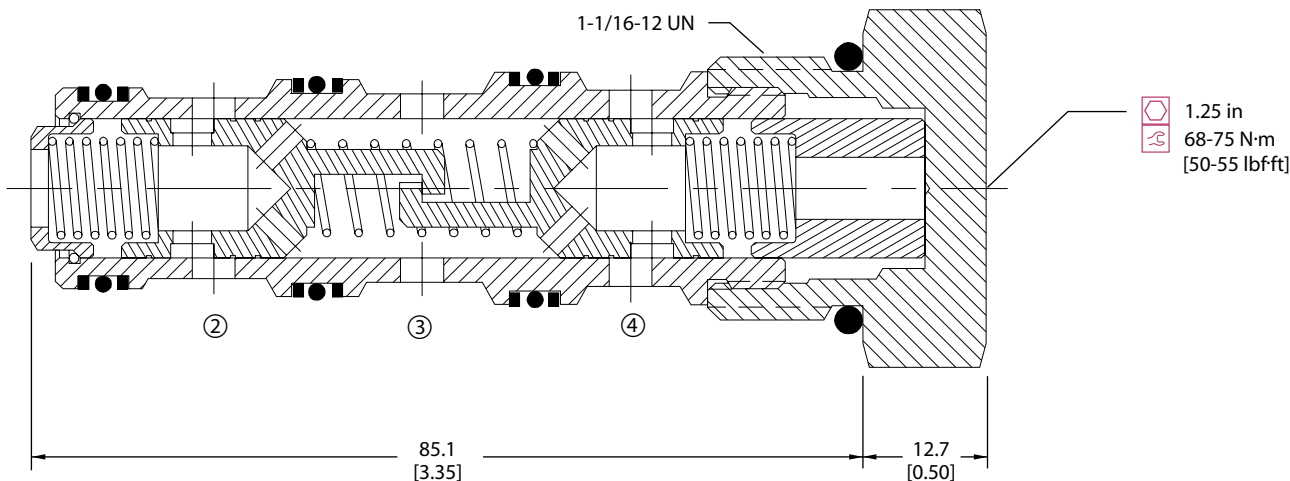
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	75 l/min [20 US gal/min]
Weight	0.23 kg [0.50 lb]
Cavity	CP12-4

DIMENSIONS

mm [in]

Cross-sectional view



P102 228E

ORDERING INFORMATION

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

Seal kit

120262
120263

Housing P/N

No Housing
CP12-4-4B-X1
CP12-4-6B-X1
CP12-4-10S-X1
CP12-4-12S-X1

CP341 - 1 - B - 10S - 0707

Flow settings

Code	Flow ratio Port 2:Port 4	Total flow
0505	1:1	38 L/min [10 gpm]
0507	5:7	45 L/min [12 gpm]
0510	1:2	57 L/min [15 gpm]
0707	1:1	53 L/min [14 gpm]
0710	7:10	64 L/min [17 gpm]
1010	1:1	76 L/min [20 gpm]

P102 231E



Cartridge Valves Technical Information

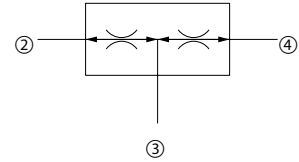
Flow control valves

CP342-1

OPERATION

This valve is a fixed ratio, pressure compensated flow divider/combiner.

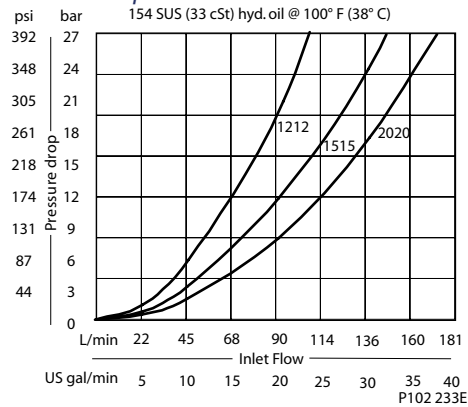
Schematic



P102 223

SPECIFICATIONS

Theoretical performance



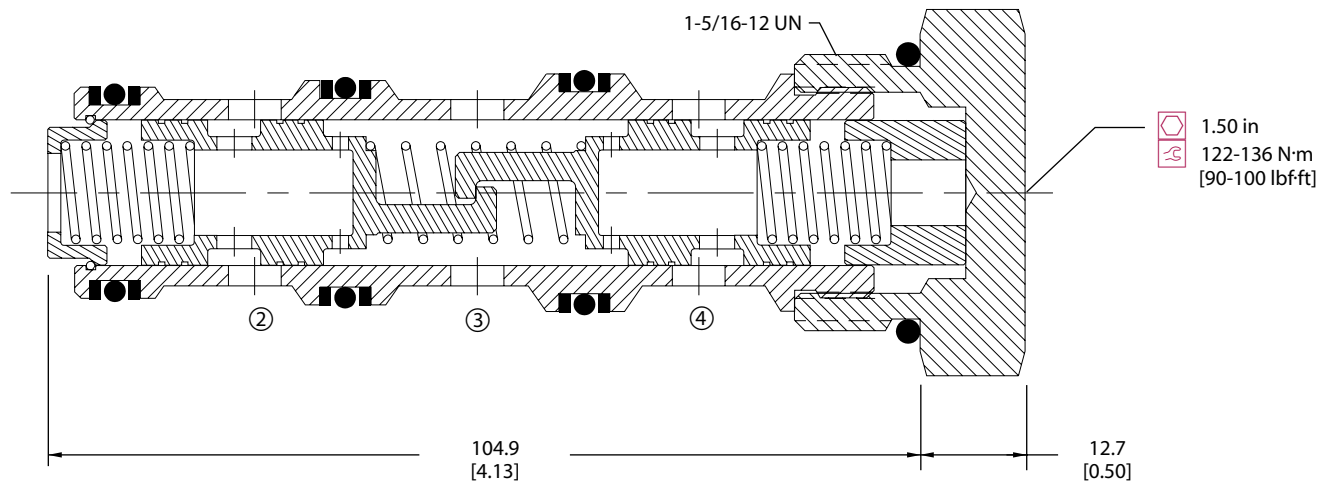
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	150 l/min [40 US gal/min]
Weight	0.37 kg [0.81 lb]
Cavity	CP16-4

DIMENSIONS

mm [in]

Cross-sectional view



P102 232E

ORDERING INFORMATION

CP342 - 1 - B - 16S - 1515

Seals	Seal kit	Flow settings	
B = Buna-N	120025	Code	Flow ratio
V = Viton	120026		Port 2:Port 4
Housing and ports	Housing P/N		Total flow
0 = No Housing	No Housing	1020	1:2 30 gpm [114 L/min]
6B = Al, 3/4 BSP	CP16-4-6B-X1	1212	1:1 24 gpm [91 L/min]
8B = Al, 1 BSP	CP16-4-8B-X1	1215	4:5 27 gpm [102 L/min]
12S = Al, #12 SAE	CP16-4-12S-X1	1220	3:5 32 gpm [121 L/min]
16S = Al, #16 SAE	CP16-4-16S-X1	1512	5:4 27 gpm [102 L/min]
Other housings available		1515	1:1 30 gpm [114 L/min]
		1520	3:4 35 gpm [132 L/min]
		2012	5:3 32 gpm [121 L/min]
		2015	4:3 35 gpm [132 L/min]
		2020	1:1 40 gpm [151 L/min]

P102 235E

Flow control valves CP342-1



Cartridge Valves Technical Information

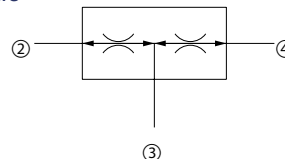
Flow control valves

CP342-3

OPERATION

This valve is a fixed ratio, pressure compensated flow divider/combiner.

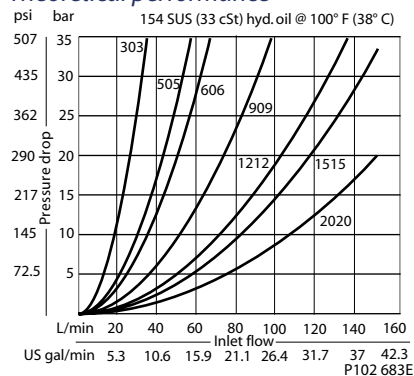
Schematic



P102 223

SPECIFICATIONS

Theoretical performance



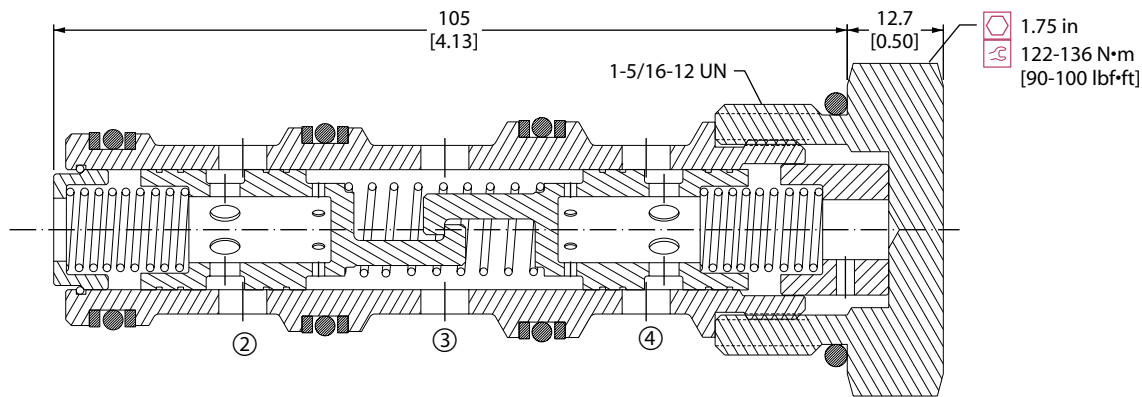
Specifications

Rated pressure	450 bar [6500 psi]
Rated flow at 7 bar [100 psi]	150 l/min [40 US gal/min]
Weight	0.37 kg [0.81 lb]
Cavity	CP16-4

DIMENSIONS

mm [in]

Cross-sectional view



P102 652

ORDERING INFORMATION

		CP342-3-U-16S-0505	Flow settings	
Seals	Seal kit		Code	Flow ratio Port 2:Port 4
U = Urethane	120677		0303	1:1
			0505	1:1
			0606	1:1
			0909	1:1
			1212	1:1
			1515	1:1
			2020	1:1
			1220	3:5
			1215	4:5
			1520	3:4
			2012	5:3
			1512	5:4
			2015	4:3
			1020	1:2
Housing and ports	Housing P/N			Total flow
0 = No Housing	No Housing			23 L/min [6 gpm]
S6B = Al, 3/4 BSP	CP16-4-S6B-X1			38 L/min [10 gpm]
S8B = Al, 1 BSP	CP16-4-S8B-X1			45 L/min [12 gpm]
S12S = Al, #12 SAE	CP16-4-S12S-X1			68 L/min [18 gpm]
S16S = Al, #16 SAE	CP16-4-S16S-X1			91 L/min [24 gpm]
Other housings available				114 L/min [30 gpm]
				151 L/min [40 gpm]
				121 L/min [32 gpm]
				102 L/min [27 gpm]
				132 L/min [35 gpm]
				121 L/min [32 gpm]
				102 L/min [27 gpm]
				132 L/min [35 gpm]
				114 L/min [30 gpm]

P102 899E



Cartridge Valves Technical Information

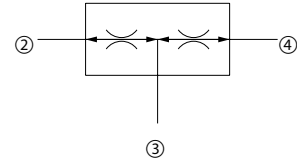
Flow control valves

CP343-1

OPERATION

This valve is a fixed ratio, pressure compensated flow divider/combiner.

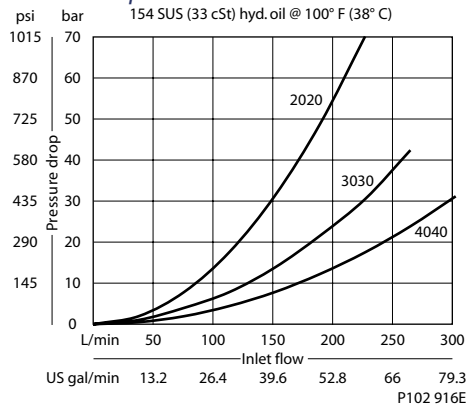
Schematic



P102 223

SPECIFICATIONS

Theoretical performance



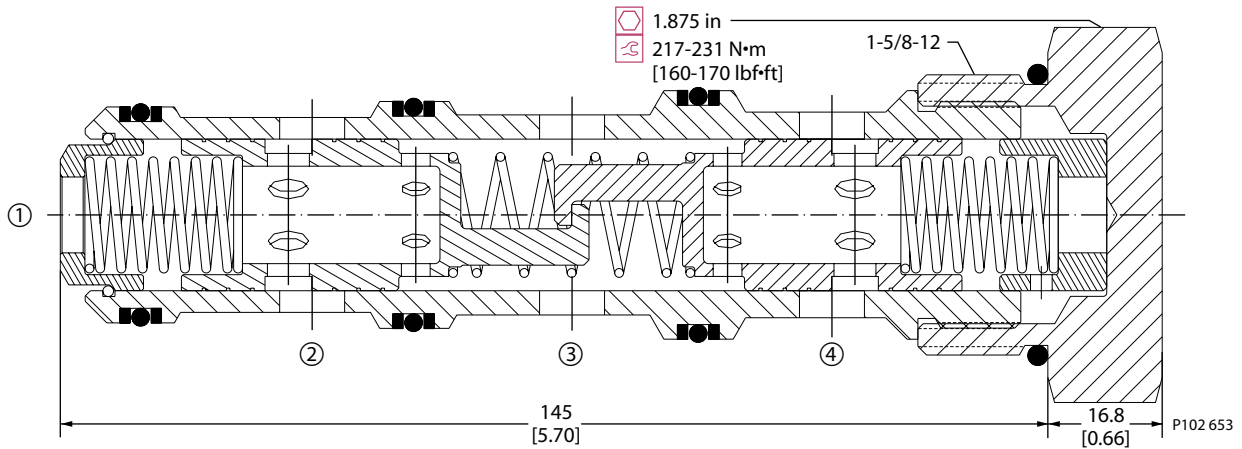
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	340 l/min [90 US gal/min]
Weight	1.13 kg [2.50 lb]
Cavity	SDC20-4

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP343-1-B-16S-4545

Housing and ports		Housing P/N	Flow settings		Total flow
			Code	Flow ratio Port 2:Port 4	
0	= No Housing	No Housing	2020	1:1	151 L/min [40 gpm]
8B	= Al, 1 BSP	SDC20-4-8B-X1	2525	1:1	189 L/min [50 gpm]
10B	= Al, 1-1/4 BSP	SDC20-4-10B-X1	3030	1:1	227 L/min [60 gpm]
16S	= Al, #16 SAE	SDC20-4-16S-X1	3535	1:1	265 L/min [70 gpm]
20S	= Al, #20 SAE	SDC20-4-20S-X1	4020	2:1	227 L/min [60 gpm]
Other housings available			4040	1:1	303 L/min [80 gpm]
Seals		Seal kit	4530	3:2	284 L/min [75 gpm]
B	= Buna-N	120181	4545	1:1	341 L/min [90 gpm]
V	= Viton	120182			

P102 898E



Cartridge Valves Technical Information

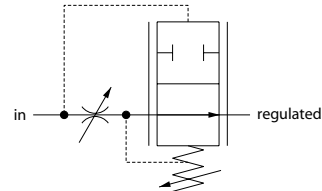
Flow control valves

2F74

OPERATION

This valve is a fully adjustable pressure compensated flow control valve.

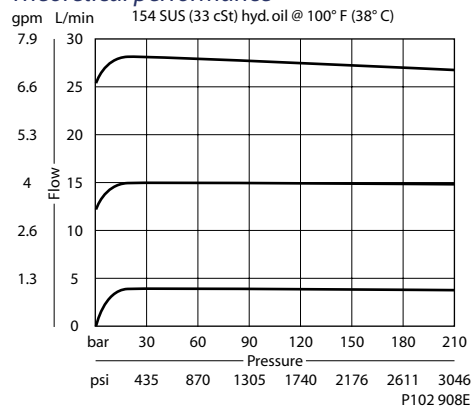
Schematic



P102 667E

SPECIFICATIONS

Theoretical performance



Specifications

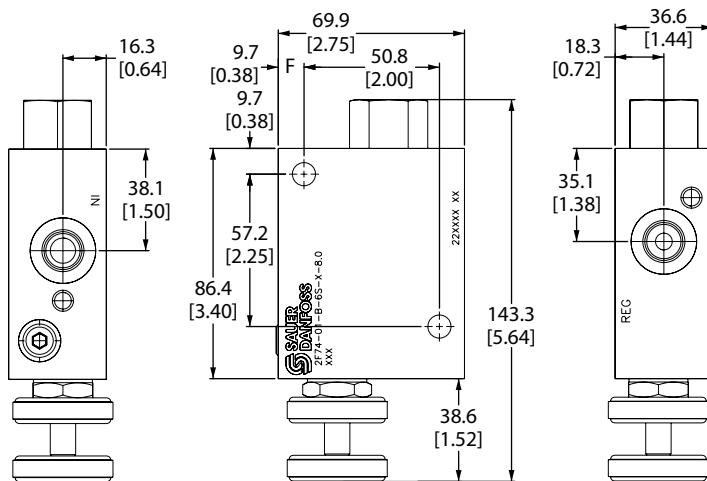
Rated pressure	210 bar [3000 psi]
Max regulated flow	30 l/min [8 US gal/min]
Weight	0.66 kg [1.46 lb]
Cavity	none

Flow control valves
2F74

DIMENSIONS

mm [in]

Cross-sectional view



P102 663

ORDERING INFORMATION

2F74-01-B-6S-E-8

Adjustment options
E = External adjustment
K = Knob adjustment

Body and ports
6S = Aluminum, #6 SAE

Seals
B = Buna-N
V = Viton

Adjustment range
Code = 0-8 gpm

Seal kits
Consult Factory
Consult Factory

P102 636E



Cartridge Valves Technical Information

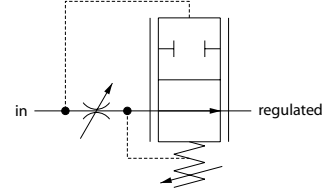
Flow control valves

2F75

OPERATION

This valve is a fully adjustable pressure compensated flow control valve.

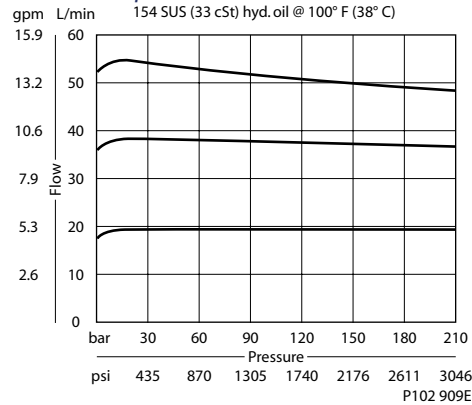
Schematic



P102 667E

SPECIFICATIONS

Theoretical performance



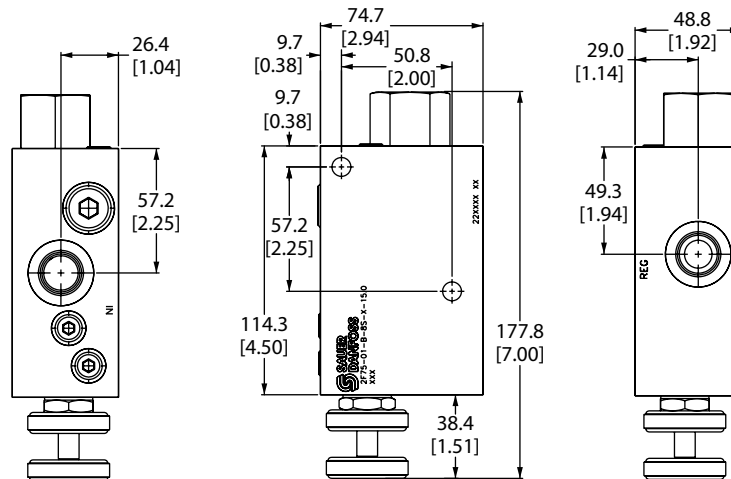
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	60 l/min [16 US gal/min]
Weight	0.66 kg [1.46 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



P102 664

ORDERING INFORMATION

2F75-01-B-8S-E-15

- Adjustment range**
Code = 0-15 gpm
- Adjustment options**
E = External adjustment
K = Knob adjustment
- Body and ports**
8S = Aluminum, #8 SAE
- Seals**
B = Buna-N
V = Viton
- Seal kits**
Consult Factory
Consult Factory

P102 637E



Cartridge Valves Technical Information

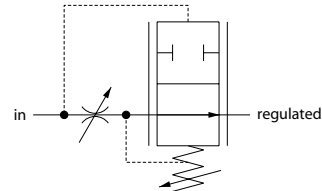
Flow control valves

2F76

OPERATION

This valve is a fully adjustable pressure compensated flow control valve.

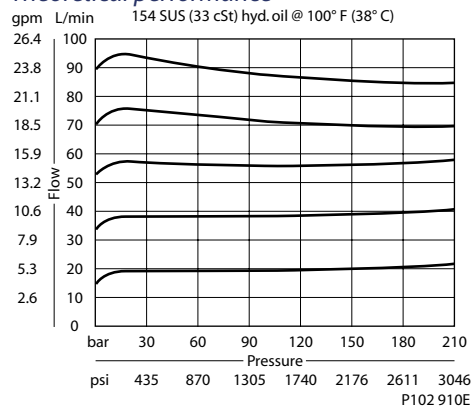
Schematic



P102 667E

SPECIFICATIONS

Theoretical performance



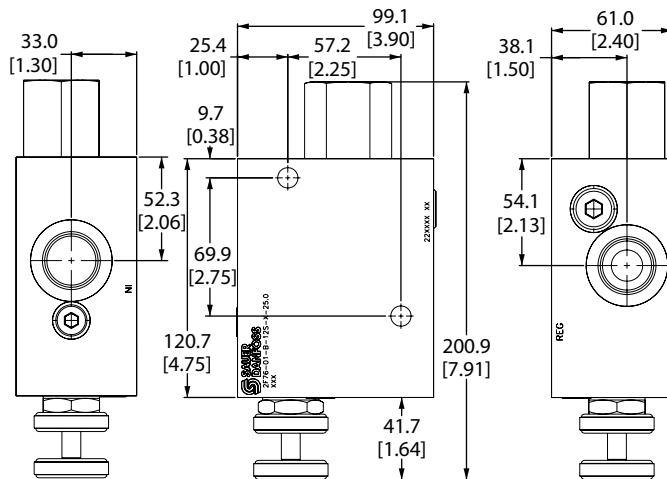
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	95 l/min [25 US gal/min]
Weight	0.79 kg [1.74 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



P102 665

ORDERING INFORMATION

2F76-01-B-12S-E-25

Adjustment options
E = External adjustment
K = Knob adjustment

Body and ports
12S = Aluminum, #12 SAE

Seals

B = Buna-N
V = Viton

Seal kits
Consult Factory
Consult Factory

Adjustment range
Code = 0-25 gpm



Cartridge Valves Technical Information

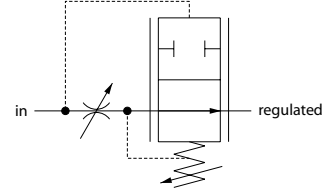
Flow control valves

2F77

OPERATION

This valve is a fully adjustable pressure compensated flow control valve.

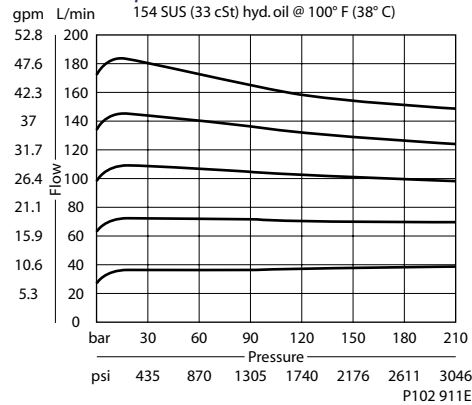
Schematic



P102 667E

SPECIFICATIONS

Theoretical performance



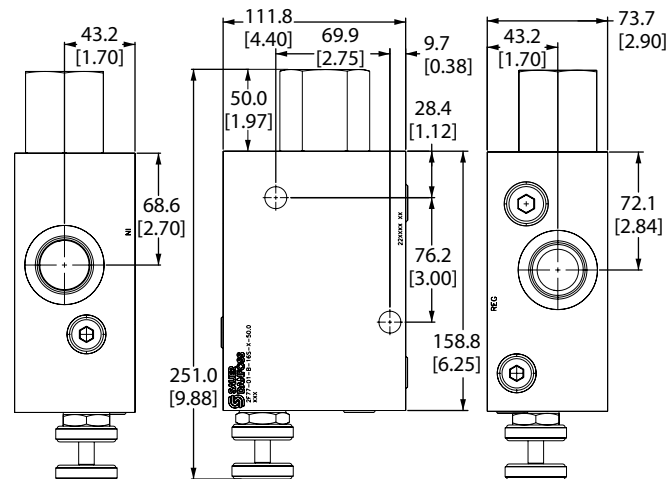
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	190 l/min [50 US gal/min]
Weight	1.45 kg [3.20 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



P102 666

ORDERING INFORMATION

2F77-01-B-16S-E-50

- Adjustment range**
Code = 0-50 gpm
- Adjustment options**
E = External adjustment
K = Knob adjustment
- Body and ports**
16S = Aluminum, #16 SAE
- Seals**
B = Buna-N
V = Viton
- Seal kits**
Consult Factory
Consult Factory

P102 639E



Cartridge Valves Technical Information

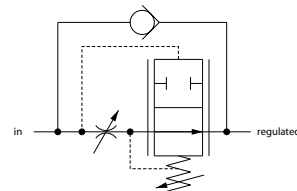
Flow control valves

2FC74

OPERATION

This valve is a fully adjustable pressure compensated flow control with free reverse flow.

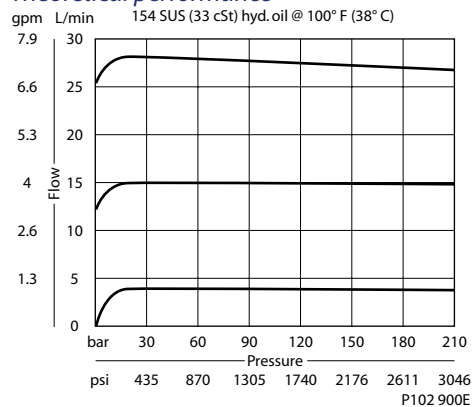
Schematic



P102 668E

SPECIFICATIONS

Theoretical performance



Specifications

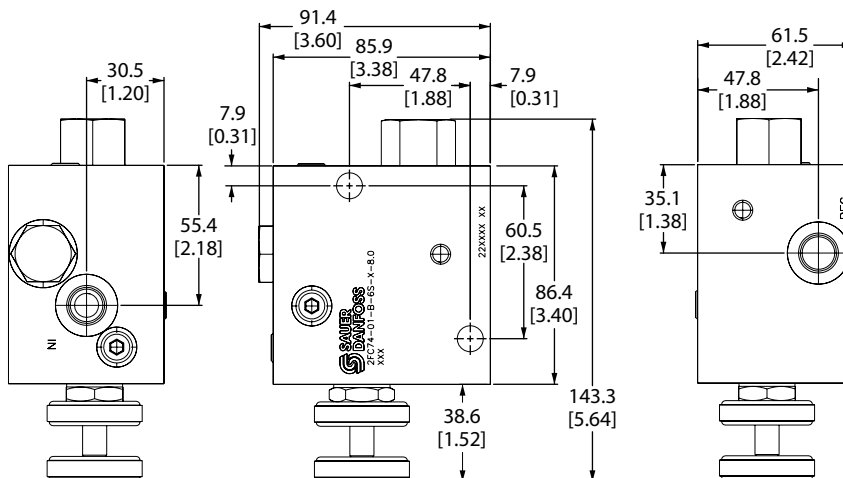
Rated pressure	210 bar [3000 psi]
Max regulated flow	30 l/min [8 US gal/min]
Weight	0.79 kg [1.74 lb]
Cavity	none

Flow control valves
2FC74

DIMENSIONS

mm [in]

Cross-sectional view



P102 669

ORDERING INFORMATION

2FC74-01-B-6S-E-8.0

- Adjustment options**
E = External adjustment
K = Knob adjustment
- Body and ports**
6S = Aluminum, #6 SAE
- Seals**
B = Buna-N
V = Viton
- Adjustment range**
Code = 0-8 gpm
- Seal kits**
Consult Factory

P102 640E



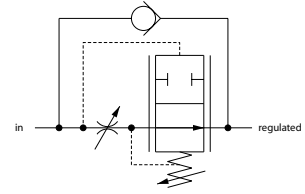
Cartridge Valves Technical Information

Flow control valves 2FC75

OPERATION

This valve is a fully adjustable pressure compensated flow control with free reverse flow.

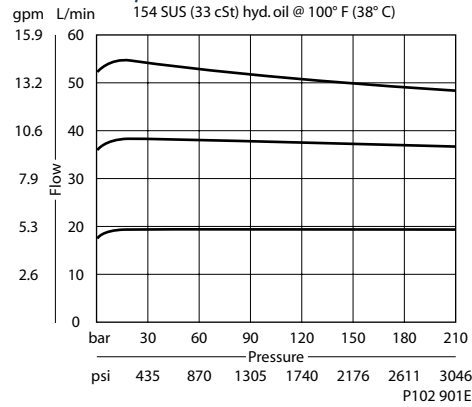
Schematic



P102 668E

SPECIFICATIONS

Theoretical performance



Specifications

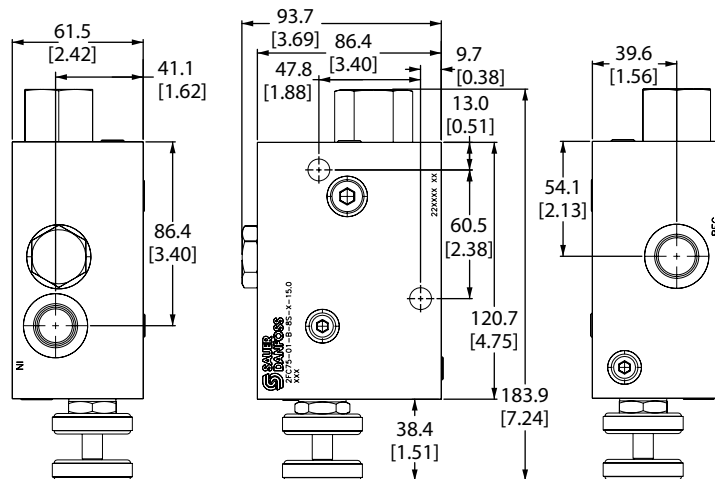
Rated pressure	210 bar [3000 psi]
Max regulated flow	60 l/min [16 US gal/min]
Weight	0.79 kg [1.74 lb]
Cavity	none

Flow control valves
2FC75

DIMENSIONS

mm [in]

Cross-sectional view



P102 670

ORDERING INFORMATION

2FC75-01-B-8S-E-15

- Adjustment options**
E = External adjustment
K = Knob adjustment
- Body and ports**
8S = Aluminum, #8 SAE
- Seals**
B = Buna-N
V = Viton
- Adjustment range**
Code = 0-15 gpm
- Seal kits**
Consult Factory

P102 641E



Cartridge Valves Technical Information

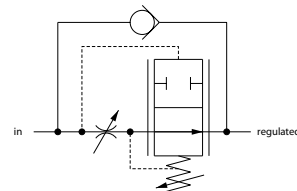
Flow control valves

2FC76

OPERATION

This valve is a fully adjustable pressure compensated flow control with free reverse flow.

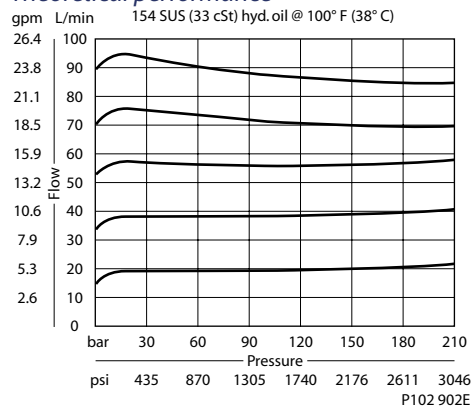
Schematic



P102 668E

SPECIFICATIONS

Theoretical performance



Specifications

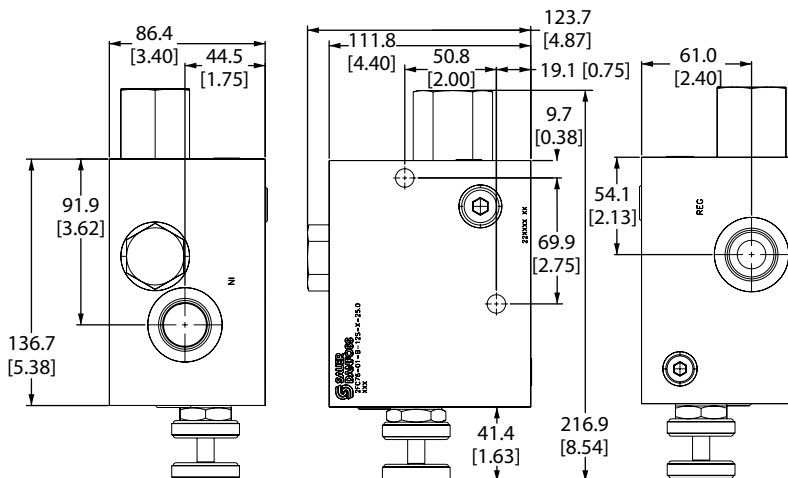
Rated pressure	210 bar [3000 psi]
Max regulated flow	95 l/min [25 US gal/min]
Weight	1.02 kg [2.25 lb]
Cavity	none

Flow control valves
2FC76

DIMENSIONS

mm [in]

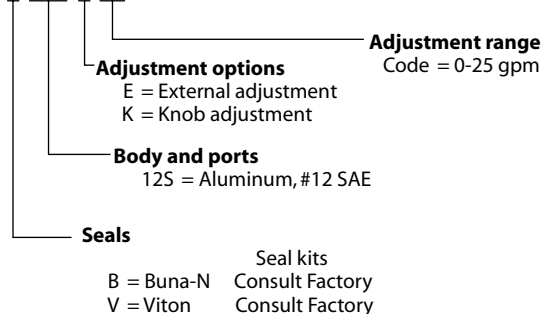
Cross-sectional view



P102 671

ORDERING INFORMATION

2FC76-01-B-12S-E-25



P102 642E



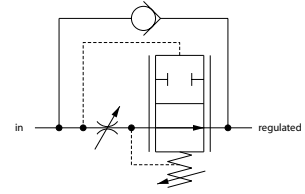
Cartridge Valves Technical Information

Flow control valves 2FC77

OPERATION

This valve is a fully adjustable pressure compensated flow control with free reverse flow.

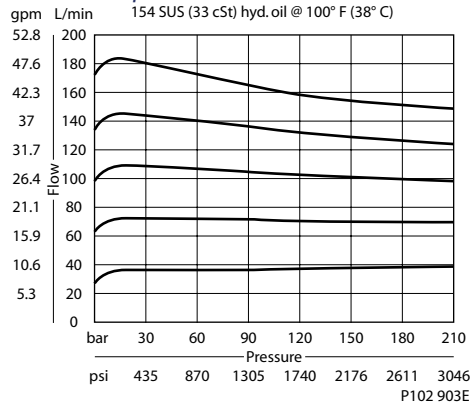
Schematic



P102 668E

SPECIFICATIONS

Theoretical performance



Specifications

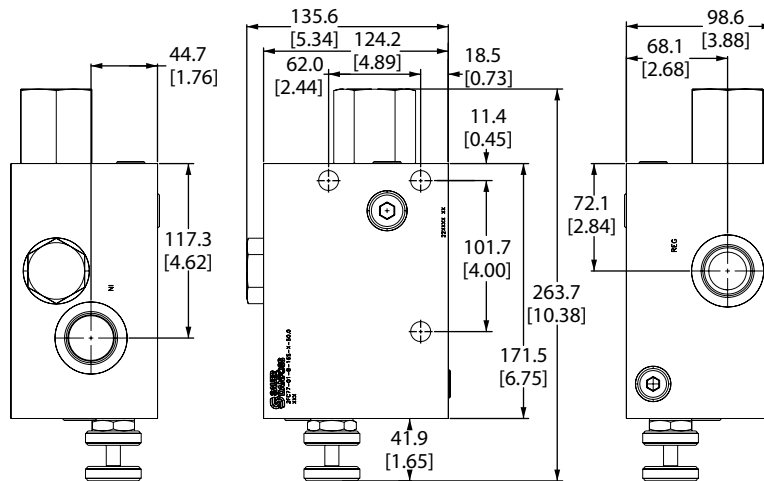
Rated pressure	210 bar [3000 psi]
Max regulated flow	190 l/min [50 US gal/min]
Weight	1.77 kg [3.90 lb]
Cavity	none

Flow control valves
2FC77

DIMENSIONS

mm [in]

Cross-sectional view



P102 672

ORDERING INFORMATION

2FC77-01-B-16S-E-50

Adjustment options
E = External adjustment
K = Knob adjustment

Body and ports
16S = Aluminum, #16 SAE

Seals
B = Buna-N
V = Viton

Seal kits
Consult Factory
Consult Factory

Adjustment range
Code = 0-50 gpm

P102 643E



Cartridge Valves Technical Information

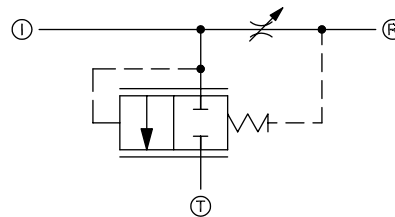
Flow control valves

2F84

OPERATION

This valve is a fully-adjustable, bypass-type, pressure compensated flow control.

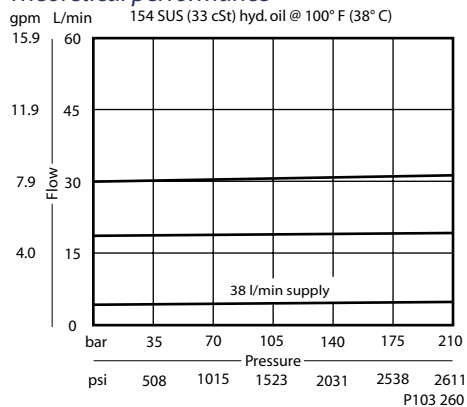
Schematic



P103 507

SPECIFICATIONS

Theoretical performance



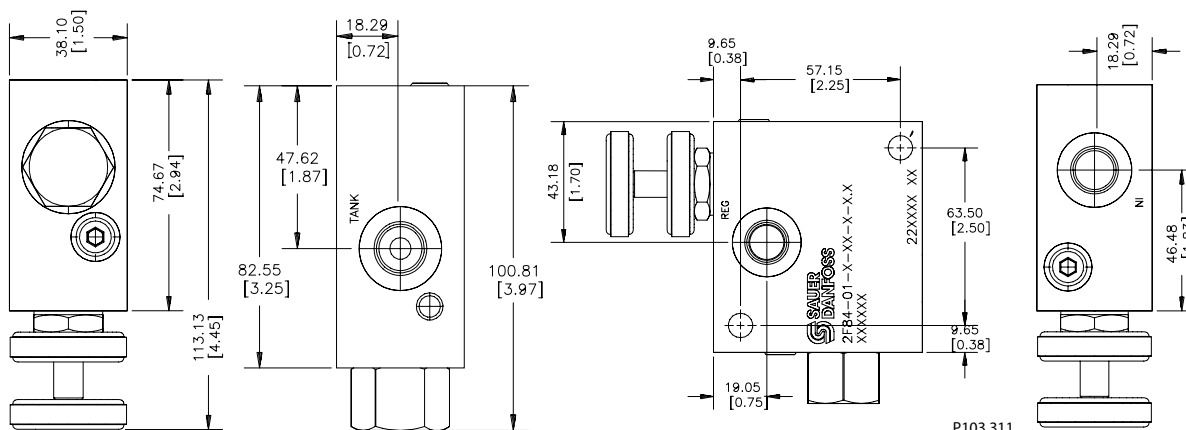
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	30 l/min [8 US gal/min]
Max inlet flow	61 l/min [16 US gal/min]
Weight	0.79 kg [1.74 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

2F84-01-B-6S-K-8.0

Adjustment options

E = External adjustment
K = Knob adjustment

Replacement Nut 322417
Replacement Jam Knob 322304,
Adjustment Knob 322305

Body and Housing

6S = AL, #6 SAE
3B = AL 3/8 BSP

Seals

B = Buna-N
V = Viton

Seal kits
Consult Factory
Consult Factory

P103 264



Cartridge Valves Technical Information

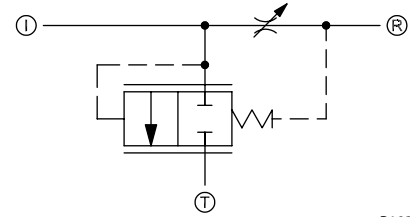
Flow control valves

2F85

OPERATION

This valve is a fully-adjustable, bypass-type, pressure compensated flow control.

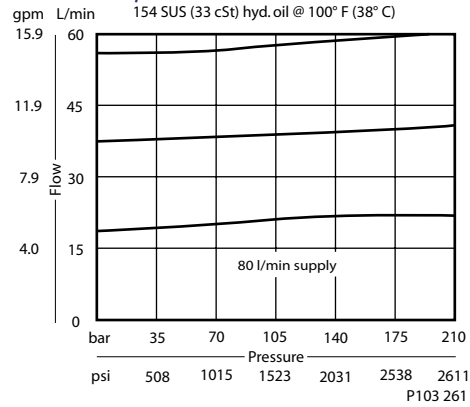
Schematic



P103 507

SPECIFICATIONS

Theoretical performance



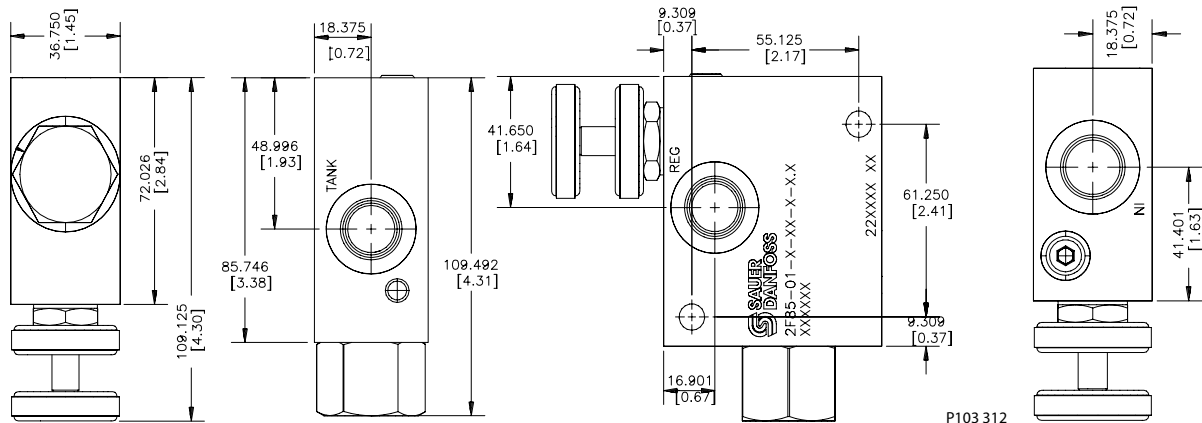
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	61 l/min [16 US gal/min]
Max inlet flow	95 l/min [25 US gal/min]
Weight	0.79 kg [1.74 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

2F85-01-B-8S-K-15.0

Adjustment options

- E = External Replacement Nut 322417
- K = Knob Replacement Jam Knob 322304, Adjustment Knob 322305

Body and Housing

- 8S = AL, #8 SAE
- 4B = AL, 1/2 BSP

Seals

- B = Buna-N Seal kits Consult Factory
- V = Viton Seal kits Consult Factory

P103 265



Cartridge Valves Technical Information

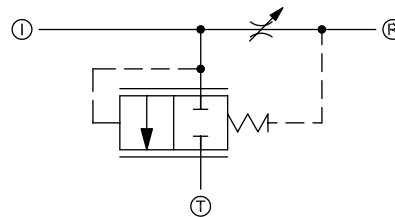
Flow control valves

2F86

OPERATION

This valve is a fully-adjustable, bypass-type, pressure compensated flow control.

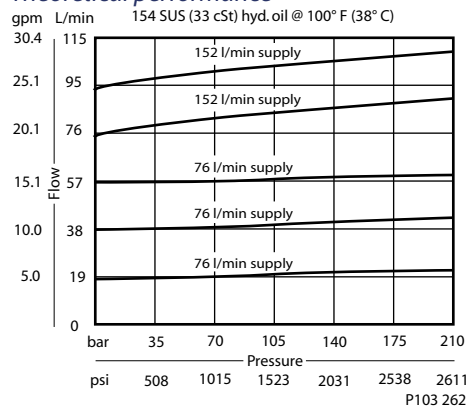
Schematic



P103 507

SPECIFICATIONS

Theoretical performance



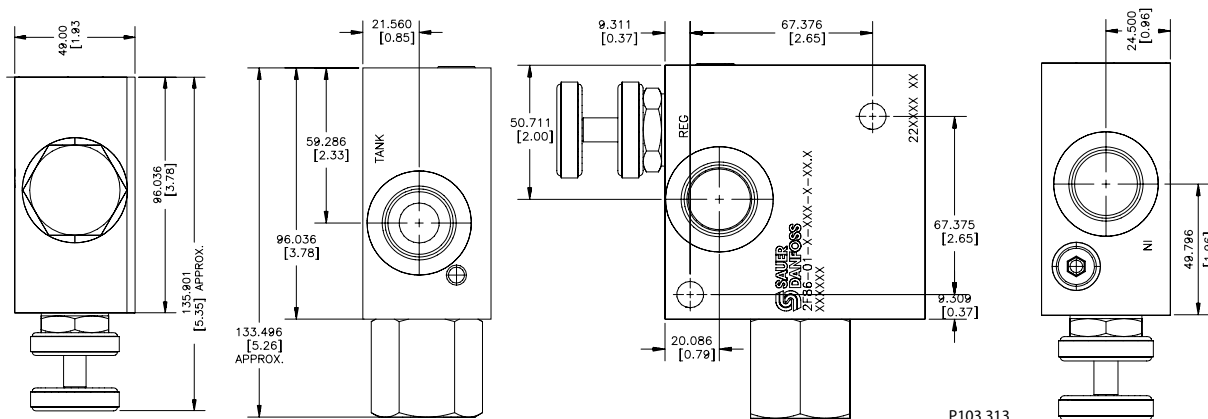
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	95 l/min [25 US gal/min]
Max inlet flow	568 l/min [150 US gal/min]
Weight	0.00 kg [1.83 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

2F86-01-B-12S-K-25.0

Adjustment options

- E = External Replacement Nut 322417
- K = Knob Replacement Jam Knob 322304, Adjustment Knob 322305

Body and Housing

- 12S = AL, #12 SAE
- 6B = AL, 3/4 BSP

Seals

- B = Buna-N Seal kits Consult Factory
- V = Viton Seal kits Consult Factory

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Cartridge Valves Technical Information

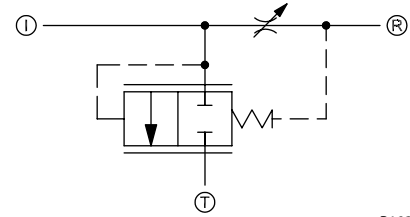
Flow control valves

2F87

OPERATION

This valve is a fully-adjustable, bypass-type, pressure compensated flow control.

Schematic

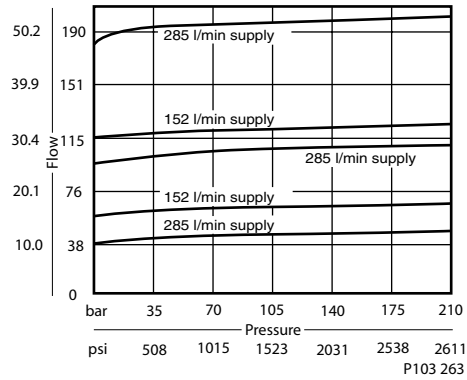


P103 507

SPECIFICATIONS

Theoretical performance

gpm L/min 154 SUS (33 cSt) hyd. oil @ 100° F (38° C)



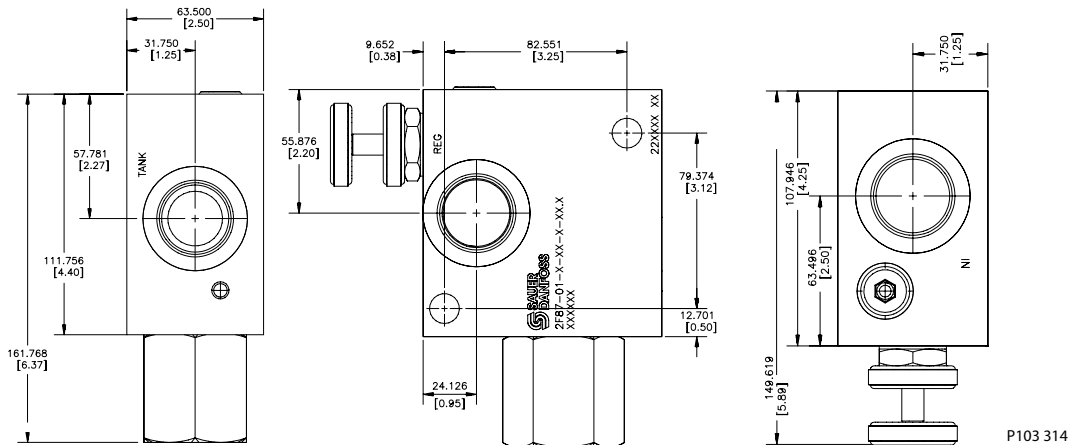
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	189 l/min [50 US gal/min]
Max inlet flow	284 l/min [75 US gal/min]
Weight	0.70 kg [1.54 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



P103 314

ORDERING INFORMATION

2F87-01-B-16S-K-50.0

Adjustment options

- E = External Replacement Nut 322417
- K = Knob Replacement Jam Knob 322304, Adjustment Knob 322305

Body and Housing

- 16S = AL, #16 SAE
- 1B = AL, 1 BSP

Seals

- B = Buna-N Seal kits Consult Factory
- V = Viton Seal kits Consult Factory

P103 267



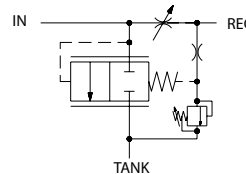
Cartridge Valves Technical Information

Flow control valves 2FA84

OPERATION

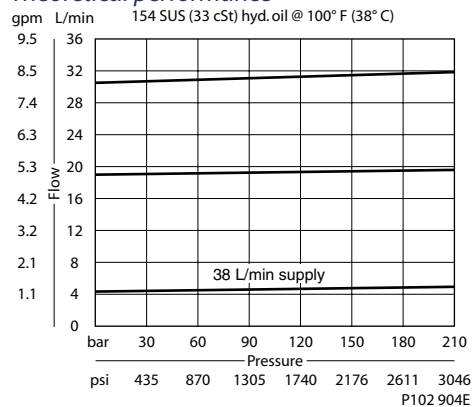
This valve is an adjustable, pressure compensated flow control with integral relief valve.

Schematic



SPECIFICATIONS

Theoretical performance



Specifications

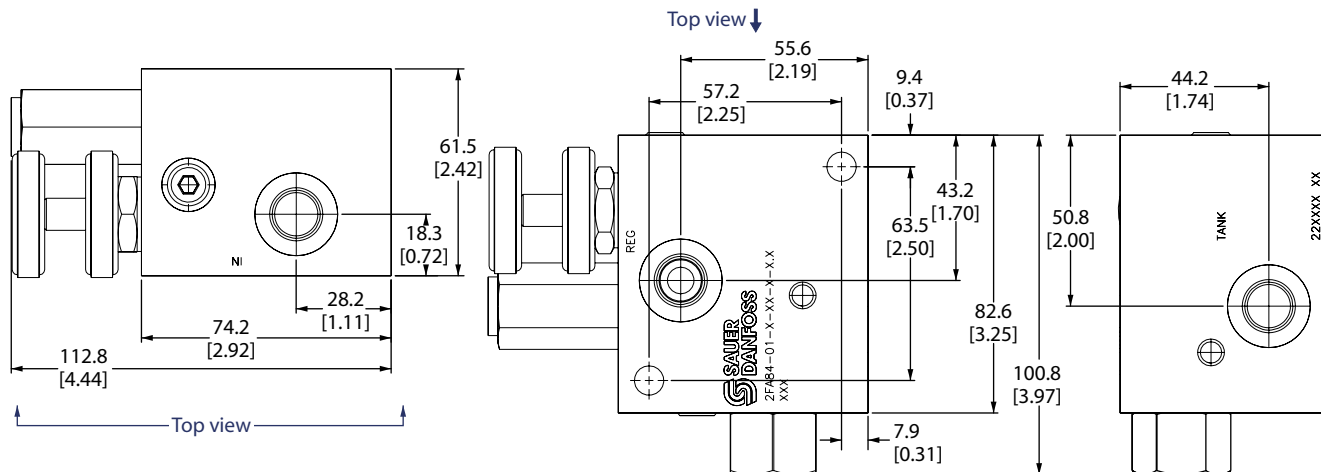
Rated pressure	210 bar [3000 psi]
Max regulated flow	31 l/min [8 US gal/min]
Max inlet flow	60 l/min [16 US gal/min]
Weight	0.79 kg [1.74 lb]
Cavity	none

P102 673E

DIMENSIONS

mm [in]

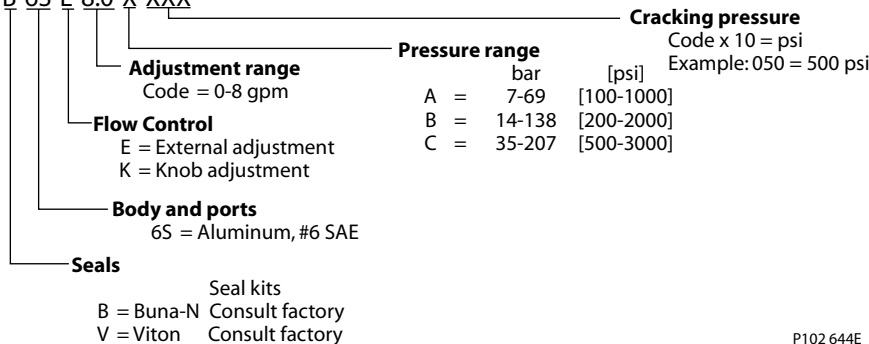
Cross-sectional view



P102 674

ORDERING INFORMATION

2FA84-01-B-6S-E-8.0-X-XXX



P102 644E



Cartridge Valves Technical Information

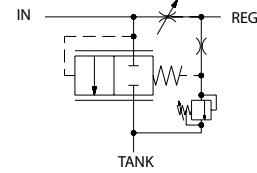
Flow control valves

2FA85

OPERATION

This valve is an adjustable, pressure compensated flow control with integral relief valve.

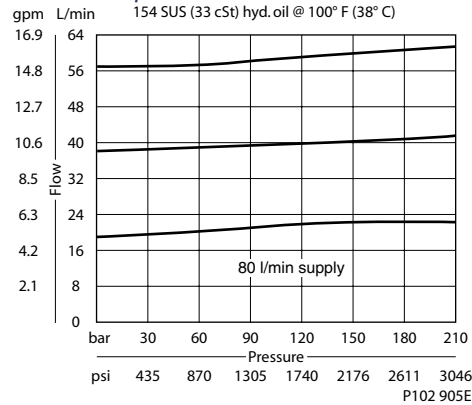
Schematic



P102 673E

SPECIFICATIONS

Theoretical performance



Specifications

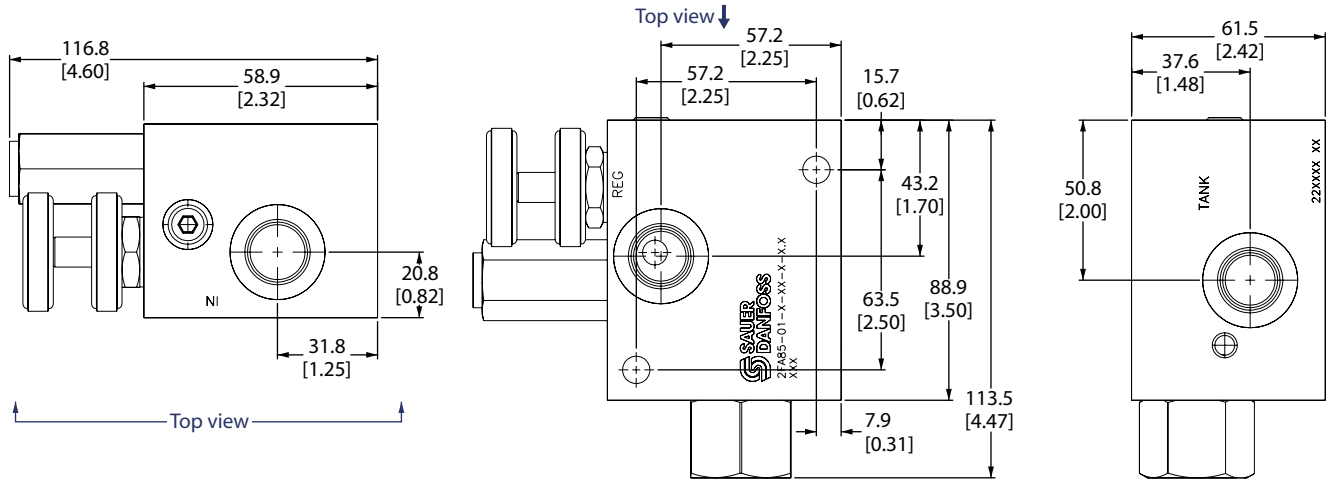
Rated pressure	210 bar [3000 psi]
Max regulated flow	60 l/min [16 US gal/min]
Max inlet flow	95 l/min [25 US gal/min]
Weight	0.79 kg [1.74 lb]
Cavity	none

Flow control valves
2FA85

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

2FA85-01-B-8S-E-15-X-XXX

- Seals**
 - B = Buna-N
 - V = Viton
 - Seal kits Consult Factory
- Body and ports**
 - 8S = Aluminum, #8 SAE
- Flow Control**
 - E = External adjustment
 - K = Knob adjustment
- Cracking pressure**
 - Code x 10 = psi
 - Example: 050 = 500 psi
- Pressure range**
 - A = 7-69 [100-1000]
 - B = 14-138 [200-2000]
 - C = 35-207 [500-3000]
- Adjustment range**
 - Code = 0-15 gpm

P102 645E



Cartridge Valves Technical Information

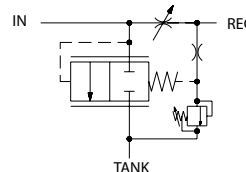
Flow control valves

2FA86

OPERATION

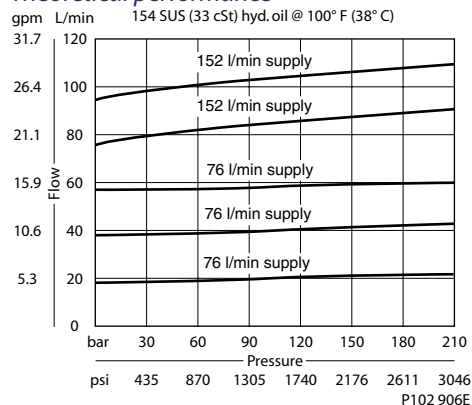
This valve is an adjustable, pressure compensated flow control with integral relief valve.

Schematic



SPECIFICATIONS

Theoretical performance



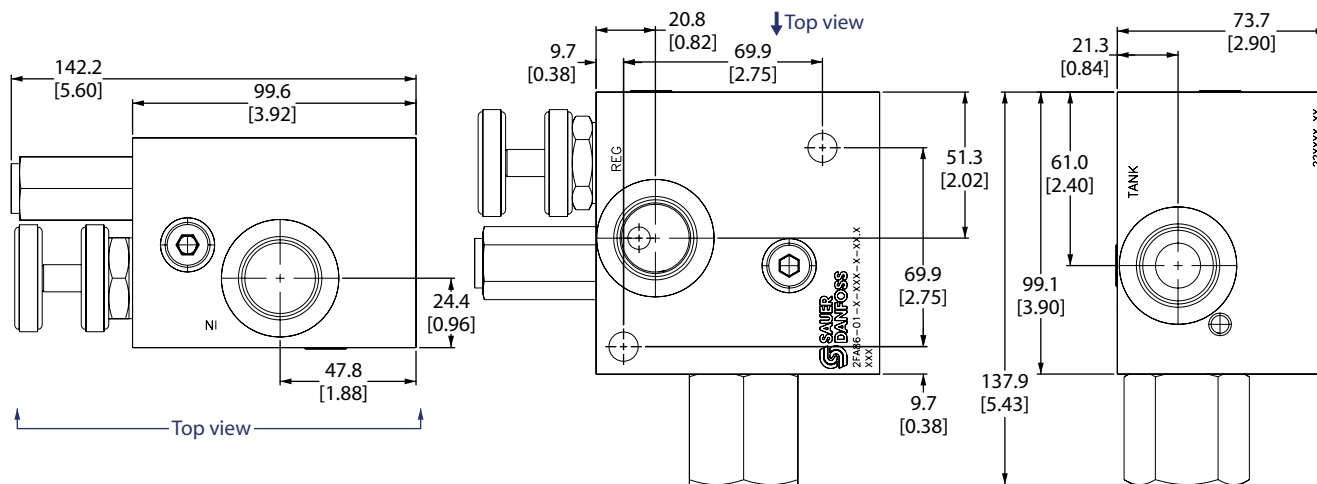
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	95 l/min [25 US gal/min]
Max inlet flow	150 l/min [40 US gal/min]
Weight	0.83 kg [1.83 lb]
Cavity	none

DIMENSIONS

Cross-sectional view

mm [in]



ORDERING INFORMATION

2FA86-01-B-12S-E-25-X-XXX

- Seals**
 - B = Buna-N
 - V = Viton
 - Seal kits: Consult Factory
- Body and ports**
 - 12S = Aluminum, #12 SAE
- Flow Control**
 - E = External adjustment
 - K = Knob adjustment
- Cracking pressure**
 - Code x 10 = psi
 - Example: 050 = 500 psi
- Pressure range**
 - A = 7-69 [100-1000]
 - B = 14-138 [200-2000]
 - C = 35-207 [500-3000]
- Adjustment range**
 - Code = 0-25 gpm

Flow control valves 2FA86



Cartridge Valves Technical Information

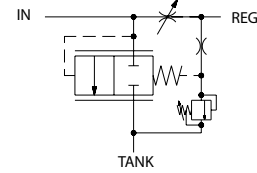
Flow control valves

2FA87

OPERATION

This valve is an adjustable, pressure compensated flow control with integral relief valve.

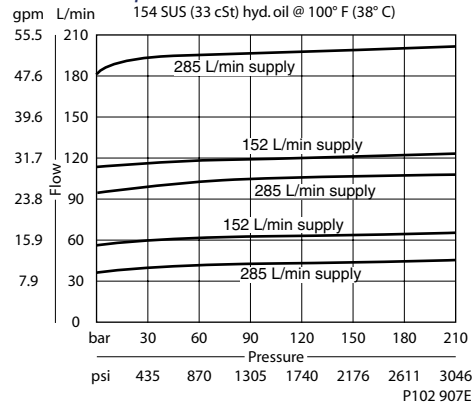
Schematic



P102 673E

SPECIFICATIONS

Theoretical performance



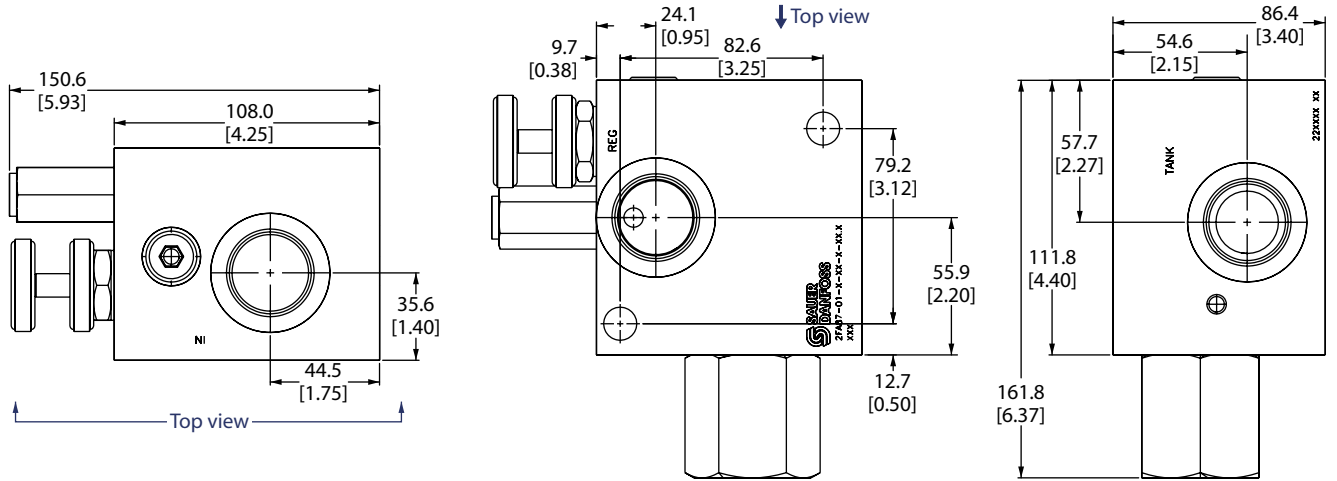
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	190 l/min [50 US gal/min]
Max inlet flow	285 l/min [75 US gal/min]
Weight	1.54 kg [3.40 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

2FA87-01-B-16S-E-50-X-XXX

- Seals**
 - B = Buna-N
 - V = Viton
 - Seal kits: Consult Factory
- Body and ports**
 - 16S = Aluminum, #16 SAE
- Flow Control**
 - E = External adjustment
 - K = Knob adjustment
- Cracking pressure**
 - Code x 10 = psi
 - Example: 050 = 500 psi
- Pressure range**
 - A = 7-69 [100-1000] bar [psi]
 - B = 14-138 [200-2000]
 - C = 35-207 [500-3000]
- Adjustment range**
 - Code = 0-50 gpm

P102 647E



Cartridge Valves Technical Information

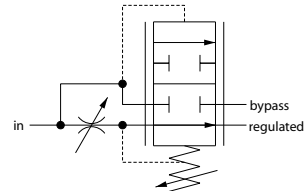
Flow control valves

2F94

OPERATION

This valve is an adjustable, priority-type, pressure compensated flow control valve.

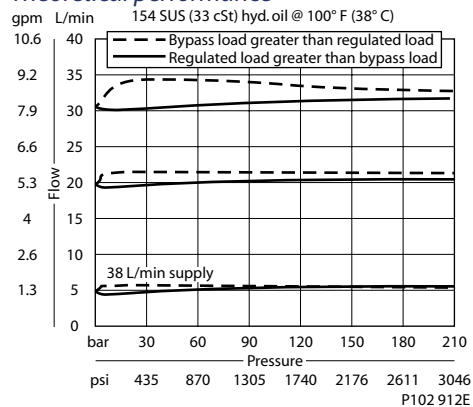
Schematic



P102 682

SPECIFICATIONS

Theoretical performance



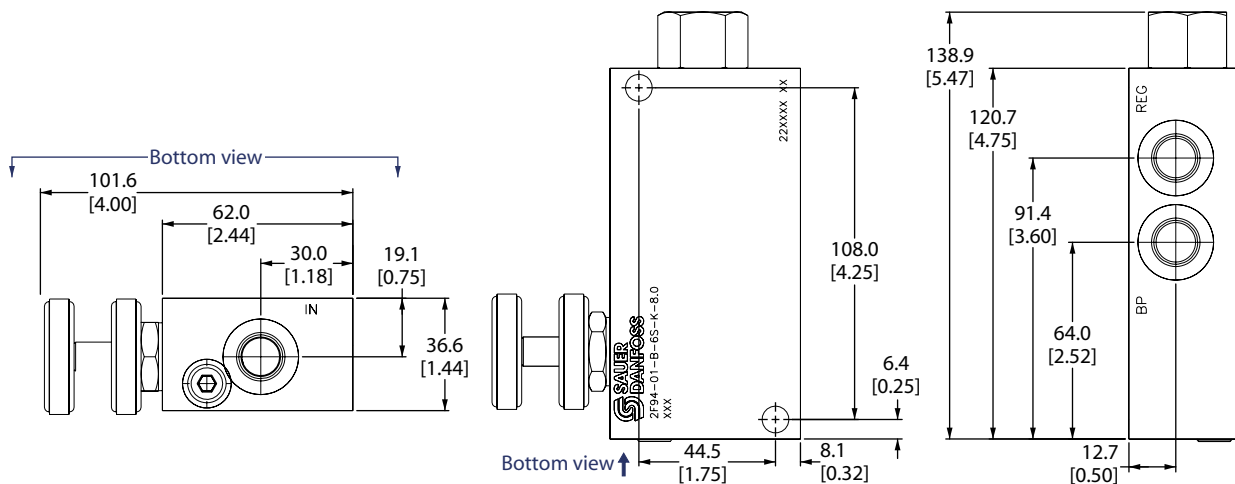
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	30 l/min [8 US gal/min]
Max inlet flow	60 l/min [16 US gal/min]
Weight	1.00 kg [2.20 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



P102 678

ORDERING INFORMATION

2F94-01-B-6S-E-8.0

- Adjustment range**
Code = 0-8 gpm
- Adjustment options**
E = External adjustment
K = Knob adjustment
- Body and ports**
6S = Aluminum, #6 SAE
- Seals**
B = Buna-N
V = Viton
- Seal kits**
Consult Factory

P102 648E



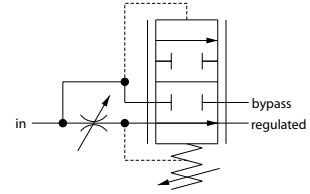
Cartridge Valves Technical Information

Flow control valves 2F95

OPERATION

This valve is an adjustable, priority-type, pressure compensated flow control valve.

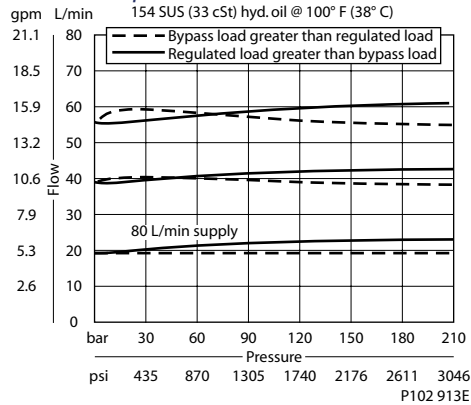
Schematic



P102 682

SPECIFICATIONS

Theoretical performance



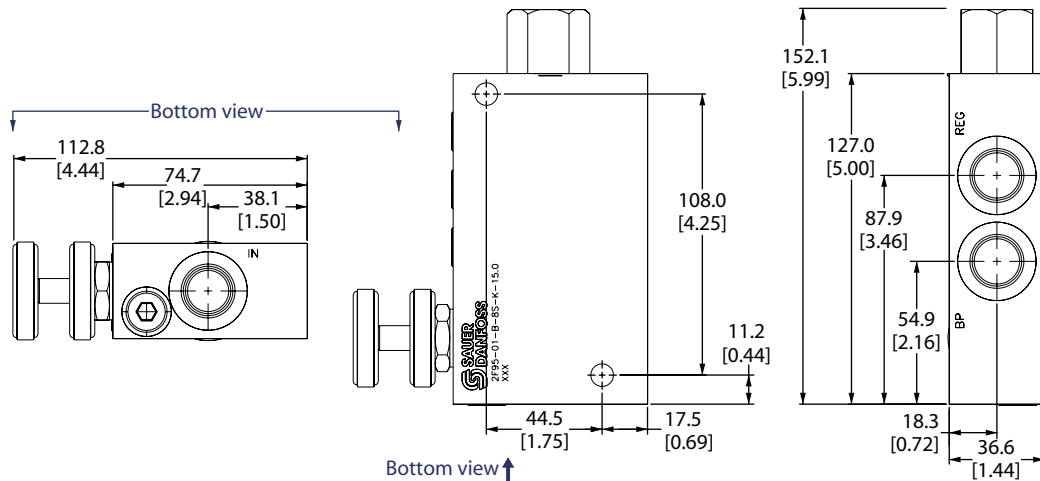
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	60 l/min [16 US gal/min]
Max inlet flow	95 l/min [25 US gal/min]
Weight	1.00 kg [2.20 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

2F95-01-B-8S-E-15

Adjustment options
E = External adjustment
K = Knob adjustment

Body and ports
8S = Aluminum, #8 SAE

Seals
B = Buna-N
V = Viton

Seal kits
Consult Factory
Consult Factory

Adjustment range
Code = 0-15 gpm

P102 649E



Cartridge Valves Technical Information

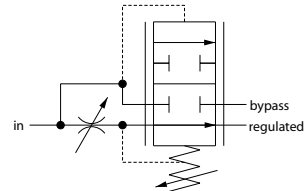
Flow control valves

2F96

OPERATION

This valve is an adjustable, priority-type, pressure compensated flow control valve.

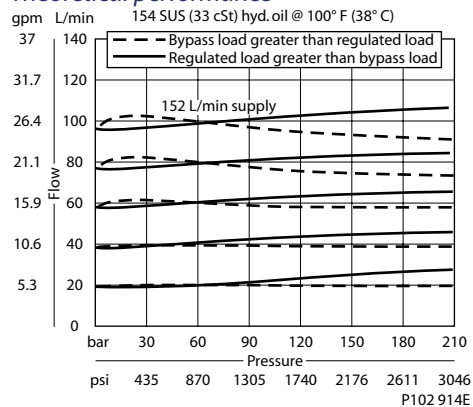
Schematic



P102 682

SPECIFICATIONS

Theoretical performance



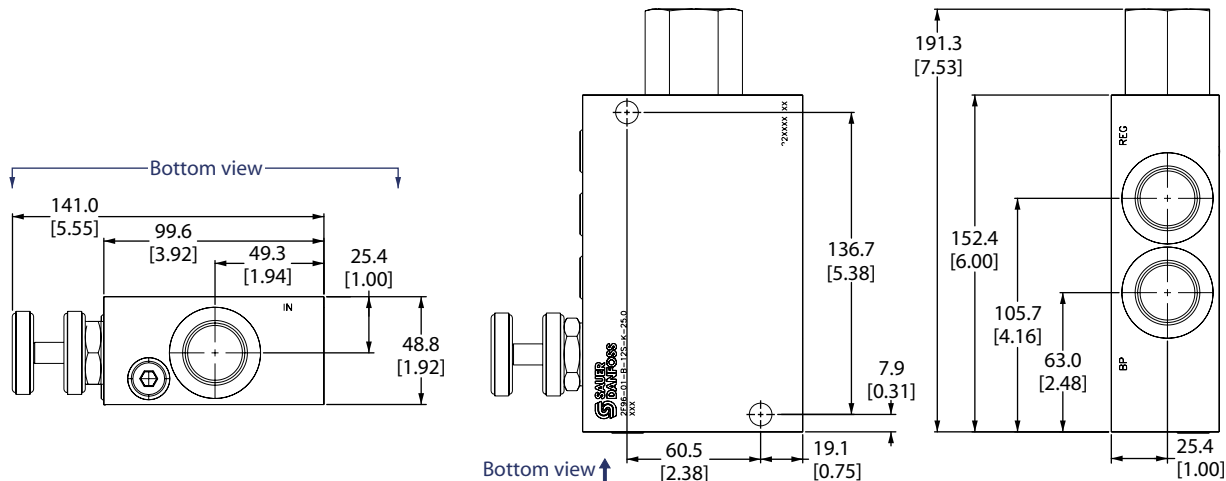
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	95 l/min [25 US gal/min]
Max inlet flow	150 l/min [40 US gal/min]
Weight	1.77 kg [3.90 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



P102 680

ORDERING INFORMATION

2F96-01-B-12S-E-25

- Adjustment range**
Code = 0-25 gpm
- Adjustment options**
E = External adjustment
K = Knob adjustment
- Body and ports**
12S = Aluminum, #12 SAE
- Seals**
B = Buna-N
V = Viton
- Seal kits**
Consult Factory

P102 650E



Cartridge Valves Technical Information

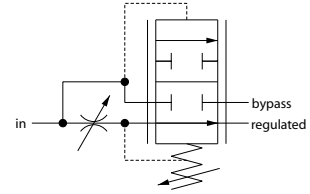
Flow control valves

2F97

OPERATION

This valve is an adjustable, priority-type, pressure compensated flow control valve.

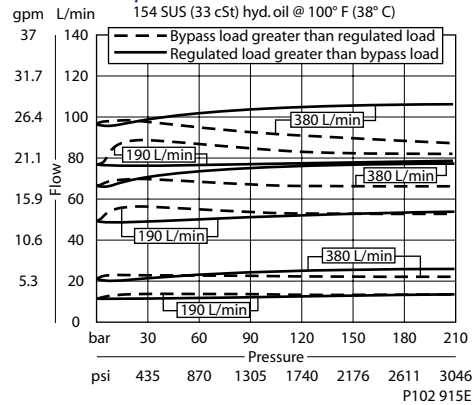
Schematic



P102 682

SPECIFICATIONS

Theoretical performance



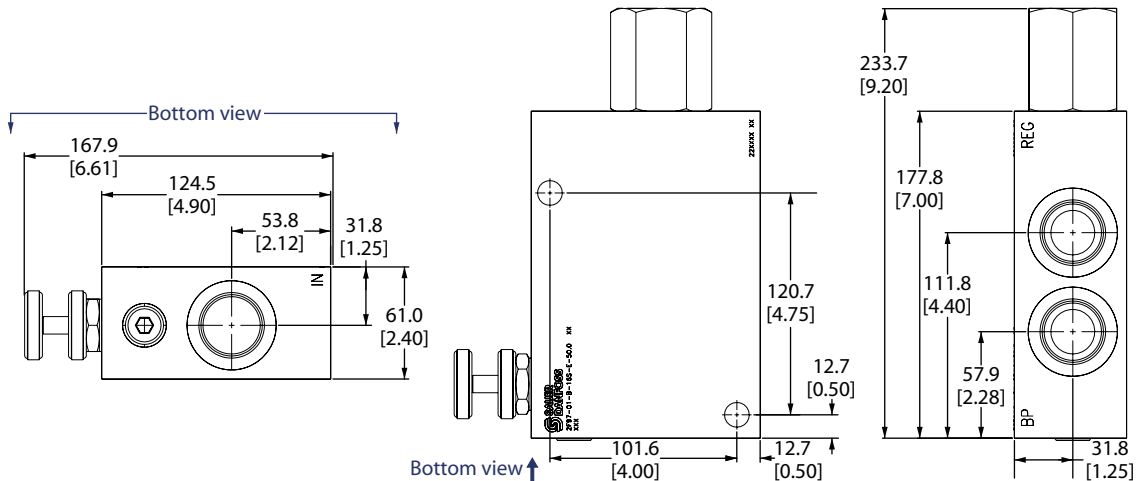
Specifications

Rated pressure	210 bar [3000 psi]
Max regulated flow	190 l/min [50 US gal/min]
Max inlet flow	380 l/min [100 US gal/min]
Weight	3.81 kg [8.40 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



P102 681

ORDERING INFORMATION

2F97-01-B-16S-E-50

Adjustment options
 E = External adjustment
 K = Knob adjustment

Body and ports
 16S = Aluminum, #16 SAE

Seals
 B = Buna-N
 V = Viton

Seal kits
 Consult Factory
 Consult Factory

Adjustment range
 Code = 0-50 gpm

P102 651E



Cartridge Valves Technical Information
Flow control valves
Notes