

Comatrol

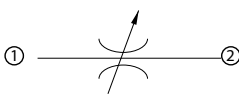
RESPONSIVENESS IN MOTION

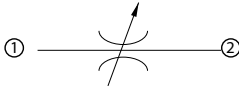
Member of the Danfoss Group

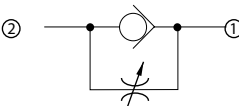


Flow Control Valves

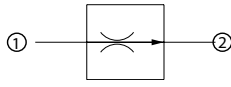
www.comatrol.com

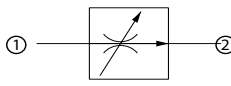
Needle Valves	Model No	Cavity	Description	Flow*	Pressure	Page
	CP618-6	SDC08-2	Needle Valve, Bi-Directional, Fine Metering	10 l/min [3 US gal/min]	310 bar [4500 psi]	FC - 9

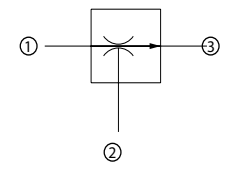
Needle Valves	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP618-1	SDC08-2	Needle Valve, Bi-Directional	25 l/min [7 US gal/min]	210 bar [3000 psi]	FC - 10
	CP618-2	SDC08-2		45 l/min [12 US gal/min]	210 bar [3000 psi]	FC - 11
	CP610-1	SDC10-2		50 l/min [13 US gal/min]	210 bar [3000 psi]	FC - 12
	CP610-2	SDC10-2		50 l/min [13 US gal/min]	210 bar [3000 psi]	FC - 13
	CP611-2	CP12-2		115 l/min [30 US gal/min]	210 bar [3000 psi]	FC - 14
	CP612-1	SDC16-2		190 l/min [50 US gal/min]	210 bar [3000 psi]	FC - 15
	CP612-2	SDC16-2		190 l/min [50 US gal/min]	210 bar [3000 psi]	FC - 16
	CP613-1	SDC20-2		380 l/min [100 US gal/min]	210 bar [3000 psi]	FC - 17

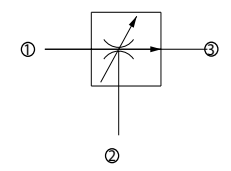
Needle Valves	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP610-7	SDC10-2	Needle Valve, Bi-Directional, Fine Metering, Reverse Free Flow	55 l/min [15 US gal/min]	350 bar [5075 psi]	FC - 18

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

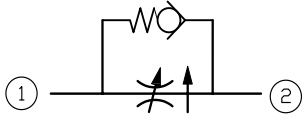
Pressure-Compensated, Restrictive Flow Control	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP308-1	SDC08-2	Flow Control Valve, Fixed Setting, Restrictive Type	15 l/min [4 US gal/min]	210 bar [3000 psi]	FC - 19
	CP300-1	SDC10-2		23 l/min [6 US gal/min]	210 bar [3000 psi]	FC - 20
	CP301-1	CP12-2		57 l/min [15 US gal/min]	210 bar [3000 psi]	FC - 21

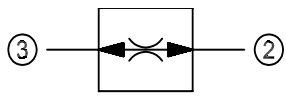
Pressure-Compensated, Restrictive Flow Control	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP308-2	SDC08-2	Flow Control Valve, Adjustable, Restrictive Type	15 l/min [4 US gal/min]	210 bar [3000 psi]	FC - 22
	CP300-2	SDC10-2		23 l/min [6 US gal/min]	210 bar [3000 psi]	FC - 23
	VR 06	NCS06/2		30 l/min [8 US gal/min]	315 bar [4500 psi]	FC - 24
	VR 12	NCS12/2		60 l/min [16 US gal/min]	315 bar [4500 psi]	FC - 25

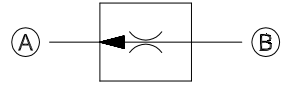
Pressure-Compensated, Priority Flow Control	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP310-1	SDC10-3	Flow Control Valve, Fixed Setting, Priority Type	23 l/min [6 US gal/min]	210 bar [3000 psi]	FC - 28
	VRF 06	NCS06/3		30 l/min [8 US gal/min]	315 bar [4500 psi]	FC - 29
	CP311-1	CP12-3		45 l/min [12 US gal/min]	210 bar [3000 psi]	FC - 30
	CP312-1	SDC16-3		65 l/min [17 US gal/min]	210 bar [3000 psi]	FC - 31

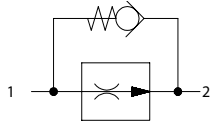
Pressure-Compensated, Priority Flow Control	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP310-2	SDC10-3	Flow Control Valve, Adjustable, Priority Type	23 l/min [6 US gal/min]	210 bar [3000 psi]	FC - 32
	VRC 06	NCS06/3		50 l/min [13 US gal/min]	315 bar [4500 psi]	FC - 33
	VRC 12	NCS12/3		100 l/min [26 US gal/min]	315 bar [4500 psi]	FC - 34

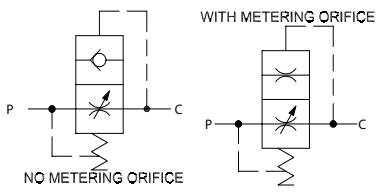
* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

In-line	Model No.	Cavity	Description	Flow*	Pressure	Page
	HFCV10-RT	SDC10-2	Pressure compensated, restrictive-type flow control.	0.38-11.4 l/min [0.1-3.0 US gal/min]	350 bar [5075 psi]	FC - 26

Pressure-Compensated, Priority Flow Control	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP300-6	SDC10-3	Flow Control Valve, Fixed Setting,	23 l/min [6 US gal/min]	210 bar [3000 psi]	FC - 35
	FCH10-BD	SDC10-3	Bi-Directional	23 l/min [6 US gal/min]	350 bar [5075 psi]	FC - 36

In-line	Model No.	Cavity	Description	Flow*	Pressure	Page
	SC 10	none	Flow Control Valve, In-line	16 l/min [4 US gal/min]	210 bar [3000 psi]	FC - 37
	SC 13	none		47 l/min [12 US gal/min]	210 bar [3000 psi]	FC - 38

In-line	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP9014-1	none	Load Lowering Valve	113 l/min [30 US gal/min]	210 bar [3000 psi]	FC - 39

In-line	Model No.	Cavity	Description	Flow*	Pressure	Page
	BC 06	none	Velocity Fuse	30 l/min [8 US gal/min]	210 bar [3000 psi]	FC - 40
	BC 10	none		60 l/min [16 US gal/min]	210 bar [3000 psi]	FC - 41
	BC 13	none		85 l/min [22 US gal/min]	210 bar [3000 psi]	FC - 42

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

In-line	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP330-3	#10 SAE Port	Velocity Fuse	110 l/min [29 US gal/min]	207 bar [3000 psi]	FC - 43

Flow Divider/Combiner	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP340-1	SDC10-4	Flow Divider, Divider/Combiner	45 l/min [12 US gal/min]	210 bar [3000 psi]	FC - 44
	VDF 06	NCS06/4		45 l/min [12 US gal/min]	210 bar [3000 psi]	FC - 45
	CP341-1	CP12-4		75 l/min [20 US gal/min]	210 bar [3000 psi]	FC - 46
	CP342-1	CP16-4		150 l/min [40 US gal/min]	210 bar [3000 psi]	FC - 47
	CP342-3	CP16-4		150 l/min [40 US gal/min]	450 bar [6500 psi]	FC - 48
	CP343-1	SDC20-4		340 l/min [90 US gal/min]	210 bar [3000 psi]	FC - 49

Pressure-Compensated, Priority Flow Control	Model No.	Cavity	Description	Flow*	Pressure	Page
	2F94-01	none	Flow Control Valve, Catalog HIC	30 l/min [8 US gal/min]	210 bar [3000 psi]	FC - 50
	2F95-01	none		60 l/min [16 US gal/min]	210 bar [3000 psi]	FC - 51
	2F96-01	none		95 l/min [25 US gal/min]	210 bar [3000 psi]	FC - 52
	2F97-01	none		190 l/min [50 US gal/min]	210 bar [3000 psi]	FC - 53

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

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

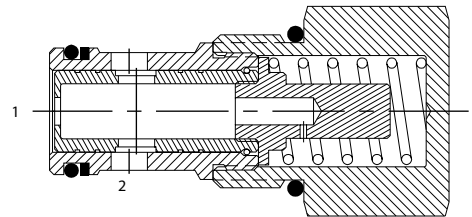


RESTRICTED-TYPE PRESSURE COMPENSATED

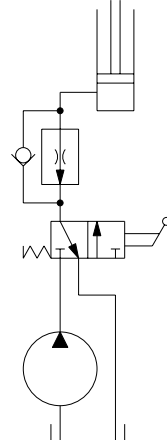
Restrictive-type pressure compensated flow control valves are two-ported valves that maintain a constant flow rate from 1 to 2 regardless of load pressure changes in the circuit downstream of 2. The control orifice in the spool is factory set to the flow specification. The valve begins to respond to 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



Actuator speed control circuit



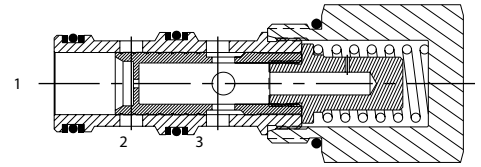
**PRIORITY-
 TYPE PRESSURE
 COMPENSATED**

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.

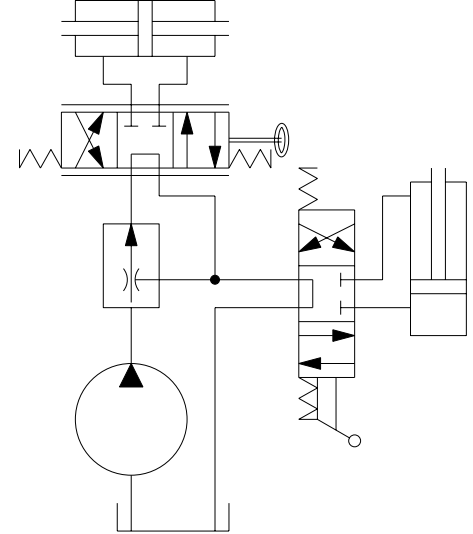
Priority-type flow control valves are used in meter-in applications. A common application is to direct a fixed flow rate to a priority function, such as steering, while secondary flow is available to other intermittent functions.

Flow divider/combiners are pressure

Priority-type pressure compensated flow control valve



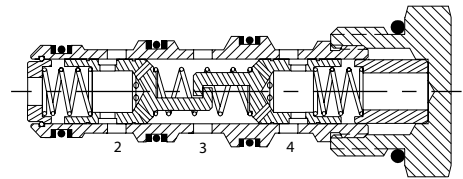
Steering priority circuit



**FLOW DIVIDER /
 COMBINER**

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.

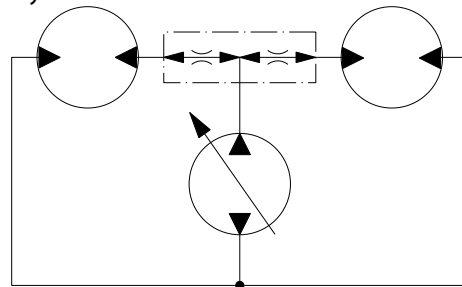
Flow divider / combiner



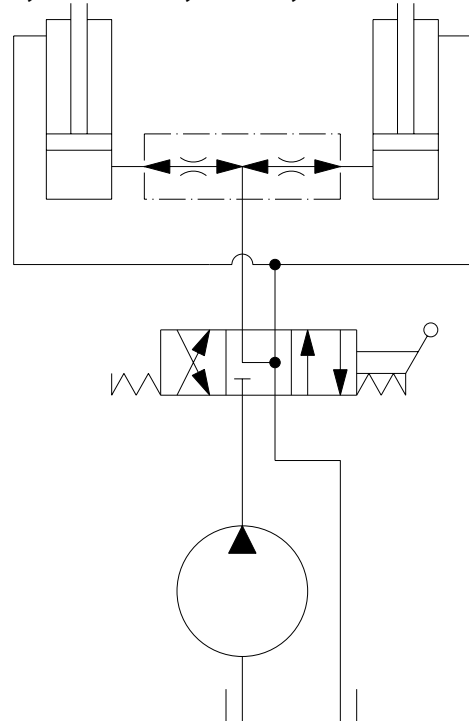
Common applications for flow divider/combiners include:

- 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



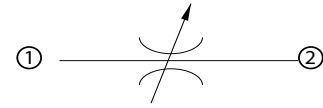
Synchronized hydraulic cylinders circuit



OPERATION

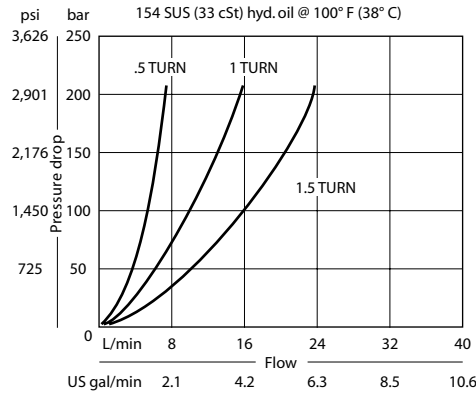
This valve is a non-pressure compensated, fine-metering, adjustable flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



Specifications

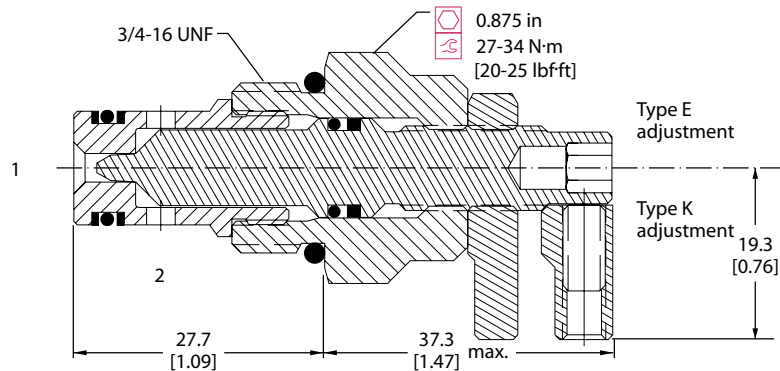
Rated pressure	310 bar [4500 psi]*
Rated flow at 7 bar [100 psi]	10 l/min [3 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.12 kg 0.26 lb
Cavity	SDC08-2

*Updated Pressure Rating

DIMENSIONS

mm in

Cross-sectional view



ORDERING INFORMATION

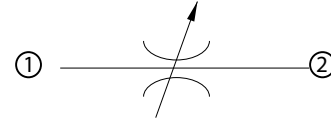
CP618 - 6 - B - 6S - K

Seals			
B = Buna-N	Seal kit	120227	
V = Viton		120228	
Housing and ports	Housing P/N		Adjustment option
0 = No Housing	No Housing		E = External
DG2B = AL, 1/4 BSP	SDC08-2-DG-2B		K = Knob
DG3B = AL, 3/8 BSP	SDC08-2-DG-3B		
DG4S = AL, #4 SAE	CP08-2-4S		
DG6S = AL, #6 SAE	CP08-2-6S		
Other housings available			

OPERATION

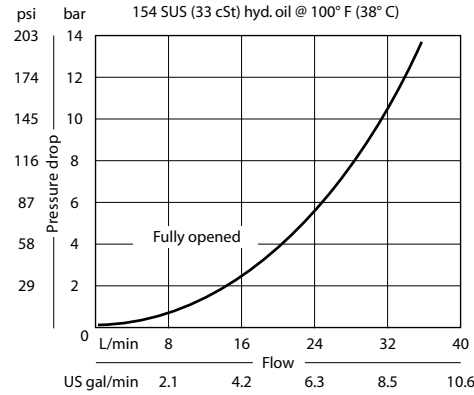
This valve is a non-pressure compensated, adjustable flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



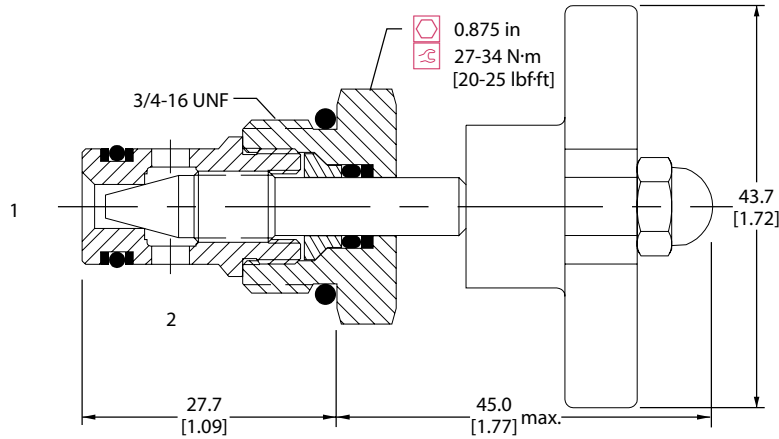
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	25 l/min [7 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.07 kg [0.15 lb]
Cavity	SDC08-2

DIMENSIONS

mm in

Cross-sectional view



ORDERING INFORMATION

CP618-1-B-6S-B

Seals

- B = Buna-N
- V = Viton

Seal kit

- 120227
- 120228

Housing and ports

- 0 = No Housing
- DG2B = AL, 1/4 BSP
- DG3B = AL, 3/8 BSP
- DG4S = AL, #4 SAE
- DG6S = AL, #6 SAE
- Other housings available

Housing P/N

- No Housing
- SDC08-2-DG-2B
- SDC08-2-DG-2B
- CP08-2-4S
- CP08-2-6S

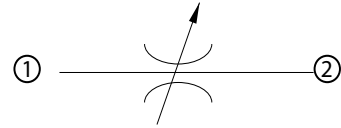
Knob option

- B = Black
- R = Red

OPERATION

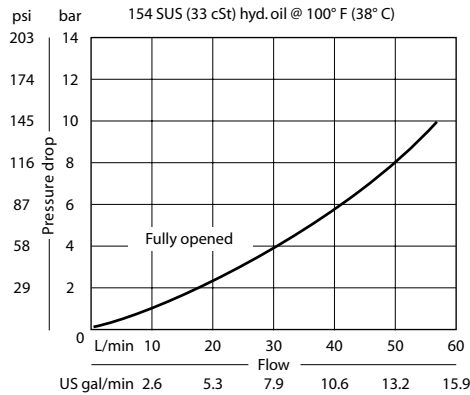
This valve is a non-pressure compensated, adjustable flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



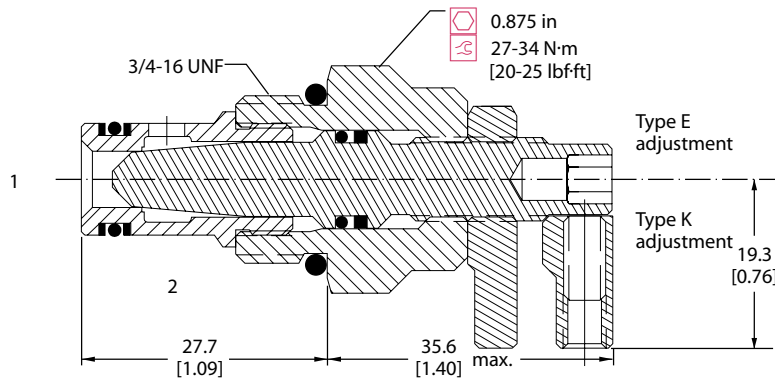
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	45 l/min [12 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.09 kg [0.20 lb]
Cavity	SDC08-2

DIMENSIONS

mm in

Cross-sectional view



ORDERING INFORMATION

CP618 - 2 - B - 6S - K

Seals

B = Buna-N
 V = Viton

Seal kit
 120227
 120228

Housing and ports

0 = No Housing
 DG2B = AL, 1/4 BSP
 DG3B = AL, 3/8 BSP
 DG4S = AL, #4 SAE
 DG6S = AL, #6 SAE
 Other housings available

Housing P/N

No Housing
 SDC08-2-DG-2B
 SDC08-2-DG-2B
 CP08-2-4S
 CP08-2-6S

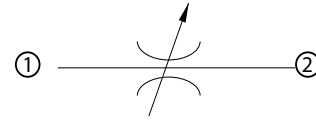
Adjustment option

E = External adjustment
 K = Knob adjustment

OPERATION

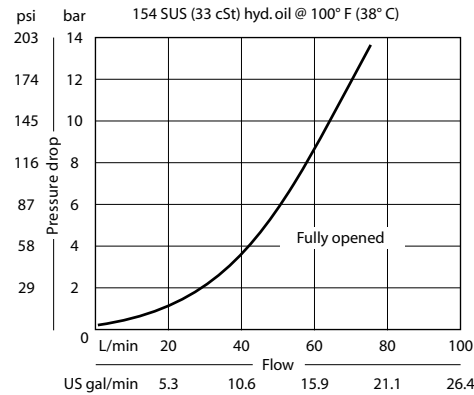
This valve is a non-pressure compensated, adjustable flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



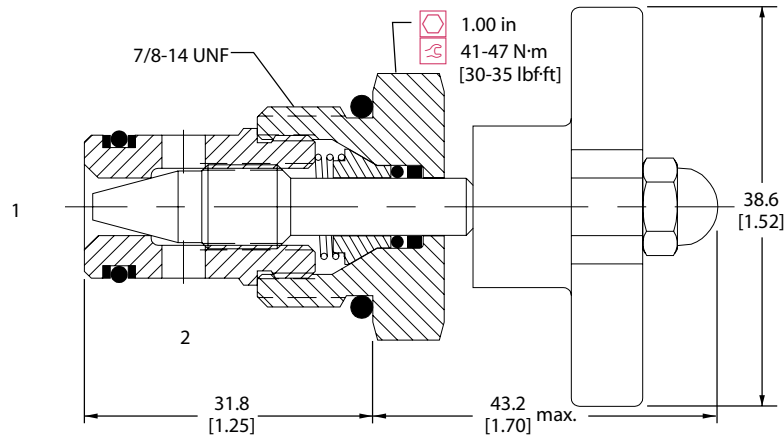
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	50 l/min [13 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.10 kg [0.22 lb]
Cavity	SDC10-2

DIMENSIONS

mm in

Cross-sectional view



ORDERING INFORMATION

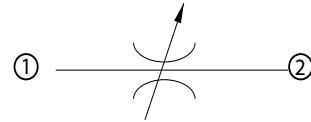
CP610 - 1 - B - 8S - B

Seals			
B = Buna-N	Seal kit		
V = Viton	120073		
	120074		
Housing and ports	Housing P/N		Knob option
0 = No Housing	No Housing		B = Black
DG3B = AL, 3/8 BSP	SDC10-2-DG-3B		R = Red
DG4B = AL, 1/2 BSP	SDC10-2-DG-4B		
6S = AL, #6 SAE	CP10-2-6S		
8S = AL, #8 SAE	CP10-2-8S		
Other housings available			

OPERATION

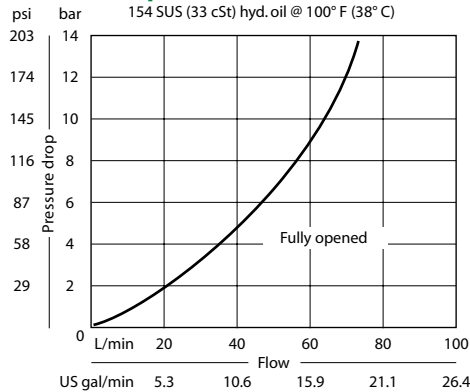
This valve is a non-pressure compensated, adjustable flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



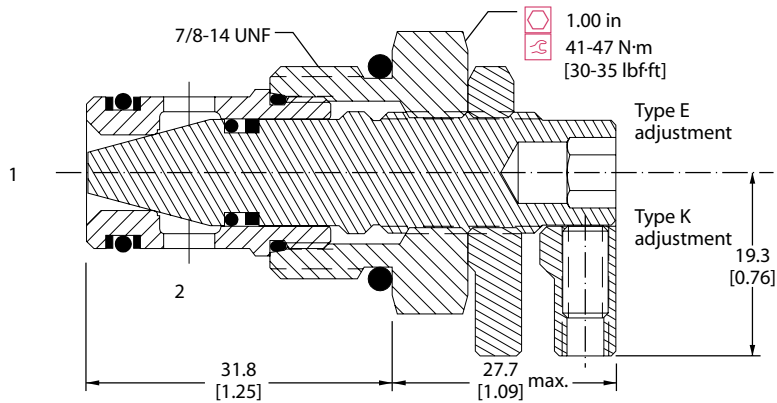
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	50 l/min [13 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.13 kg [0.29 lb]
Cavity	SDC10-2

DIMENSIONS

mm in

Cross-sectional view



ORDERING INFORMATION

CP610 - 2 - B - 8S - K

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
 120073
 120074

Housing P/N

- No Housing
- SDC10-2-DG-3B
- SDC10-2-DG-4B
- CP10-2-6S
- CP10-2-8S

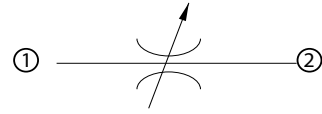
Adjustment option

- E = External
- K = Knob

OPERATION

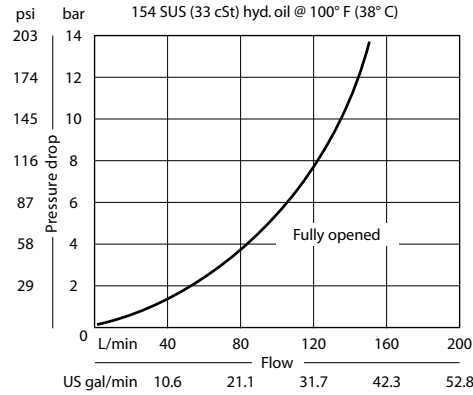
This valve is a non-pressure compensated, adjustable flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



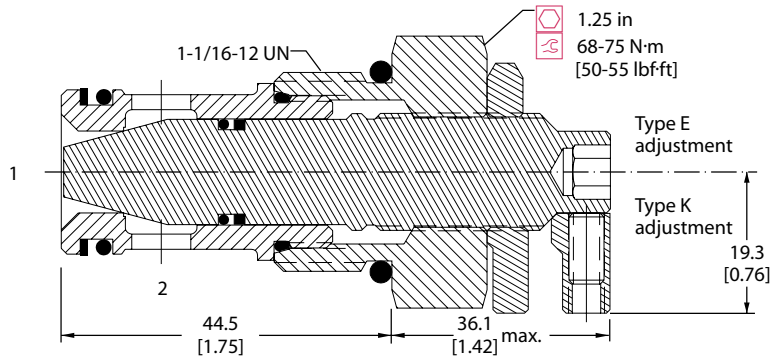
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	115 l/min [30 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.26 kg [0.57 lb]
Cavity	CP12-2

DIMENSIONS

mm in

Cross-sectional view



ORDERING INFORMATION

CP611 - 2 - B - 12S - K

Seals

B = Buna-N
 V = Viton

Seal kit
 120017
 120018

Housing and ports

0 = No housing
 4B = Al, 1/2 BSP
 6B = Al, 3/4 BSP
 10S = Al, #10 SAE
 12S = Al, #12 SAE

Housing P/N

No housing
 CP12-2-4B
 CP12-2-6B
 CP12-2-10S
 CP12-2-12S

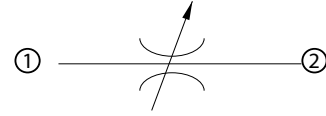
Adjustment option

E = External
 K = Knob

OPERATION

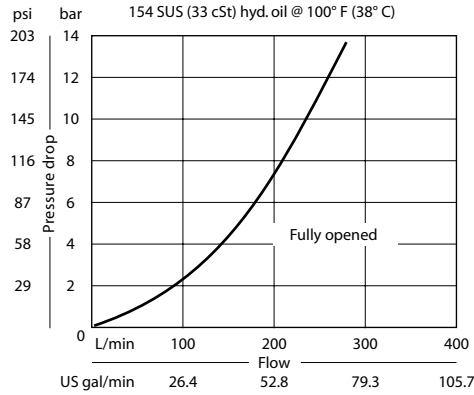
This valve is a non-pressure compensated, adjustable flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



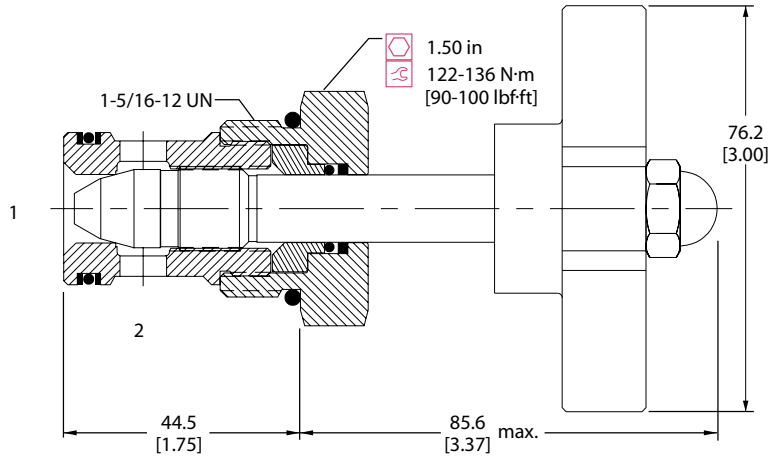
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	190 l/min [50 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.31 kg [0.68 lb]
Cavity	SDC16-2

DIMENSIONS

mm in

Cross-sectional view



ORDERING INFORMATION

CP612 - 1 - B - 16S

Seals

B = Buna-N
 V = Viton

Seal kit
 120567
 120568

Housing and ports

0 = No Housing
 DG6B = AL, 3/4 BSP
 DG8B = AL, 1 BSP
 12S = AL, #12 SAE
 16S = AL, #16 SAE
 Other housings available

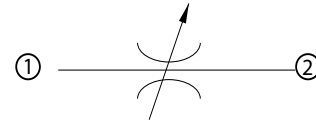
Housing P/N

No Housing
 SDC16-2-DG-6B
 SDC16-2-DG-8B
 SDC16-2-12S
 SDC16-2-16S

OPERATION

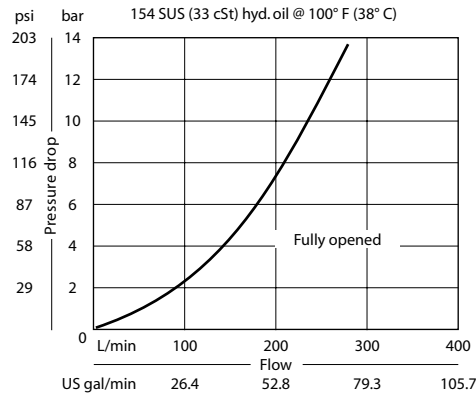
This valve is a non-pressure compensated, adjustable flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



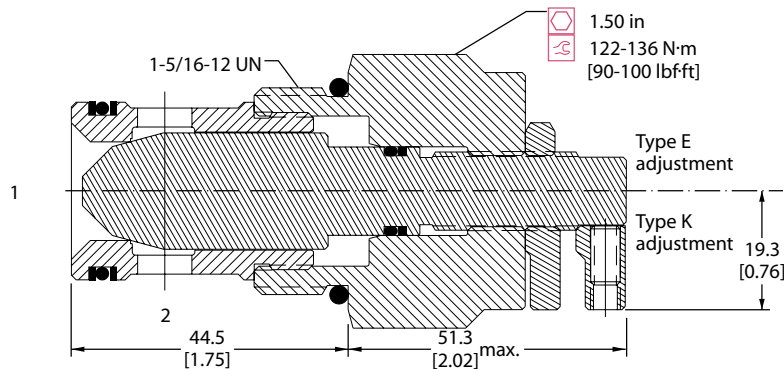
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	190 l/min [50 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.48 kg [1.06 lb]
Cavity	SDC16-2

DIMENSIONS

mm in

Cross-sectional view



ORDERING INFORMATION

CP612 - 2 - B - 16S - K

Seals

B = Buna-N
 V = Viton

Seal kit
 120567
 120568

Housing and ports

0 = No Housing
 DG6B = AL, 3/4 BSP
 DG8B = AL, 1 BSP
 12S = AL, #12 SAE
 16S = AL, #16 SAE
 Other housings available

Housing P/N

No Housing
 SDC16-2-DG-6B
 SDC16-2-DG-8B
 SDC16-2-12S
 SDC16-2-16S

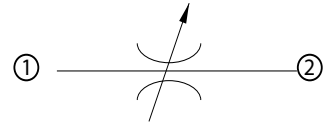
Adjustment option

E = External
 K = Knob

OPERATION

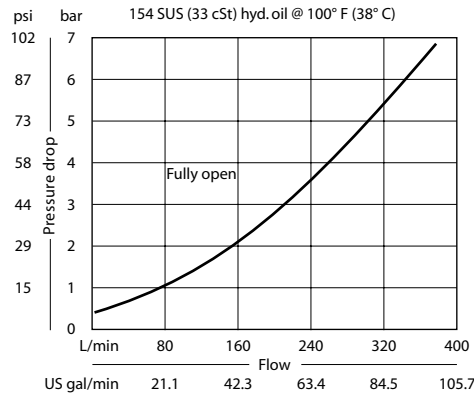
This valve is a non-pressure compensated, adjustable flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



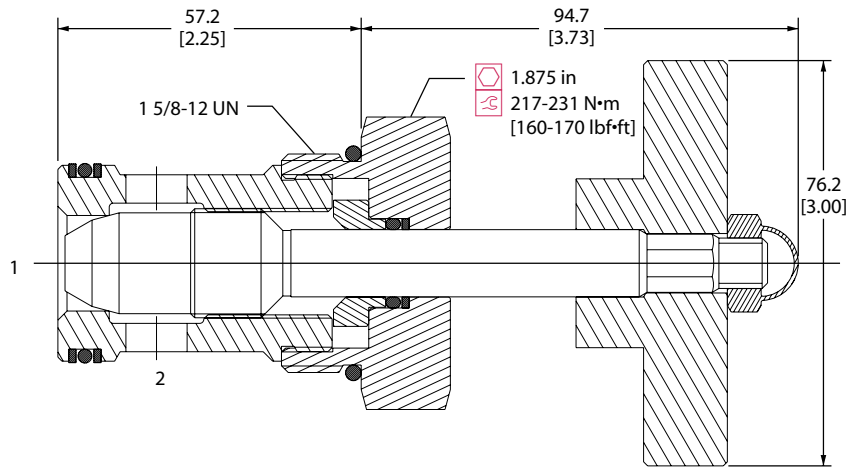
Specifications

Rated pressure	210 bar 3000 psi
Rated flow at 7 bar [100 psi]	380 l/min [100 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.85 kg [1.87 lb]
Cavity	SDC20-2

DIMENSIONS

mm in

Cross-sectional view



ORDERING INFORMATION

CP613-1-B-16S

Housing and ports

- 0 = No Housing
- 8B = AL, 1 BSP
- 10B = AL, 1-1/4 BSP
- 16S = AL, #16 SAE
- 20S = AL, #20 SAE
- Other housings available

Housing P/N

- No Housing
- CP20-2-8B
- CP20-2-10B
- CP20-2-16S
- CP20-2-20S

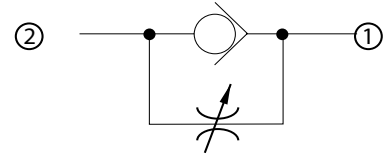
Seals

- | | |
|------------|------------------|
| | Seal kits |
| B = Buna-N | 120172 |
| V = Viton | 120173 |

OPERATION

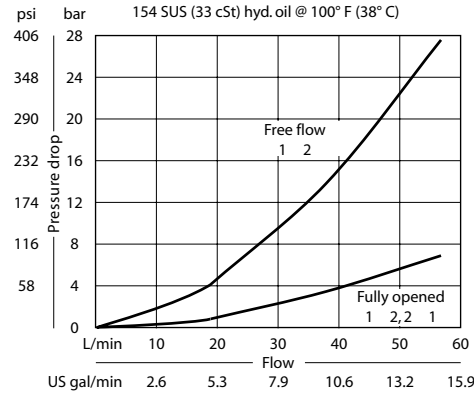
This valve is an adjustable orifice with free reverse flow.

Schematic



SPECIFICATIONS

Theoretical performance



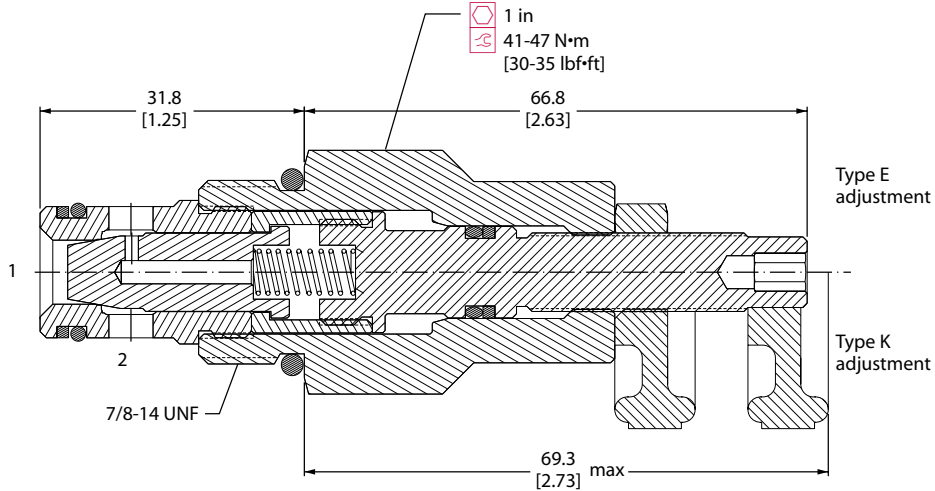
Specifications

Rated pressure	350 bar [5075 psi]
Rated flow at 7 bar [100 psi]	55 l/min [15 US gal/min]
Leakage	30 drops/min @ Rated pressure
Weight	0.18 kg [0.40 lb]
Cavity	SDC10-2

DIMENSIONS

mm in

Cross-sectional view



ORDERING INFORMATION

CP610 - 7 - B - 8S - K

Seals

B = Buna-N
 V = Viton

Seal kit
 120015
 120016

Housing and ports

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

Housing P/N

No Housing
 SDC10-2-DG-3B
 SDC10-2-DG-4B
 CP10-2-6S
 CP10-2-8S

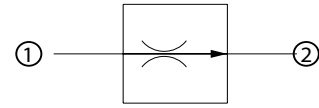
Adjustment option

E = External
 K = Knob

OPERATION

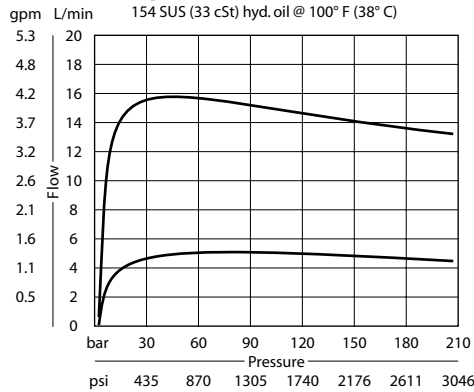
This valve is a fixed pressure compensated flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



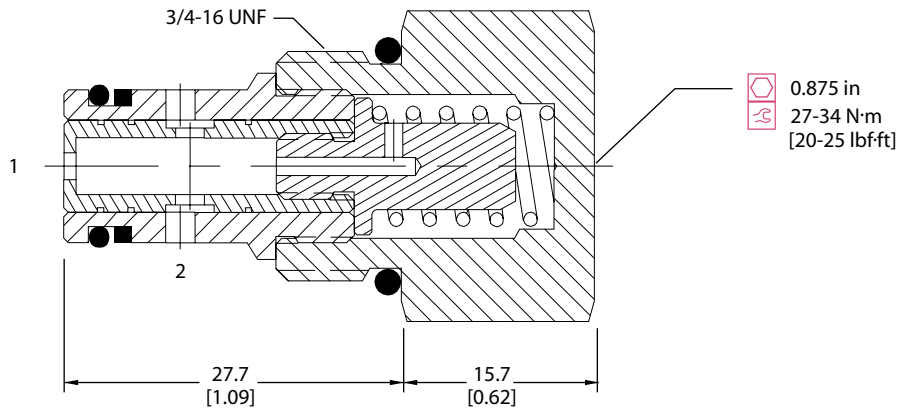
Specifications

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

DIMENSIONS

mm in

Cross-sectional view



ORDERING INFORMATION

CP308 - 1 - B - 6S - 1.0

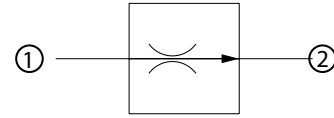
Seals	Seal kit		
B = Buna-N	120221		
V = Viton	120022		
Housing and ports	Housing P/N	Regulated Flow	
0 = No Housing	No Housing	L/min	[US gal/min]
DG2B = Al, 1/4 BSP	SDC08-2-DG-2B	0.1 = .4	[0.1]
DG3B = Al, 3/8 BSP	SDC08-2-DG-3B	To	
4S = Al, #4 SAE	CP08-2-4S	4.0 = 15.1	[4.0]
6S = Al, #6 SAE	CP08-2-6S		

Other housings available

OPERATION

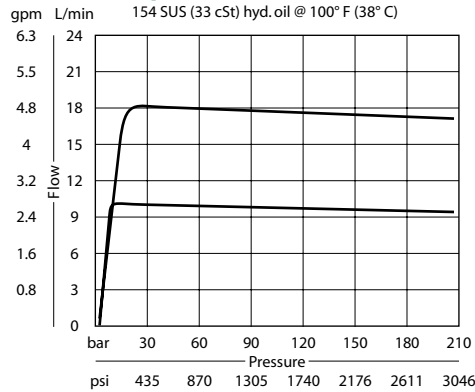
This valve is a fixed pressure compensated flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



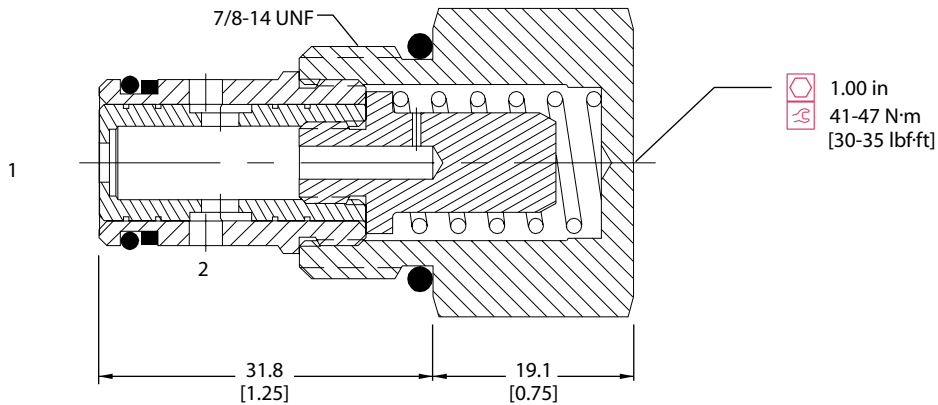
Specifications

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



ORDERING INFORMATION

CP300 - 1 - B - 8S - 2.5

Seals
 B = Buna-N
 V = Viton

Seal kit
 120015
 120016

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

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

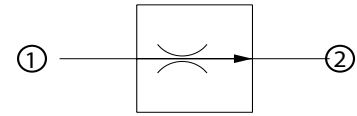
Regulated Flow

Flow (L/min)	Flow (US gal/min)
0.5	1 [0.5]
to	
6.0	22.7 [6.0]

OPERATION

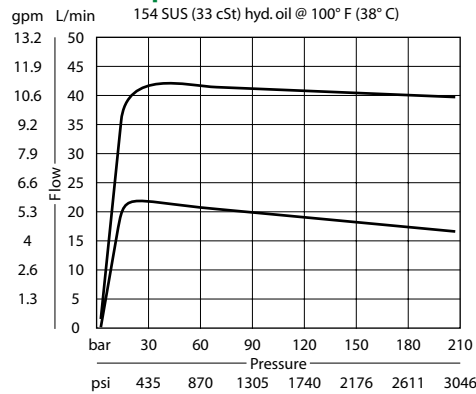
This valve is a fixed pressure compensated flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



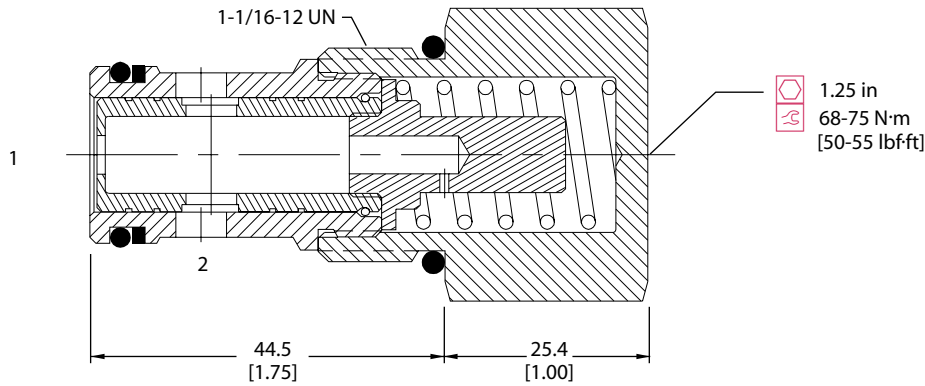
Specifications

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

DIMENSIONS

mm in

Cross-sectional view



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	

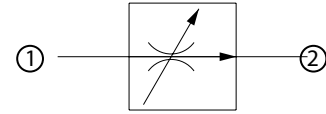
Other housings available

FC - Flow Control Valves
 CP301-1

OPERATION

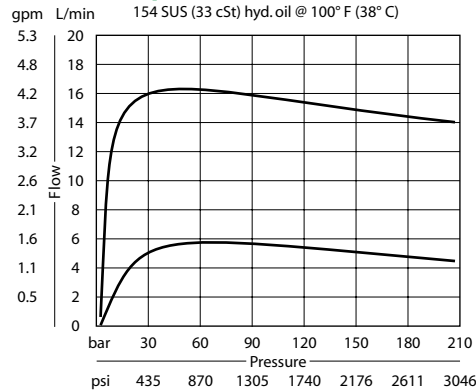
This valve is a limited adjustment pressure compensated flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



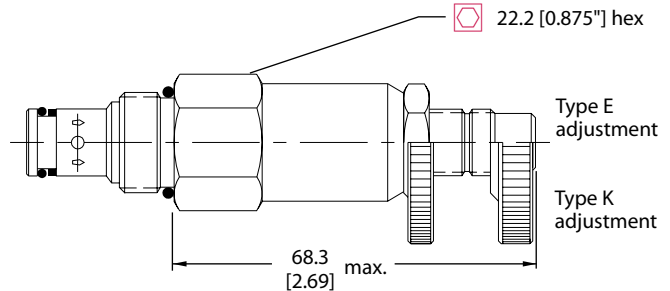
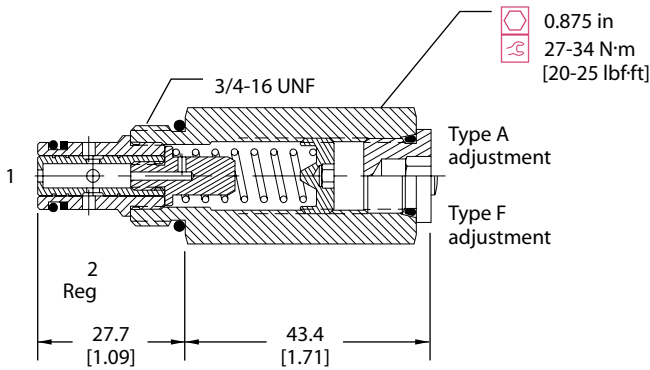
Specifications

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

Cross-sectional view

mm in



ORDERING INFORMATION

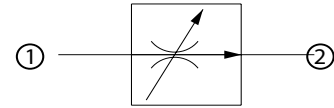
CP308 - 2 - B - 6S - A - 1.0

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

OPERATION

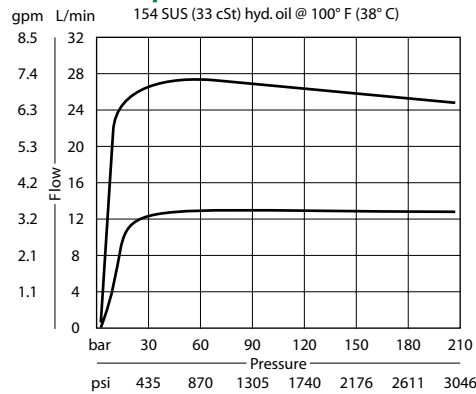
This valve is a limited adjustment pressure compensated flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



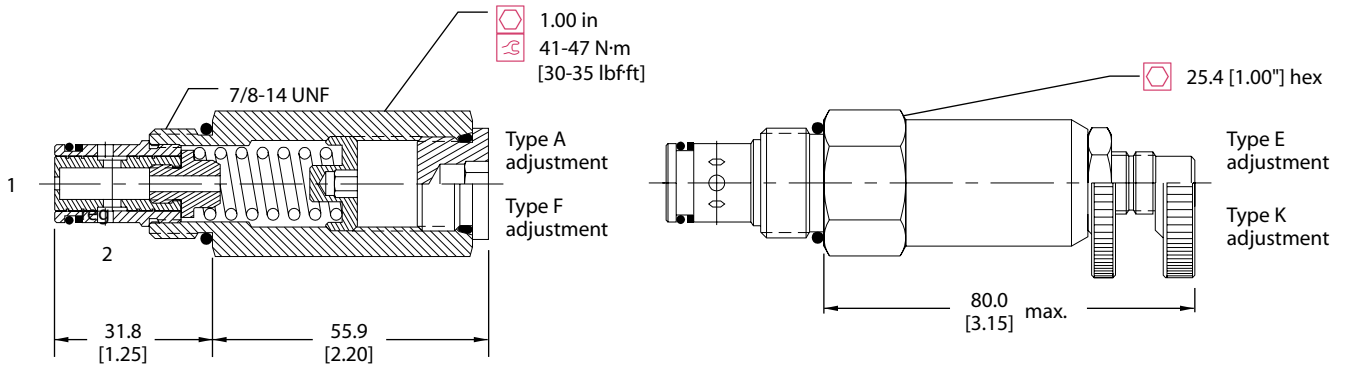
Specifications

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

DIMENSIONS

mm in

Cross-sectional view



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

- CP300 - 2 - B - 8S - A - 2.5**
- 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

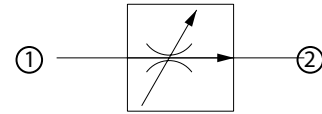
Flow (L/min)	Flow (US gal/min)
0.5	0.13
2.4	0.63
To	To
6.0	1.59
22.7	6.00

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

OPERATION

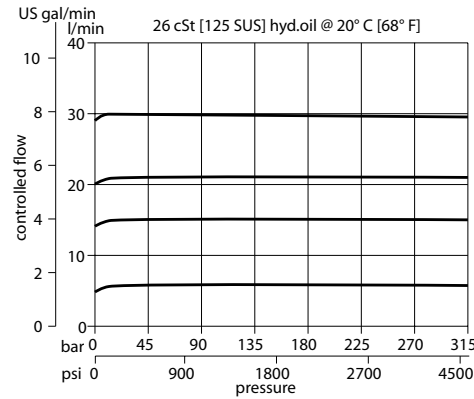
This valve is a limited adjustment, pressure compensated, restrictive-type flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



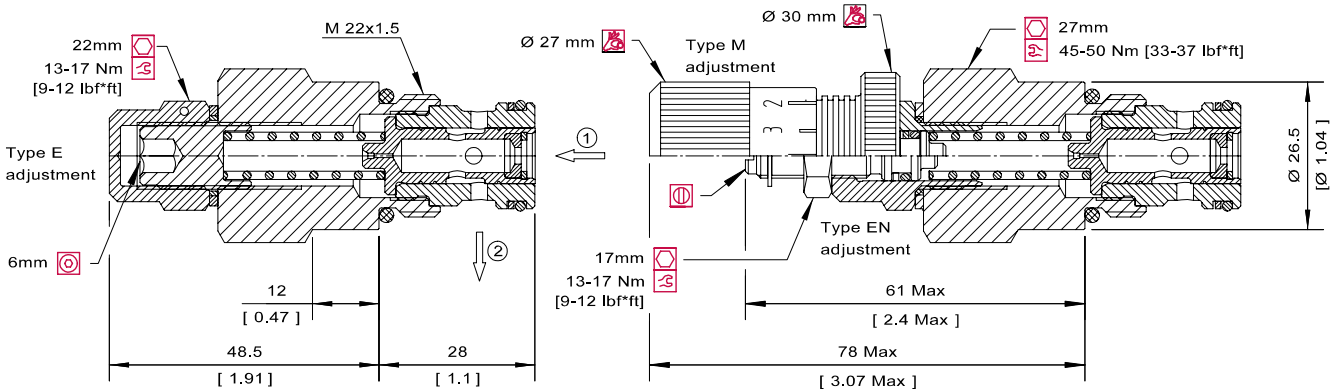
Specifications

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

Cross-sectional view

mm in



ORDERING INFORMATION

VR 06 - EN-1.25 - 00 - V

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]
2.00	3-10	[0.8-2.6]
3.00	6-20	[1.6-5.3]
3.50	10-30	[2.6-7.9]

other orifices available
 consult factory

Seals

V = Viton
 Omit = Buna-N

Seal kit

230000380
 230000060

Housing and ports

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

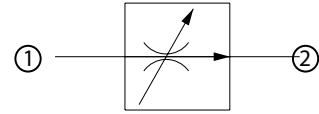
Housing P/N

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

OPERATION

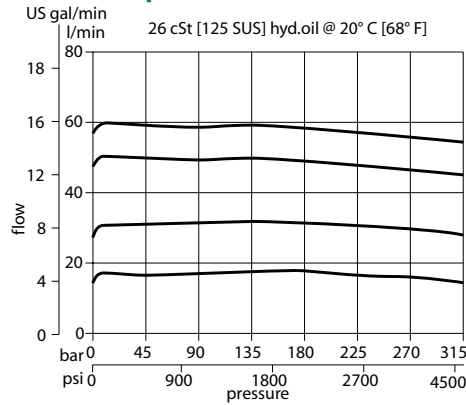
This valve is a limited adjustment, pressure compensated, restrictive-type flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



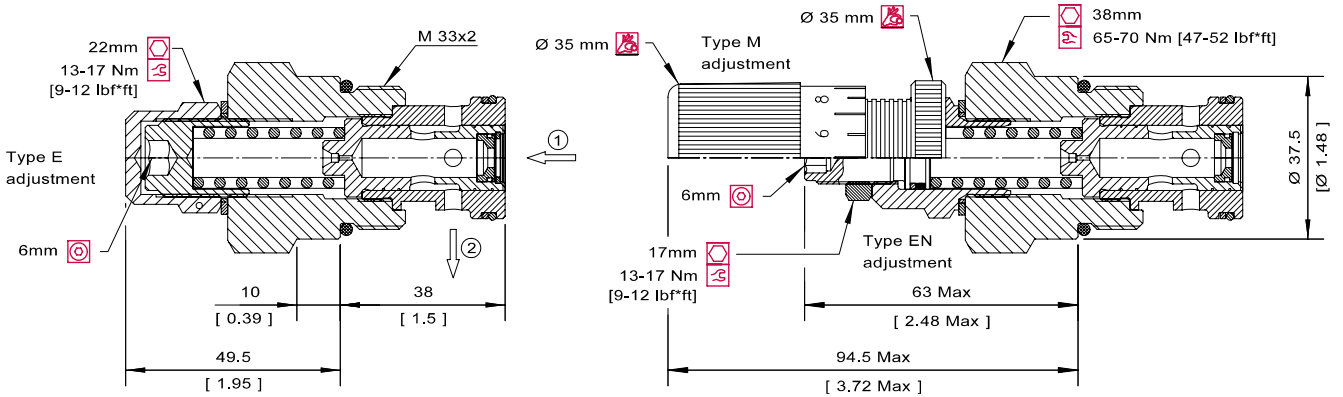
Specifications

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

DIMENSIONS

Cross-sectional view

mm in



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

OPERATION

The HFCV10-RT is a high pressure, fully adjustable, pressure compensated, restrictive-type flow control. This valve maintains a constant flow rate out of port 2 regardless of pressure variations at port 2 or port 1. An integral check valve allows unrestricted flow from port 2 to port 1.

The valve can be adjusted from closed to fully open (5 turns) with counter-clockwise rotation of the adjustment screw. Regulated flow ranges are available pre-set from the factory in 1 LPM increments between 1-11 LPM (0.26-2.9 US gal/min) and also at flows of 0.38 LPM (0.1 US gal/min) and 11.4 LPM (3.0 US gal/min).



APPLICATIONS

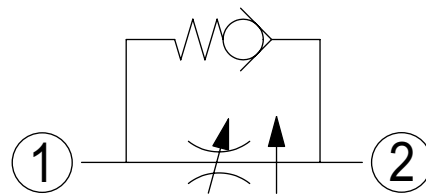
The HFCV10-RT features fine adjustability and can be used for meter-in, meter-out applications to control actuator speeds.

SPECIFICATIONS

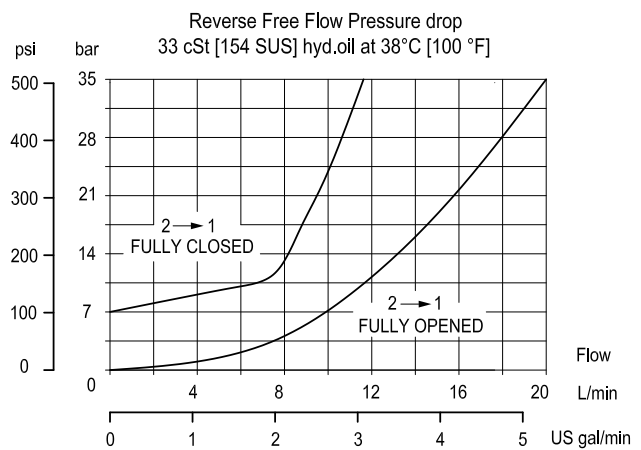
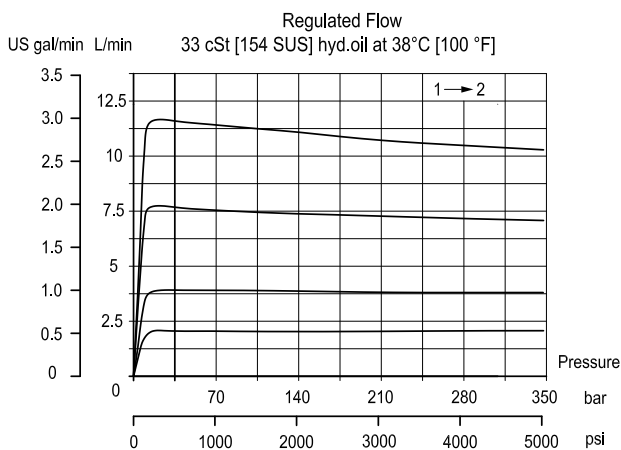
Rated Pressure*	350 bar [5075 psi]
Min Regulated Flow	0.38 lpm (0.1 US gal/min)
Max Regulated Flow	11.4 lpm (3.0 US gal/min)
Accuracy	+/- 12%
Leakage	40 ml/min @ rated pressure
Weight	0.17 kg 0.37 lbs
Cavity	SDC10-2

* Rated Pressure based on NFPA fatigue test standards (at 1 Million Cycles).

SCHEMATIC

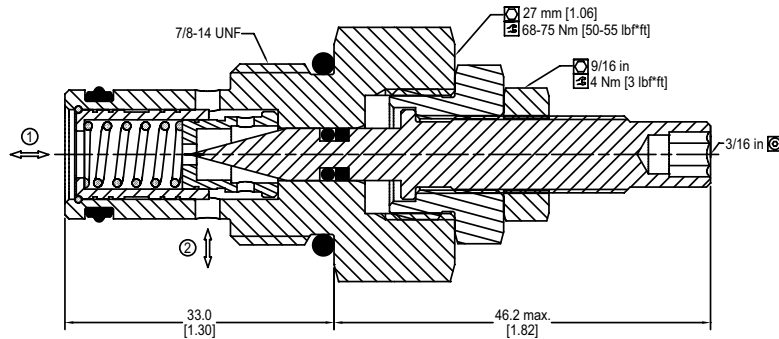


PERFORMANCE CURVES



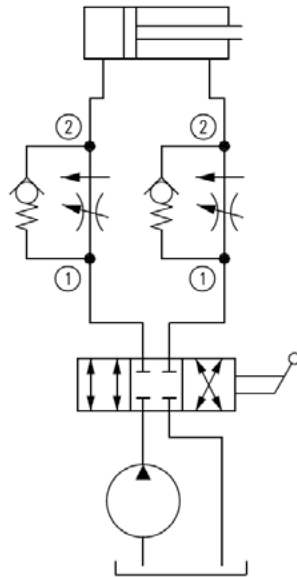
FC - Flow Control Valves
 HFCV10-RT

DIMENSIONS

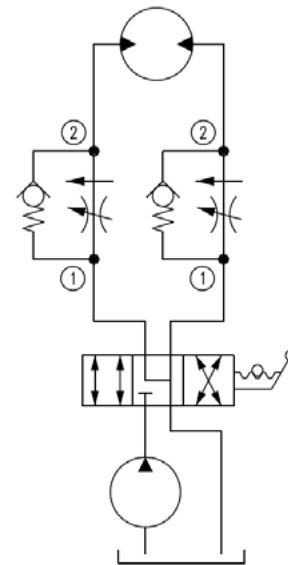


EXAMPLE CIRCUITS

Compensated Flow Control, Meter-In Cylinder



Compensated Flow Control, Meter-In Motor



FC- Flow Control Valves
 HFCV10-RT

ORDERING INFORMATION

High Pressure Flow Control,
 Pressure Compensated, Variable Orifice,
 10 Size, Restrictive Type

HFCV10 - RT - P - E - 1.0 - 00

Seal Option

Code	Seal Material	Seal kit
P	Polyurethane Single Seal	11132135
V	Viton	354000819

Adjustment Type

Code	Adjustment Type
E	External

Body	Ports & Material	Body Nomenclature
00	Cartridge Only	No Body
DG3B	3/8 BSP, AL	SDC10-2-DG3B
DG4B	1/2 BSP, AL	SDC10-2-DG4B
S4B	1/2 BSP, Ductile	CP10-2-S4B
6S	#6 SAE, AL	CP10-2-6S
8S	#8 SAE, AL	CP10-2-8S
S8S	#8 SAE, Ductile	CP10-2-S8S

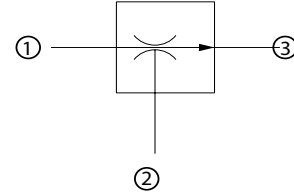
Regulated Flow Setting

L/min [US gal/min]
 0.38 [0.1]
 1.0-11.0 [0.26-2.9] increments of 1.0 L/min
 11.4 [3.0]

OPERATION

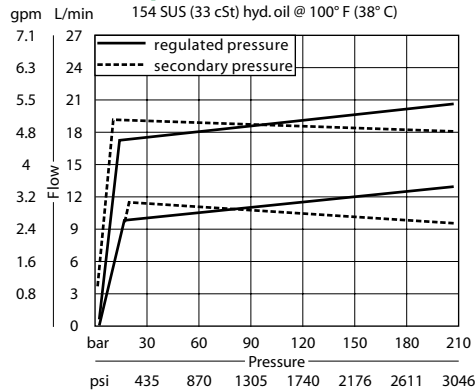
This valve is a fixed, pressure compensated priority-type flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



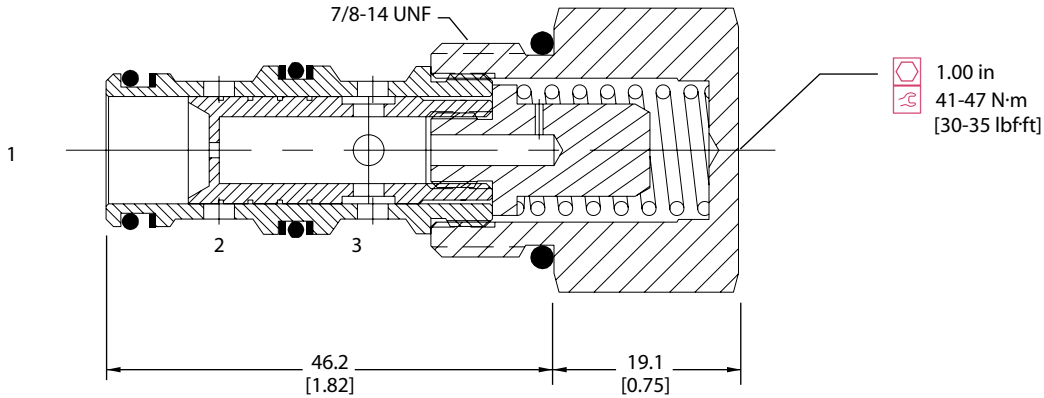
Specifications

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



ORDERING INFORMATION

Seals

B = Buna-N
 V = Viton

Housing and ports

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

Seal kit

120240
 11043064

Housing P/N

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

CP310-1-B-8S-2.5

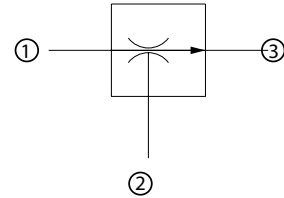
Regulated Flow

Flow (L/min)	Flow (US gal/m)
0.1	0.4 [0.1]
6.0	22.7 [6.0]

OPERATION

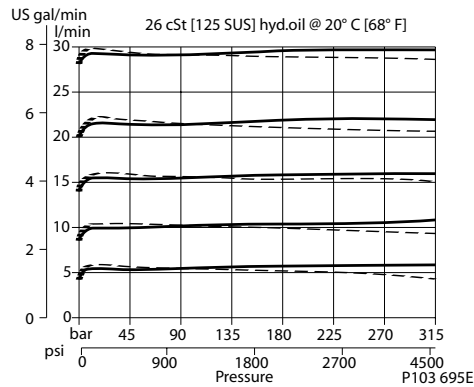
This valve is a fixed, pressure compensated, priority-type flow control.

Schematic



SPECIFICATIONS

Theoretical performance



Specifications

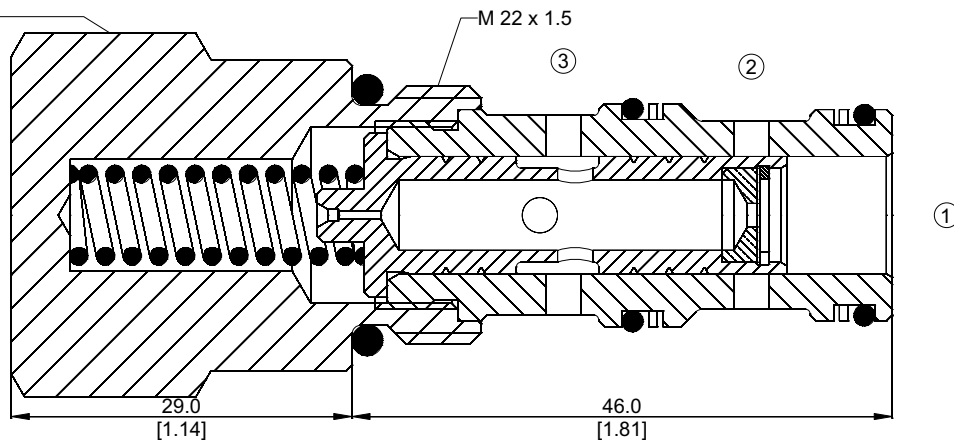
Rated pressure	315 bar [4500 psi]
Max regulated flow	26 l/min [7 US gal/min]
Max inlet flow	50 l/min [13 US gal/min]
Weight	0.19 kg [0.42 lb]
Accuracy ± 10%	2.3-25.5 l/min [0.5-6.8 US gal/min]
Cavity	NCS06/3

DIMENSIONS

Cross-sectional view

mm in

27 mm
 44-50 N·m
 [32-37 lbf·ft]



P103 667

ORDERING INFORMATION

VRF 06 - 1.5 - SE3/8 - V

Orifice	flow	
	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	[1.38]
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
 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

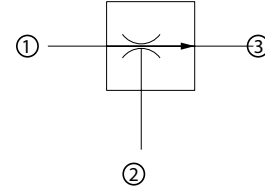
Housing P/N
 No Housing
 NCS06/3-SE-3/8
 NCS06/3-SE-1/2
 NCS06/3-SE-6S
 NCS06/3-SE-8S

P103 722E

OPERATION

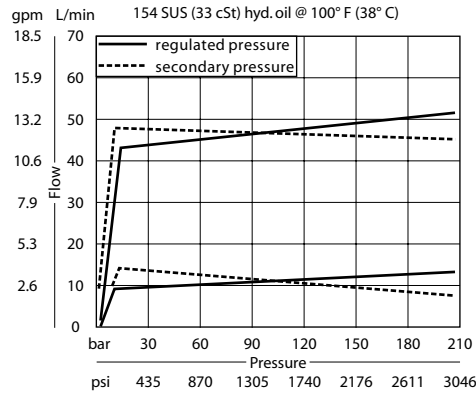
This valve is a fixed, pressure compensated priority-type flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



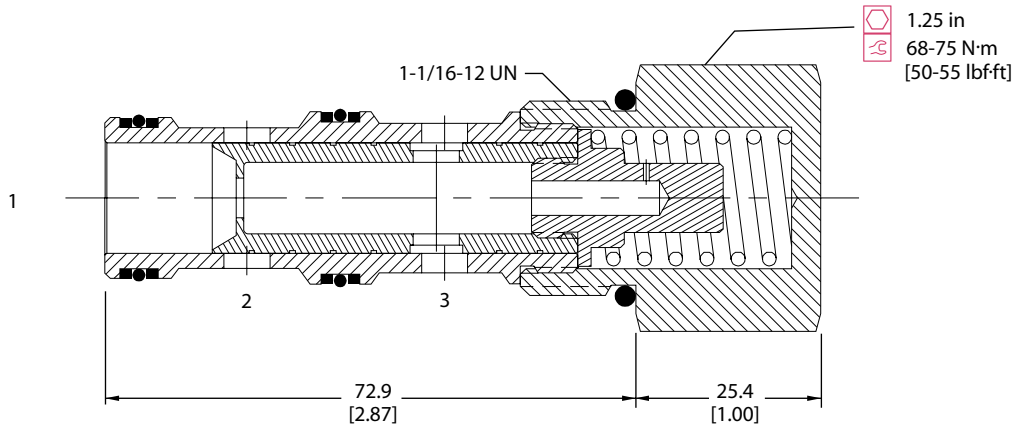
Specifications

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



ORDERING INFORMATION

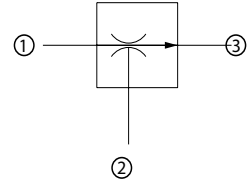
CP311 - 1 - B - 12S - 10.0

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

OPERATION

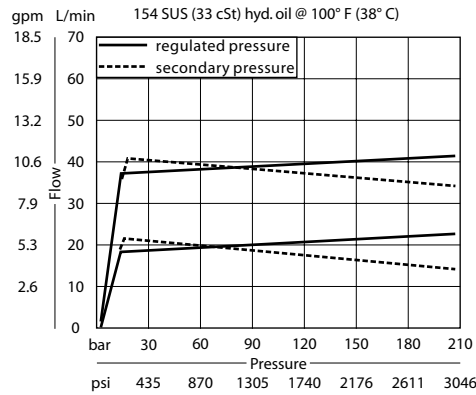
This valve is a fixed, pressure compensated priority-type flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



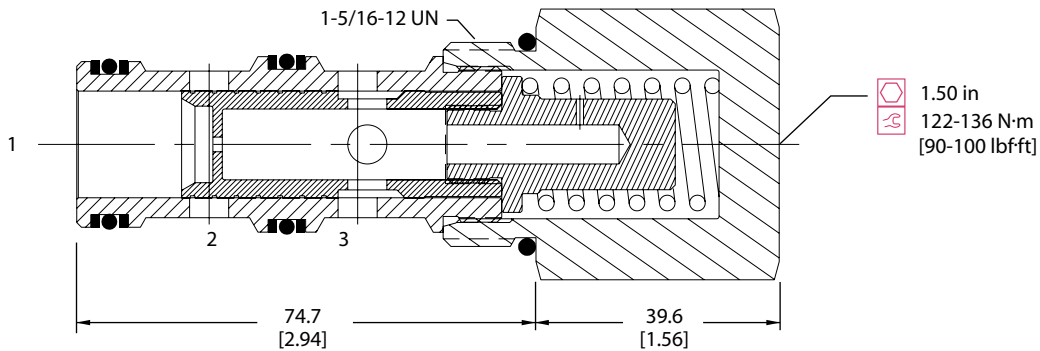
Specifications

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

DIMENSIONS

mm in

Cross-sectional view



ORDERING INFORMATION

CP312-1 - B - 16S - 10.0

Seal Option

Code	Seal Material	Seal kit
B	Buna	120202
V	Viton	120203

Housings & Ports	Housing P/N
0: Cartridge Only	No Housing
SE6B: 3/4 BSP, AL	SDC16-3-SE-6B
SE8B: 1 BSP, AL	SDC16-3-SE-8B
12S: #12 SAE, AL	CP16-3-12S
16S: #16 SAE, AL	CP16-3-16S

Other Housings available

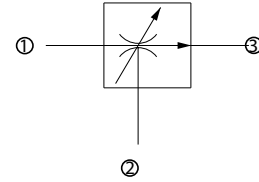
Regulated Flow

Code	L/min [US gal/min]
0.5 =	1.9 [0.5]
To	
17.0 =	64.3 [17.0]

OPERATION

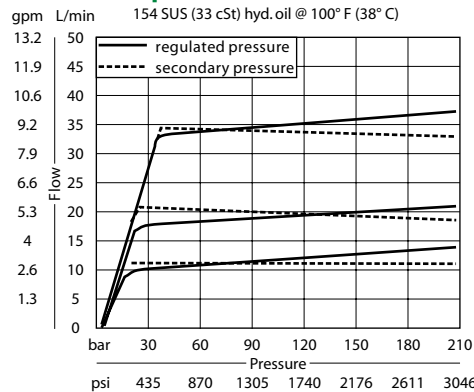
This valve is a limited adjustment, pressure compensated, priority-type flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



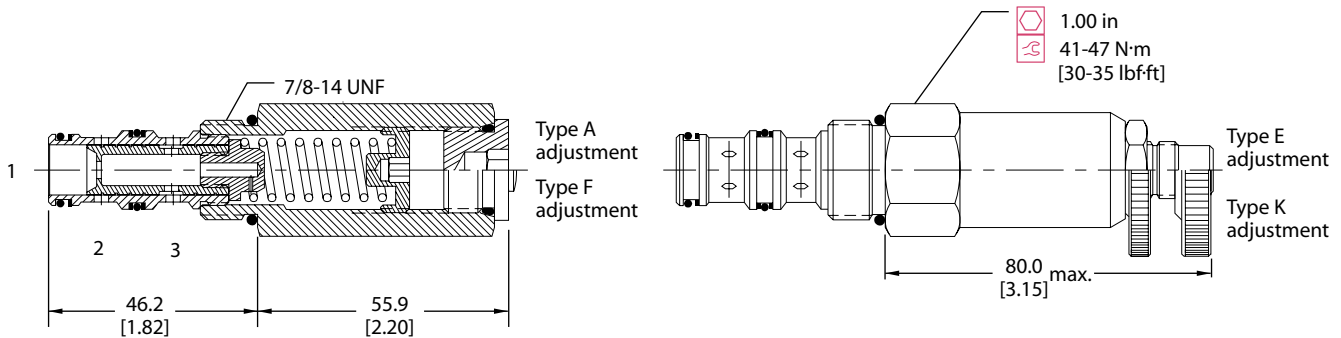
Specifications

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

Cross-sectional view

mm in



ORDERING INFORMATION

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

Seals
 B = Buna-N
 V = Viton

Seal kit
 120240
 11043064

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

Regulated Flow

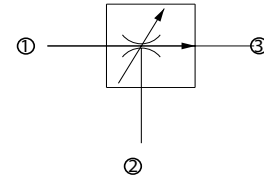
L/min	[US gal/min]
0.1 = .4	[0.1]
To	
6.0 = 22.7	[6.0]

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

OPERATION

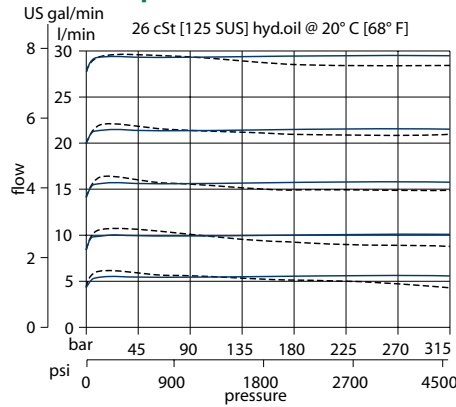
This valve is a limited adjustment, pressure compensated, priority-type flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



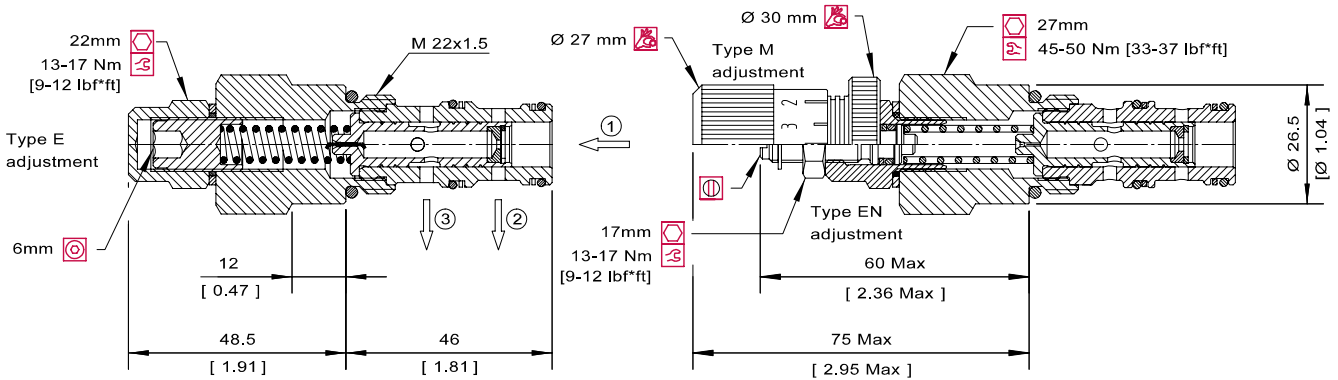
Specifications

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

DIMENSIONS

Cross-sectional view

mm in



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

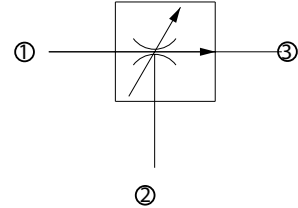
Housing and ports
 00 = No Housing
 SE3/8 = AL, 3/8 BSP
 SE1/2 = AL, 1/2 BSP
 SE6S = AL, #6 SAE
 SE8S = AL, #8 SAE
 Other housings available

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

OPERATION

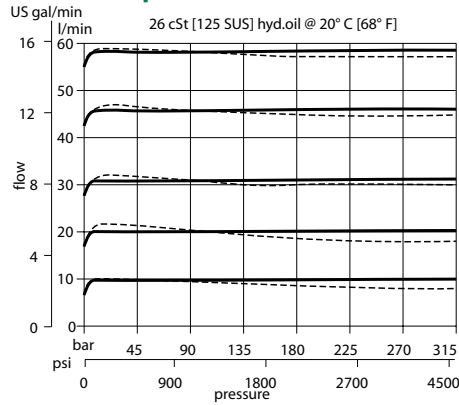
This valve is a limited adjustment, pressure compensated, priority-type flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



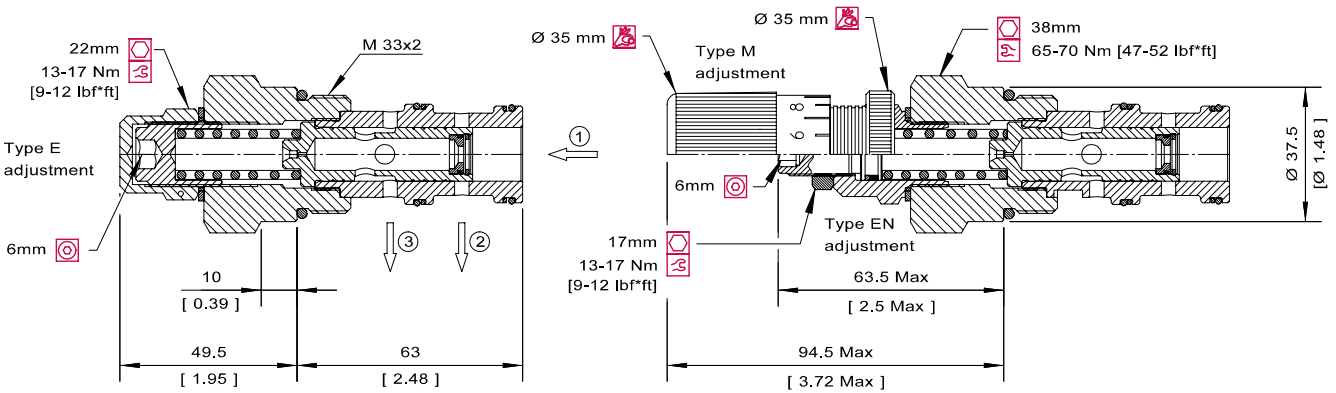
Specifications

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

DIMENSIONS

Cross-sectional view

mm in



ORDERING INFORMATION

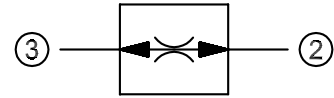
VRC 12 - EN-1.5 - SE1/2 - V

Adjustment		Seals	Seal kit
E = Internal screw		V = Viton	230000360
EN = External screw		Omit = Buna-N	230000130
M = Handwheel			
Orifice size		Housing and ports	Housing P/N
mm	L/min [US gal/min]	00 = No Housing	No Housing
1.50 =	2.5-6.5 [0.7-1.7]	SE1/2 = AL, 1/2 BSP	NCS12/3-SE-1/2
2.50 =	6-16 [1.6-4.2]	SE3/4 = AL, 3/4 BSP	NCS12/3-SE-3/4
3.50 =	9-32 [2.4-8.4]	SE8S = AL, #8 SAE	NCS12/3-SE-8S
4.00 =	16-40 [4.2-10.6]	SE12S = AL, #12 SAE	NCS12/3-SE-12S
5.00 =	25-60 [6.6-15.8]	Other housings available	
5.75 =	30-73 [7.9-19.3]		

OPERATION

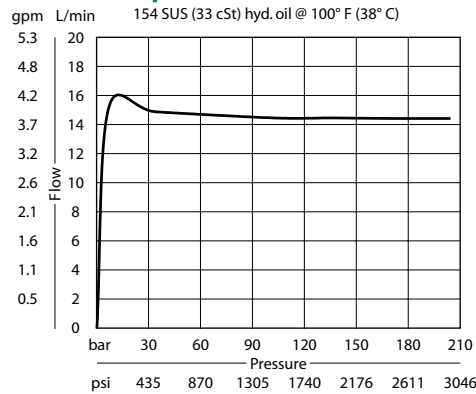
This valve is a fixed setting, pressure compensated, bi-directional flow control valve. NOTE: Port 1 must be blocked for proper operation.

Schematic



SPECIFICATIONS

Theoretical performance



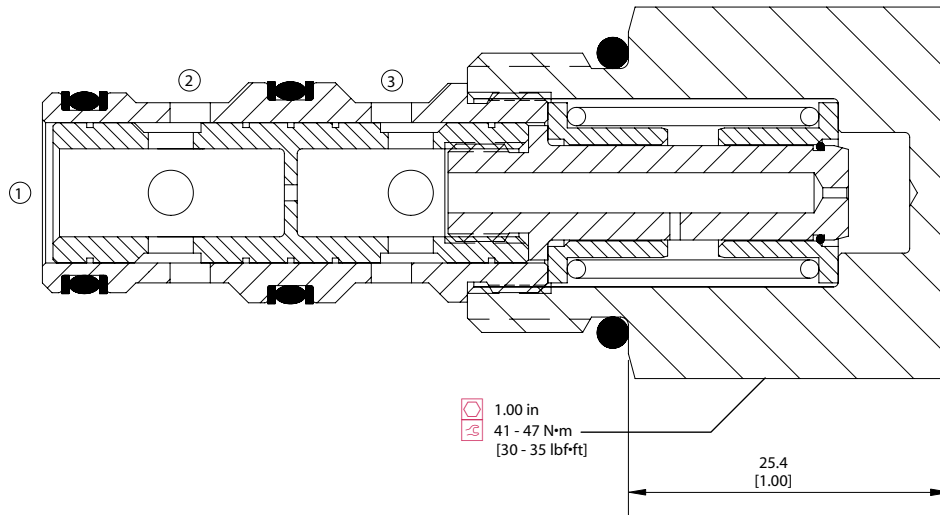
Specifications

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

DIMENSIONS

mm in

Cross-sectional view



ORDERING INFORMATION

CP300 - 6 - B - 8S - 2.5

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

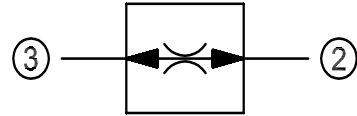
Regulated Flow

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

OPERATION

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

Schematic

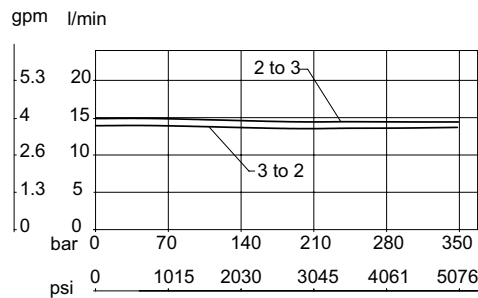


SPECIFICATIONS

Theoretical performance

Performance

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



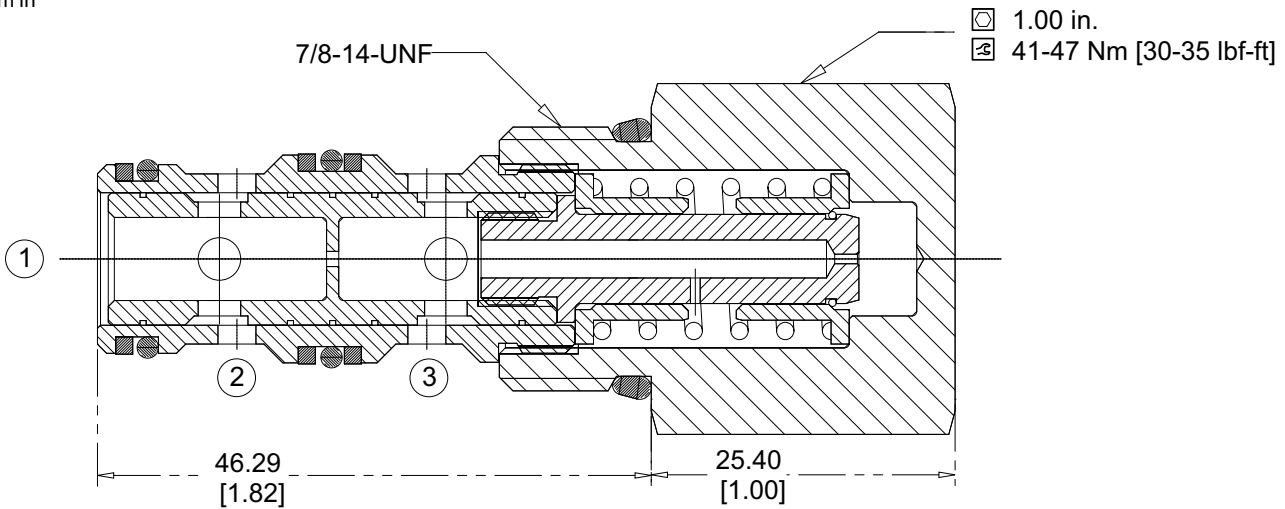
Specifications

Rated pressure	350 bar [5075 psi]
Max regulated flow	23 l/min [6 US gal/min]
Weight	0.14 kg [0.34 lb]
Accuracy ± 20%	0.4-2.2 l/min [0.1-0.6 US gal/min]
± 15%	2.3-22.7 l/min [0.6-6.0 US gal/min]
Cavity	SDC10-3

DIMENSIONS

mm in

Cross-sectional view



ORDERING INFORMATION

FCH10-BD-3.8-U-00

Regulated Flow
 0.4 = 0.4 lpm [0.1 gpm]
 to
 22.7 = 22.7 lpm [6.0 gpm]

Housing and ports
 00 = No Housing
 DG-3B = Al, 3/8 BSP
 DG-4B = Al, 1/2 BSP
 6S = Al, #6 SAE
 8S = Al, #8 SAE

Housing Part #
 No Housing
 SDC10-3-DG-3B
 SDC10-3-DG-4B
 CP10-3-6S
 CP10-3-8S

Seals
 U = Urethane

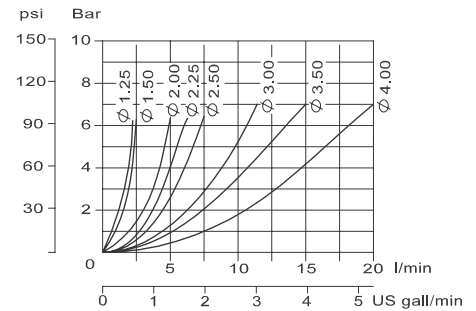
Seal Kit
 120726

OPERATION

This is an in-line restrictive type flow control valve.

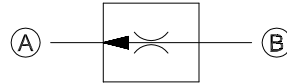
Theoretical performance

Pressure drop from A \Rightarrow B according to orifice diameter
 26 cSt [121 SUS] hyd.oil at 50°C [122 °F]



SPECIFICATIONS

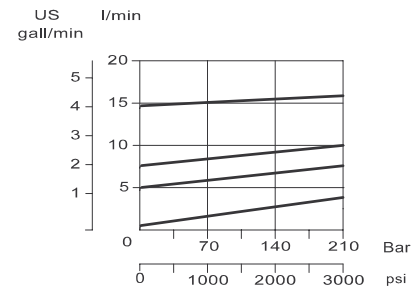
Schematic



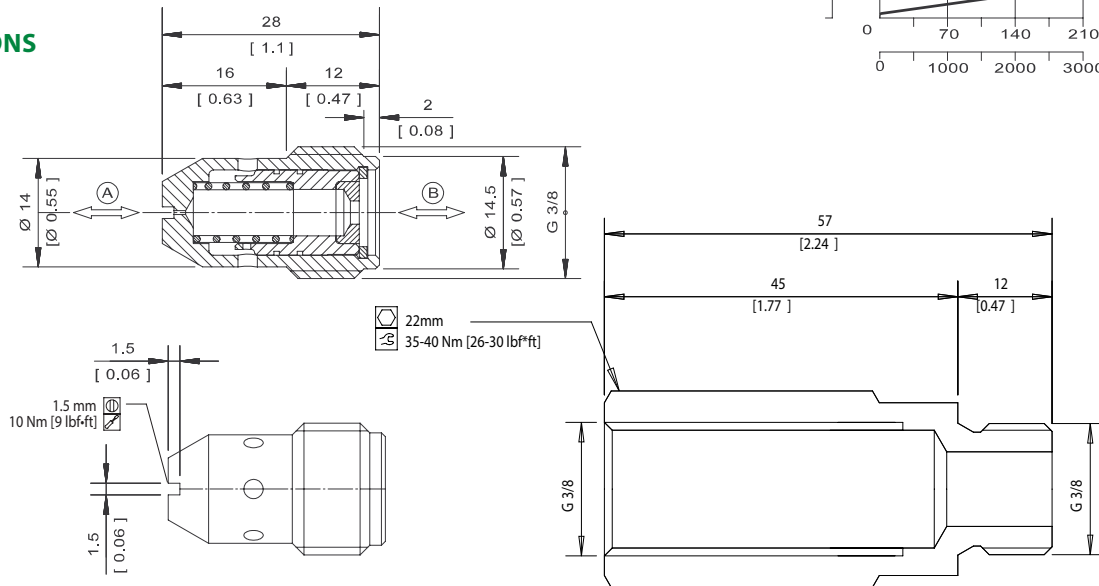
Specifications

Pressure rating	210 bar [3000 psi]
Max regulated flow	16 l/min [4.2 US gal/min]
Cavity	Consult factory

Variation in controlled flow from B \Rightarrow A according to pressure
 26 cSt [121 SUS] hyd.oil at 50°C [122 °F]



DIMENSIONS



ORDERING INFORMATION

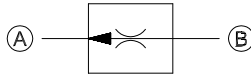
SC10 - 1.25 - G - 00

Orifice diameter mm	Flow at 100 bar [1450 psi] l/min [US gal/min]	Notes
1.25	2.0[0.53]	00 = Cartridge only L = 3/8 BSP
1.50	3.0[0.79]	
2.00	4.0[1.06]	
2.25	5.0[1.32]	
2.50	6.0[1.59]	
3.00	9.0[2.38]	
3.50	11.0[2.91]	
4.00	16.0[4.23]	

OPERATION

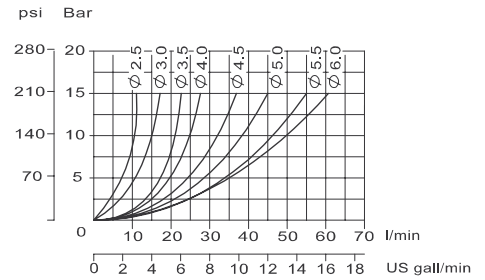
This is an in-line restrictive type flow control valve.

Schematic



Theoretical performance

Pressure drop from A \Rightarrow B according to orifice diameter
 26 cSt [121 SUS] hyd.oil at 50°C [122 °F]

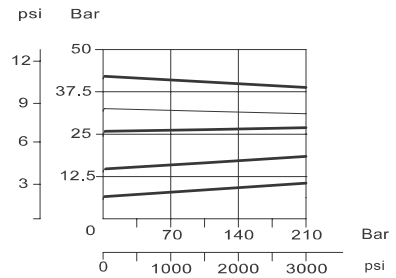


SPECIFICATIONS

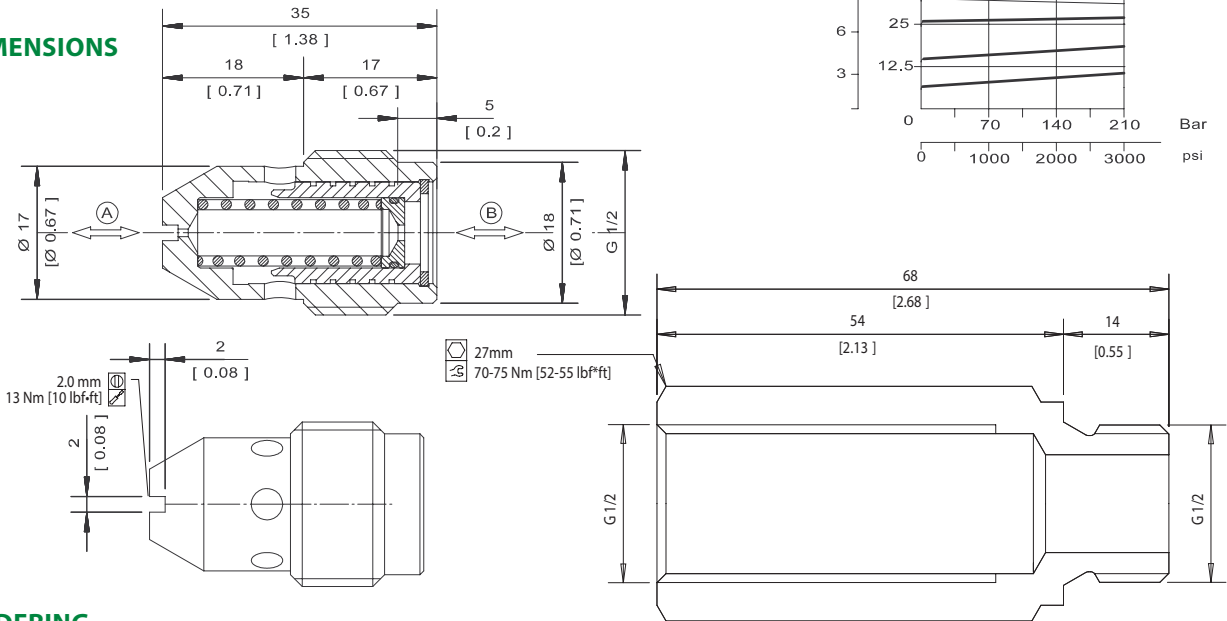
Specifications

Pressure rating	207 bar [3000 psi]
Max regulated flow	47 l/min [12 US gal/min]
Cavity	Consult factory

Variation in controlled flow from B \Rightarrow A according to pressure
 26 cSt [121 SUS] hyd.oil at 50°C [122 °F]



DIMENSIONS



ORDERING INFORMATION

SC13/4.5 - G - 00

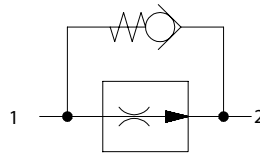
Orifice flow	Orifice diameter mm	Flow at 100 bar [1450 psi] l/min [US gal/min]	Notes
	2.50	9 [2.38]	00 = Cartridge only L = 1/2 BSP
	3.00	12 [3.17]	
	3.50	17 [4.49]	
	4.00	21 [5.55]	
	4.50	27 [7.13]	
	5.00	32 [8.45]	
	5.50	40 [10.57]	
	6.00	47 [12.42]	

OPERATION

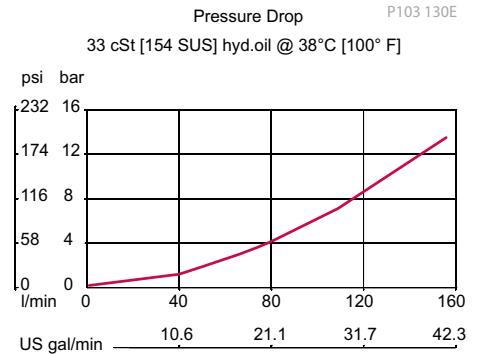
This is an in-line restrictive type flow control valve with free reverse flow.

SPECIFICATIONS

Schematic

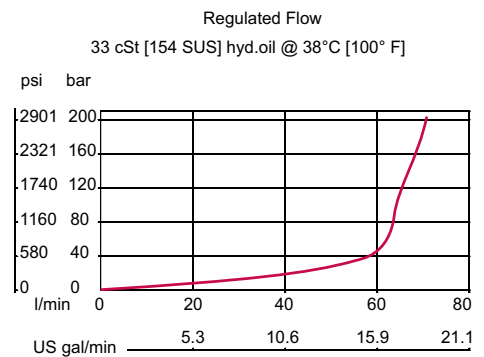


Theoretical performance



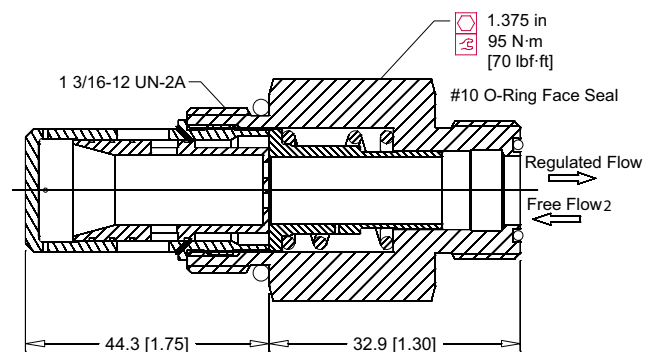
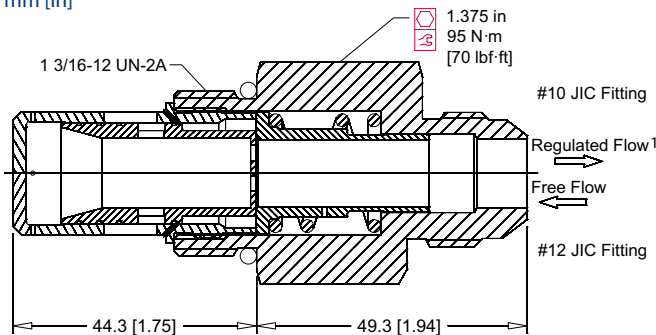
Specifications

Pressure rating	207 bar [3000 psi]
Rated Free Flow at 7 bar [100 psi]	113 l/min [30 US gal/min]
Max regulated flow	106 l/min [28 US gal/min]
Cavity	Modified SAE #14 port



DIMENSIONS

mm [in]



ORDERING INFORMATION

CP9014-1-B-10-24

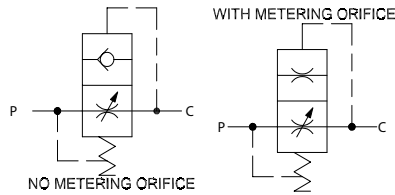
Seals	Seal kit	Flow Setting
B = Buna-N	720025	l/min USgal/min
V = Viton	720363	18 = 68.1 18
		24 = 90.8 24
		28 = 106.0 28
		Consult factory for complete list of flows.
		Connection (Port2)
		10 = #10SAE37° JIC Fitting 7/8-14UNC-2A
		12 = #12SAE37° JIC Fitting 11/16-12UN-2A
		FS10 = #10SAEO-Ring Face Seal 17/16-12UN-2A

OPERATION

This is an in-line flow limiter that closes and then provides non-compensated restricted flow when the specified flow setting is exceeded. The valve provides free reverse flow when operated in the opposite direction.

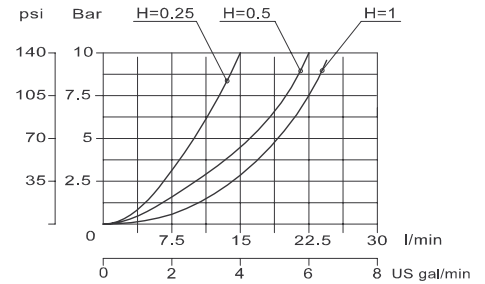
SPECIFICATIONS

Schematic

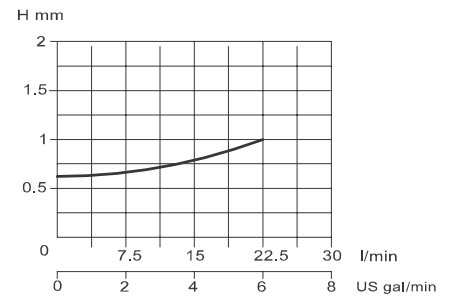


Theoretical performance

Pressure drop from P ⇒ C according to Adjustment H
 26 cSt [121 SUS] hyd.oil at 50°C [122 °F]



Values for adjustment H are guideline only, being conditioned by a variety of factors (oil temperature and viscosity, volume and flexibility of circuits).



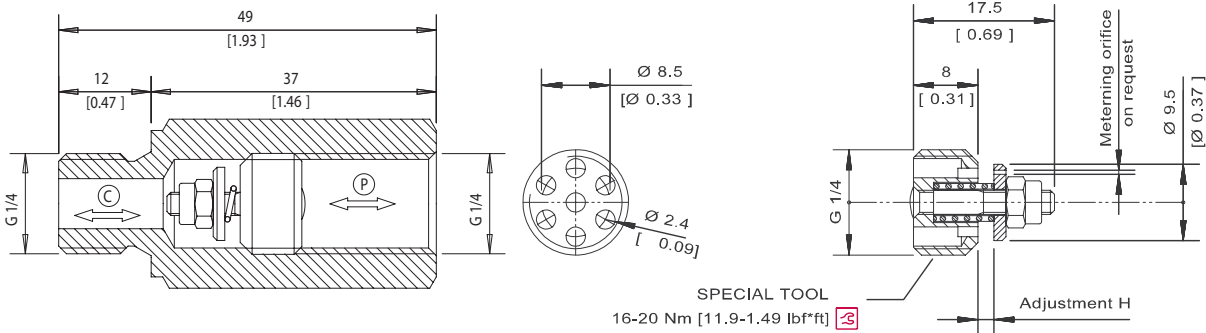
Specifications

Pressure rating	210 bar [3000 psi]
Rated Free Flow at 7 bar [100 psi]	30 l/min [8 US gal/min]
Cavity	Consult factory

FC - Flow Control Valves
BC 06

DIMENSIONS

mm [in]



ORDERING INFORMATION

BC 06 - 1.0 - G - 00 - S1.5

Adjustment H

Metering orifice

- 00 = No factory adjustment
- 0.25 = 0.25 mm [in]
- 0.5 = 0.5 mm [in]
- 1.0 = 1.0 mm [in]
- 1.5 = 1.5 mm [in]
- 2.0 = 2.0 mm [in]

- Omit = No orifice
- S0.5 = 0.5 mm [in]
- S0.7 = 0.7 mm [in]
- S1.0 = 1.0 mm [in]
- S1.5 = 1.5 mm [in]
- S2.0 = 2.0 mm [in]

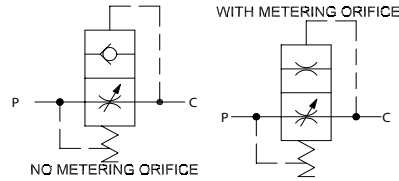
- 00 = Cartridge only
- L = 1/4 BSP

OPERATION

This is an in-line flow limiter that closes and then provides non-compensated restricted flow when the specified flow setting is exceeded. The valve provides free reverse flow when operated in the opposite direction.

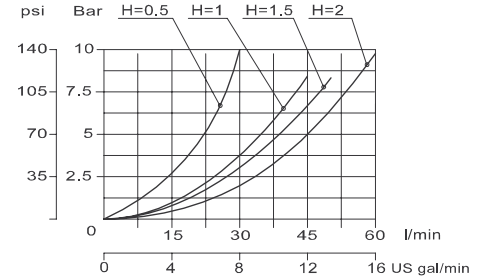
SPECIFICATIONS

Schematic



Theoretical performance

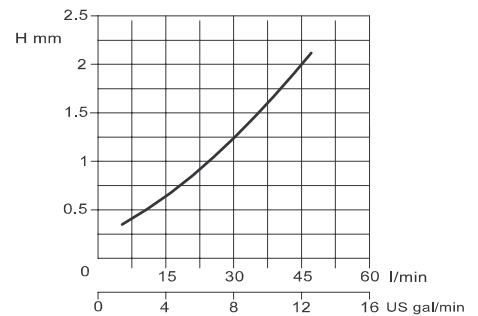
Pressure drop from P to C according to Adjustment H
26 cSt [121 SUS] hyd.oil at 50°C [122 °F]



Specifications

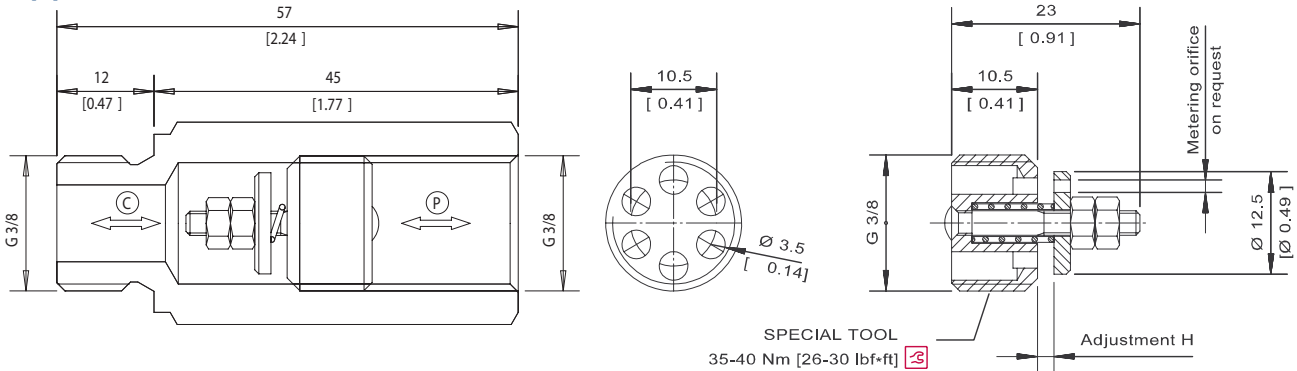
Pressure rating	210 bar [3000 psi]
Rated Free Flow at 7 bar [100 psi]	60 l/min [16 US gal/min]
Cavity	Consult factory

Values for adjustment H are guideline only, being conditioned by a variety of factors (oil temperature and viscosity, volume and flexibility of circuits).



DIMENSIONS

mm [in]



ORDERING INFORMATION

BC 10 - 1.0 - G - 00 - S1.5

Adjustment H

- 00 = No factory adjustment
- 0.25 = 0.25 mm [in]
- 0.5 = 0.5 mm [in]
- 1.0 = 1.0 mm [in]
- 1.5 = 1.5 mm [in]
- 2.0 = 2.0 mm [in]

Metering orifice

- Omit = No orifice
- S0.5 = 0.5 mm [in]
- S0.7 = 0.7 mm [in]
- S1.0 = 1.0 mm [in]
- S1.5 = 1.5 mm [in]
- S2.0 = 2.0 mm [in]

Coupling

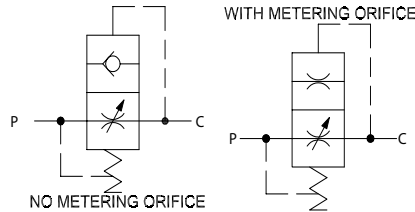
- 00 = Cartridge only
- L = 3/8 BSP

OPERATION

This is an in-line flow limiter that closes and then provides non-compensated restricted flow when the specified flow setting is exceeded. The valve provides free reverse flow when operated in the opposite direction.

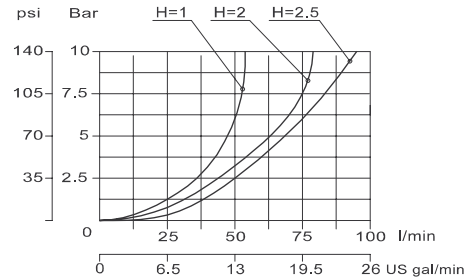
SPECIFICATIONS

Schematic

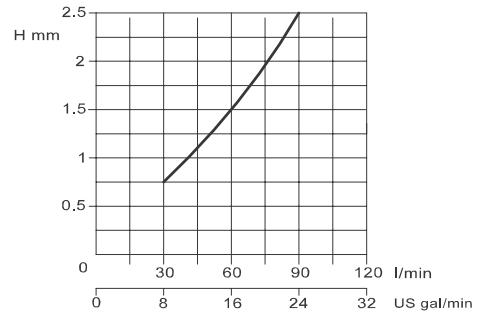


Theoretical performance

Pressure drop from P → C according to Adjustment H
 26 cSt [121 SUS] hyd.oil at 50°C [122 °F]



Values for adjustment H are guideline only, being conditioned by a variety of factors (oil temperature and viscosity, volume and flexibility of circuits).



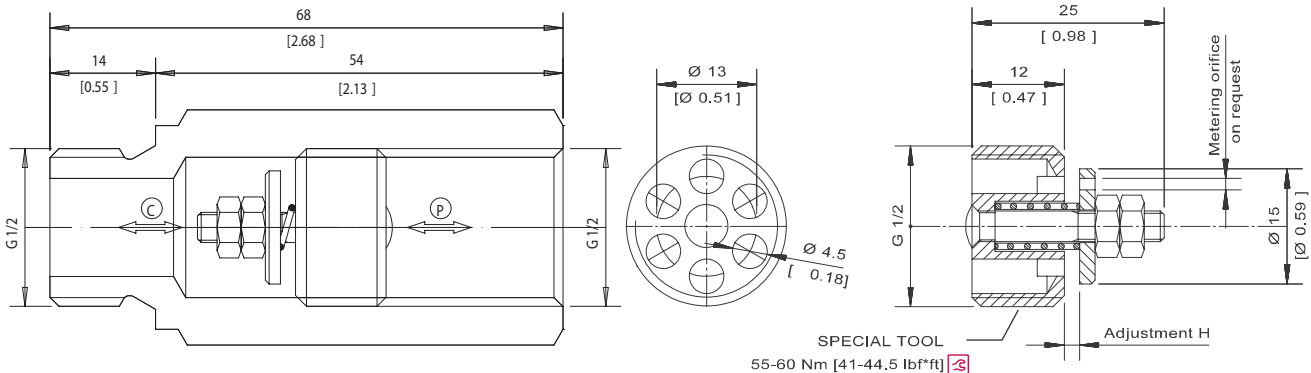
Specifications

Pressure rating	210 bar [3000 psi]
Rated Free Flow at 7 bar [100 psi]	85 l/min [30 US gal/min]
Cavity	Consult factory

Flow control Valves
 BC 13

DIMENSIONS

mm in



ORDERING INFORMATION

BC 13 - 1.0 - G - 00 - S1.5

Adjustment H

- 00 = No factory adjustment
- 0.25 = 0.25 mm [in]
- 0.5 = 0.5 mm [in]
- 1.0 = 1.0 mm [in]
- 1.5 = 1.5mm
- 2.0 = 2.0mm

Metering orifice

- Omit = No orifice
- S0.5 = 0.5 mm [in]
- S0.7 = 0.7 mm [in]
- S1.0 = 1.0 mm [in]
- S1.5 = 1.5 mm [in]
- S2.0 = 2.0 mm [in]

Coupling

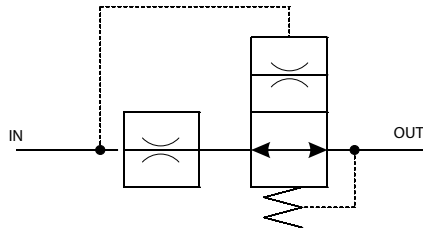
- 00 = Cartridge only
- L = 3/8 BSP

OPERATION

This is an in-line flow limiter that closes and then provides non-compensated restricted flow when the specified flow setting is exceeded. The valve provides free reverse flow when operated in the opposite direction.

SPECIFICATIONS

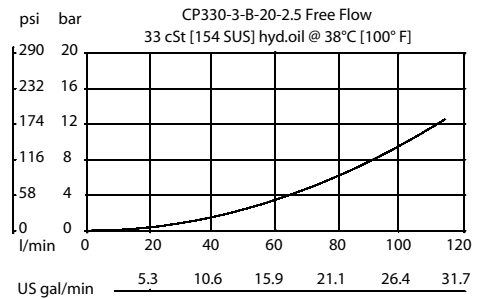
Schematic



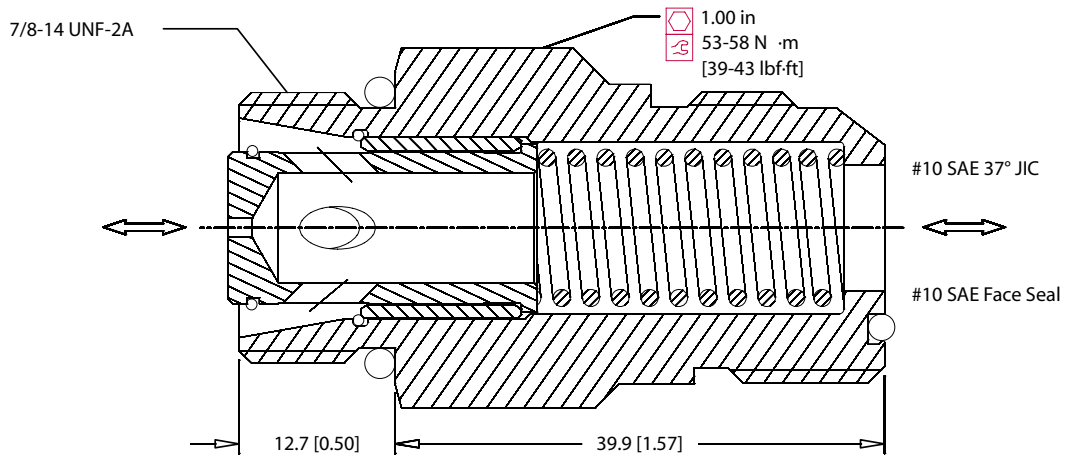
Specifications

Pressure rating	207 bar [3000 psi]
Max Trip Flow	110 l/min [29 US gal/min]
Bypass Flow	9.5 lpm [2.5 gal/min]
Weight	0.12 kg [0.26 lbs]
Cavity	#10 SAE Port

Theoretical performance



DIMENSIONS



ORDERING INFORMATION

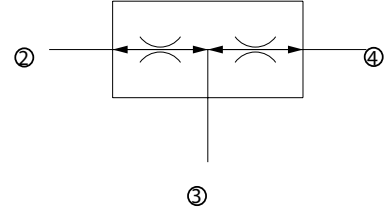
CP330-3-B-FS10-17-2.5

Seals B = BUNA-N V = VITON		Bypass Flow @ 48 bar [700 psi]	
		l/min	USgal/min
		2.5 = 9.5	2.5
Fitting Type Omit = #10SAE37° JIC FS10 = #10SAE face seal		Flow Setting	
		l/min	USgal/min
		17 = 64.4	17
		20 = 75.7	20
		23 = 87.1	23
		26 = 98.4	26
		29 = 109.8	29

OPERATION

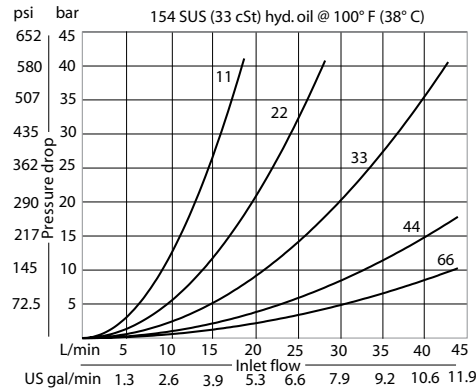
This valve is a fixed ratio, pressure compensated flow divider/combiner.

Schematic



SPECIFICATIONS

Theoretical performance

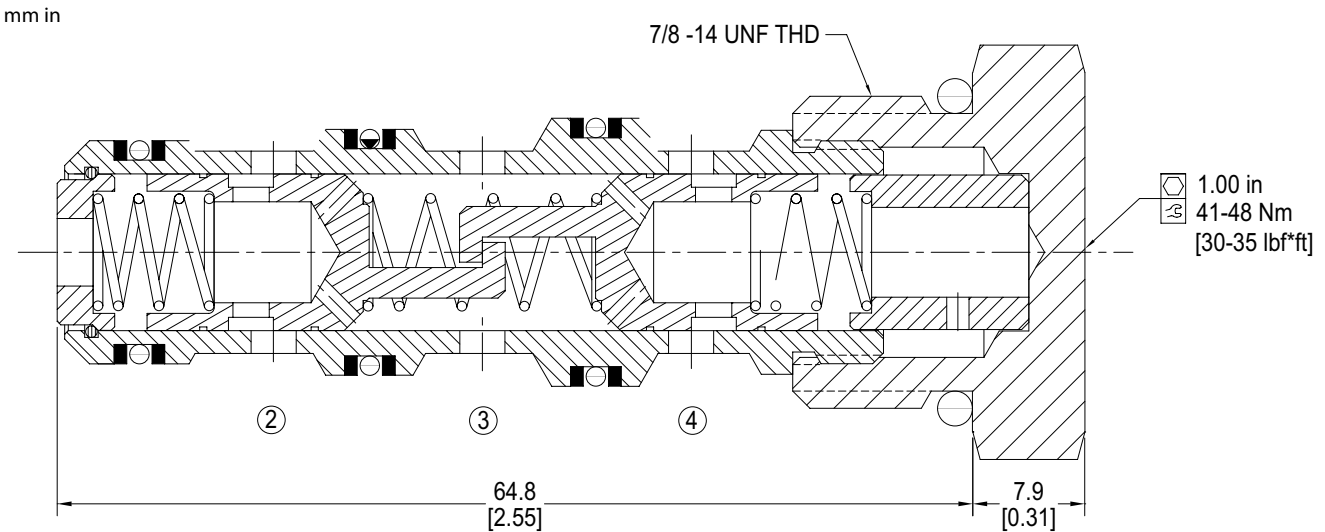


Specifications

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

DIMENSIONS

Cross-sectional view



ORDERING INFORMATION

CP340-1 - B - 6S - 44

Seal Option

Code	Seal Material	Seal kit
B	Buna	120023
V	Viton	120024

Housings & Ports	Housing P/N
0: Cartridge Only	No Housing
3B: 3/8 BSP, AL	CP10-4-2B-X1
4B: 1/2 BSP, AL	CP10-4-3B-X1
6S: #6 SAE, AL	CP10-4-6S-X1
8S: #8 SAE, AL	CP10-4-8S-X1

Other Housings available

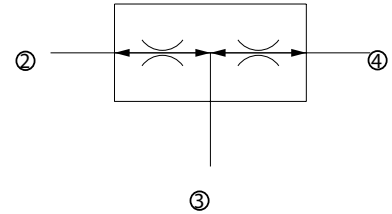
Flow Settings

Code	Flow Ratio		Total Flow
	Port 2: Port 4		
11	1:1		7.6 L/min [2 gpm]
22	1:1		15 L/min [4 gpm]
33	1:1		23 L/min [6 gpm]
36	1:2		34 L/min [9 gpm]
44	1:1		30 L/min [8 gpm]
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]

OPERATION

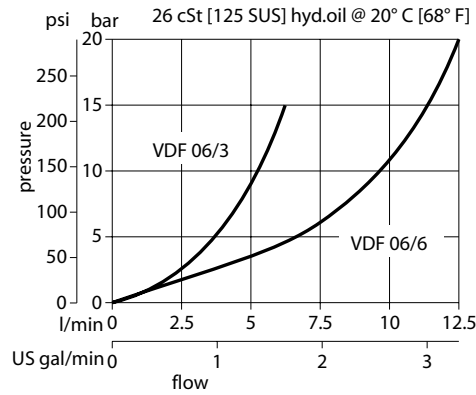
This valve is a fixed ratio, pressure compensated flow divider/combiner.

Schematic



SPECIFICATIONS

Theoretical performance

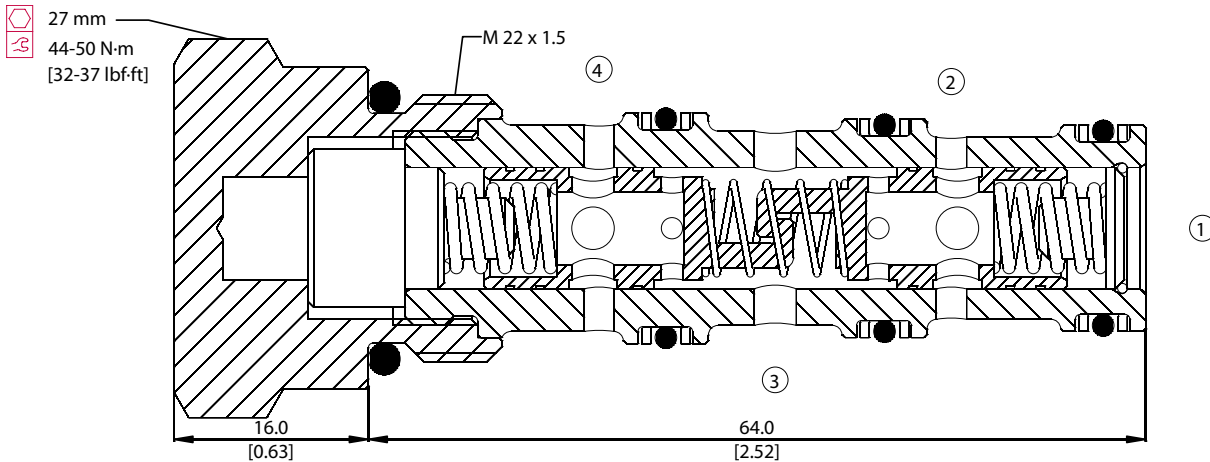


Specifications

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

DIMENSIONS

Cross-sectional view



ORDERING INFORMATION

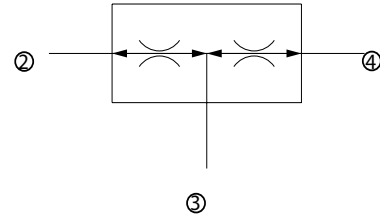
VDF 06 - 10 - 00 - V

Flow rate	Seals	Seal kit
l/min [US gal/min]	V = Viton	230000350
3 = Min 3 [0.8] Max 6.5 [1.7]	Omit = Buna-N	230000610
6 = Min 6 [1.6] Max 12.5 [3.3]		
10 = Min 10 [2.6] Max 25 [6.6]	Housing and ports	Housing P/N
25 = Min 22 [5.8] Max 45 [11.9]	00 = No Housing	No Housing
	L3/8 = AL, 3/8 BSP	NCS06/4-L-3/8
	L3/4 = AL, 3/4 BSP	NCS06/4-L-3/4
	L6S = AL, #6 SAE	NCS06/4-L-6S
	L8S = AL, #8 SAE	NCS06/4-L-8S
	Other housings available	

OPERATION

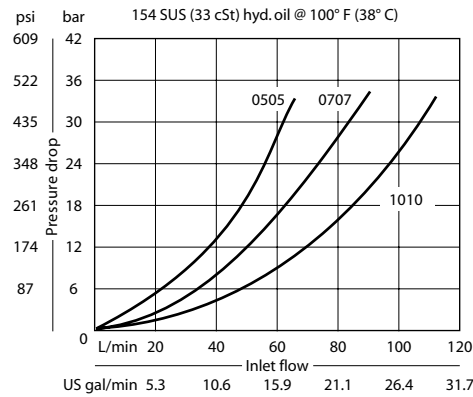
This valve is a fixed ratio, pressure compensated flow divider/combiner.

Schematic



SPECIFICATIONS

Theoretical performance

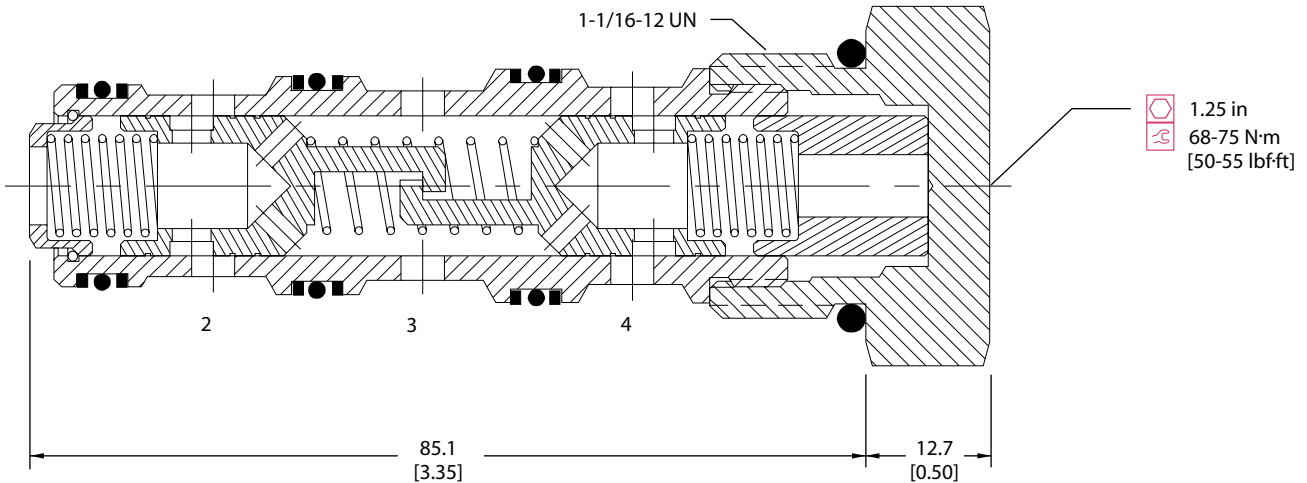


Specifications

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

DIMENSIONS

Cross-sectional view



ORDERING INFORMATION

CP341 - 1 - B - 10S - 0707

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

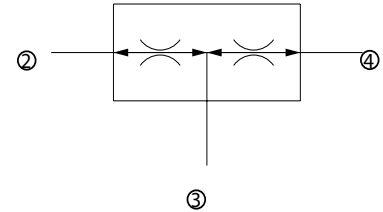
Flow settings

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]

OPERATION

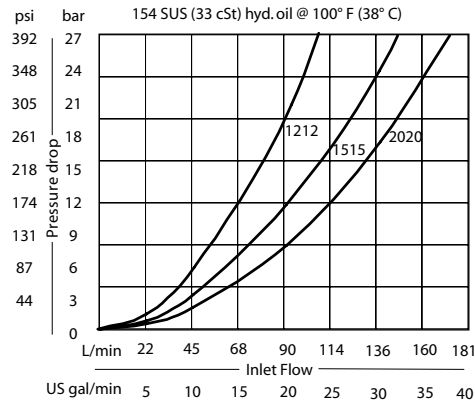
This valve is a fixed ratio, pressure compensated flow divider/combiner.

Schematic



SPECIFICATIONS

Theoretical performance

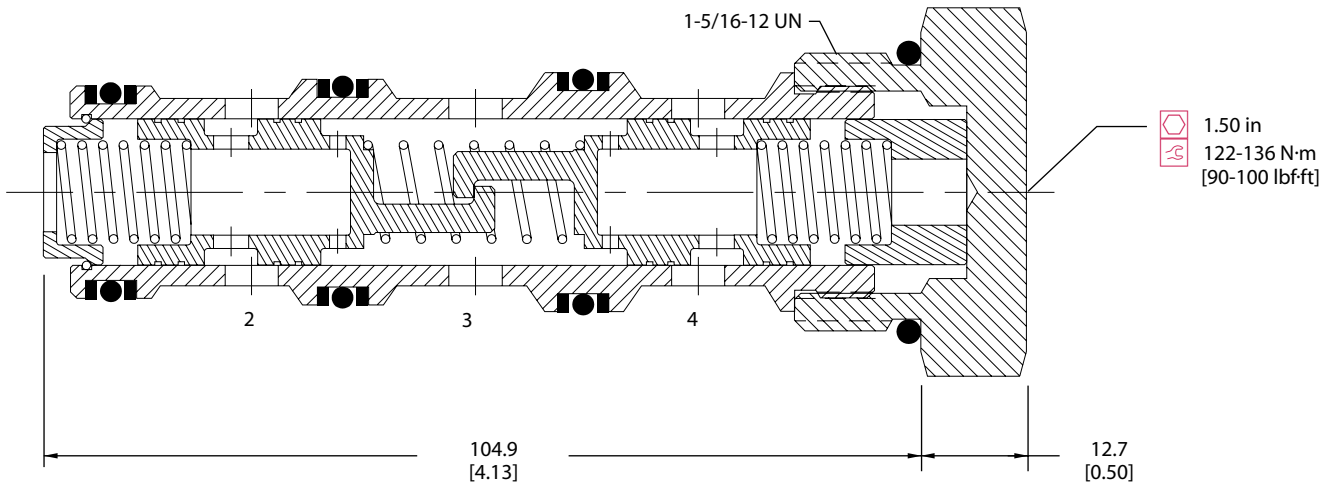


Specifications

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

DIMENSIONS

Cross-sectional view



ORDERING INFORMATION

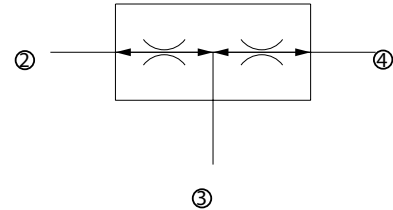
CP342 - 1 - B - 16S - 1515

Seals	Seal kit	Housing and ports	Housing P/N	Code	Flow settings	Total flow
B = Buna-N	120025	0 = No Housing	No Housing	1020	Port 2:Port 4 1:2	30 gpm [114 L/min]
V = Viton	120026	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]

OPERATION

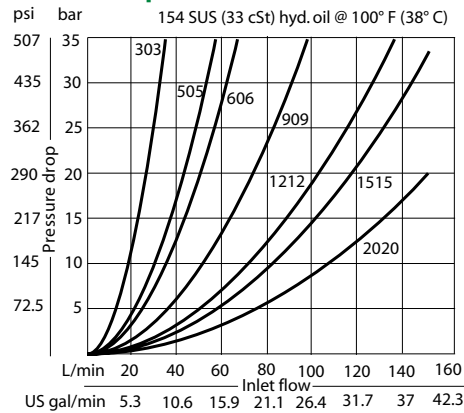
This valve is a fixed ratio, pressure compensated flow divider/combiner.

Schematic



SPECIFICATIONS

Theoretical performance

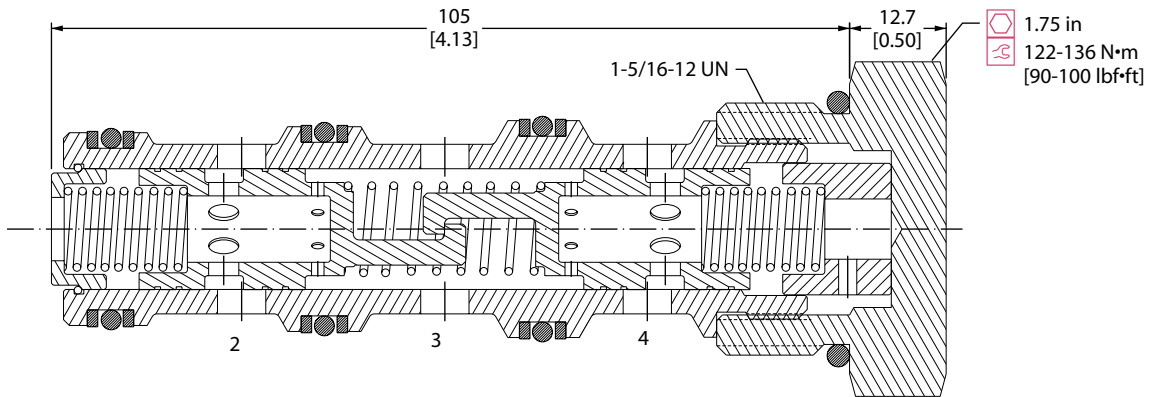


Specifications

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

DIMENSIONS

Cross-sectional view



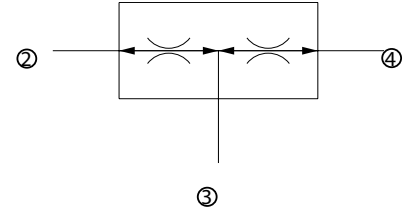
ORDERING INFORMATION

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

OPERATION

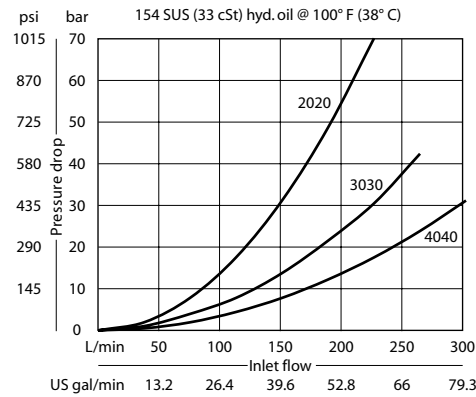
This valve is a fixed ratio, pressure compensated flow divider/combiner.

Schematic



SPECIFICATIONS

Theoretical performance

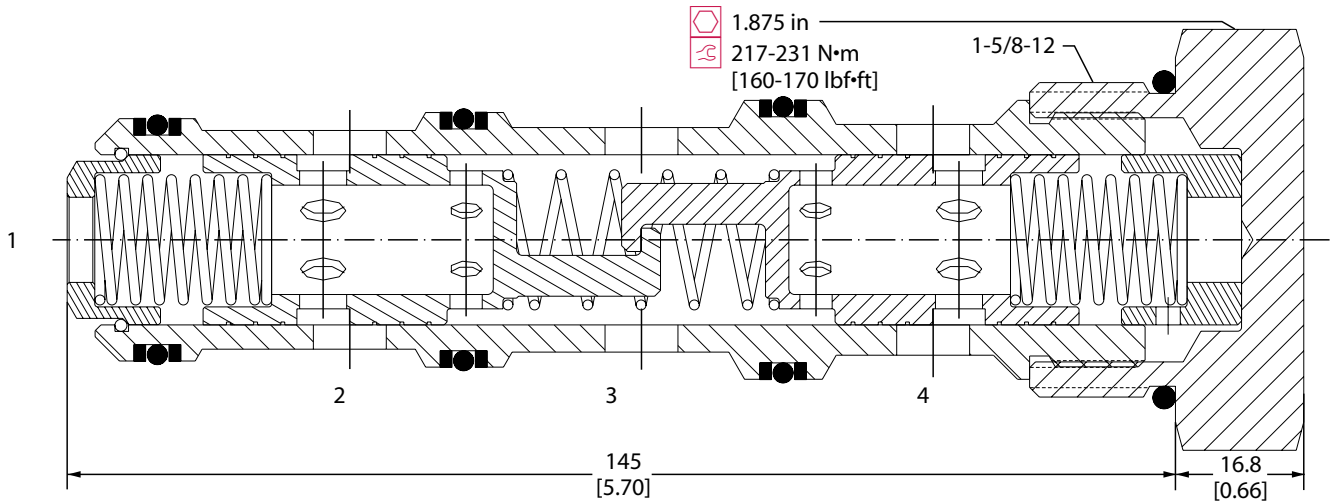


Specifications

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

DIMENSIONS

Cross-sectional view



ORDERING INFORMATION

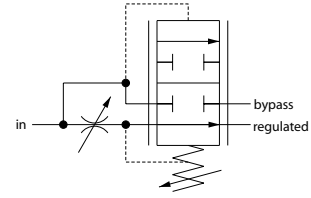
CP343-1-B-16S-454S

Housing and ports		Housing P/N	Flow settings	Flow ratio	Total flow
			Code	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]
			4530	3:2	284 L/min [75 gpm]
			4545	1:1	341 L/min [90 gpm]
Seals		Seal kit			
B = Buna-N		120181			
V = Viton		120182			

OPERATION

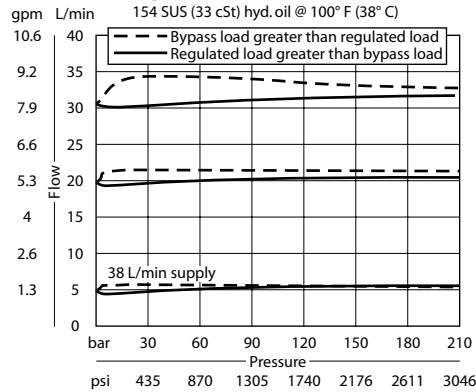
This valve is an adjustable, priority-type, pressure compensated flow control valve.

Schematic



SPECIFICATIONS

Theoretical performance



P102 682

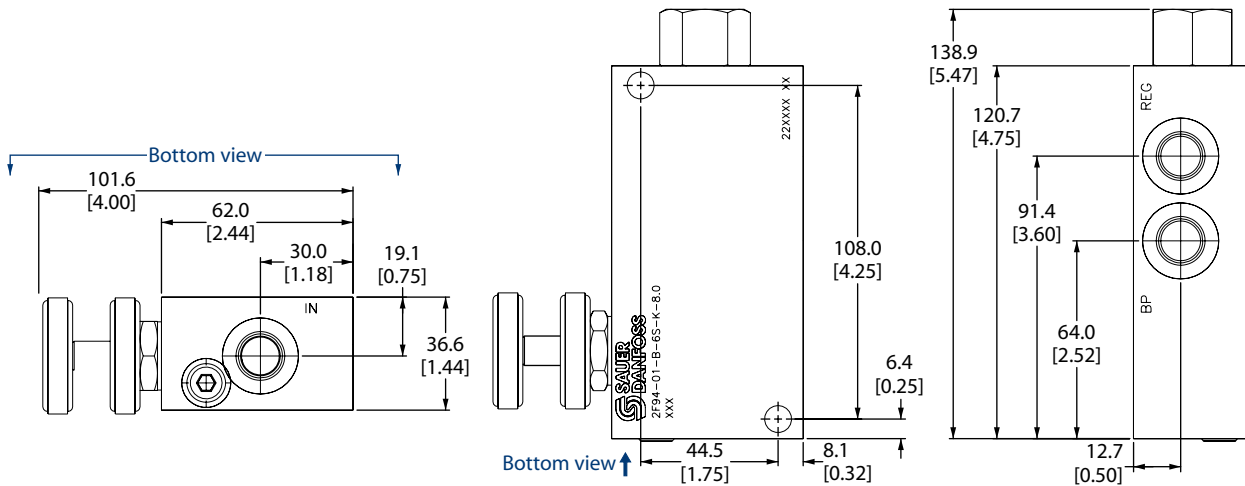
Specifications

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

Cross-sectional view

mm in



ORDERING INFORMATION

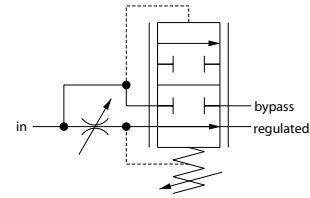
2F94-01-B-6S-E-8.0

- 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

OPERATION

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

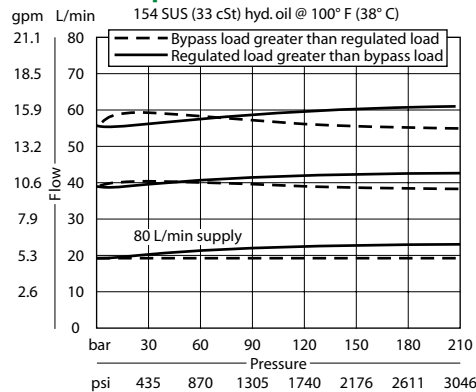
Schematic



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SPECIFICATIONS

Theoretical performance



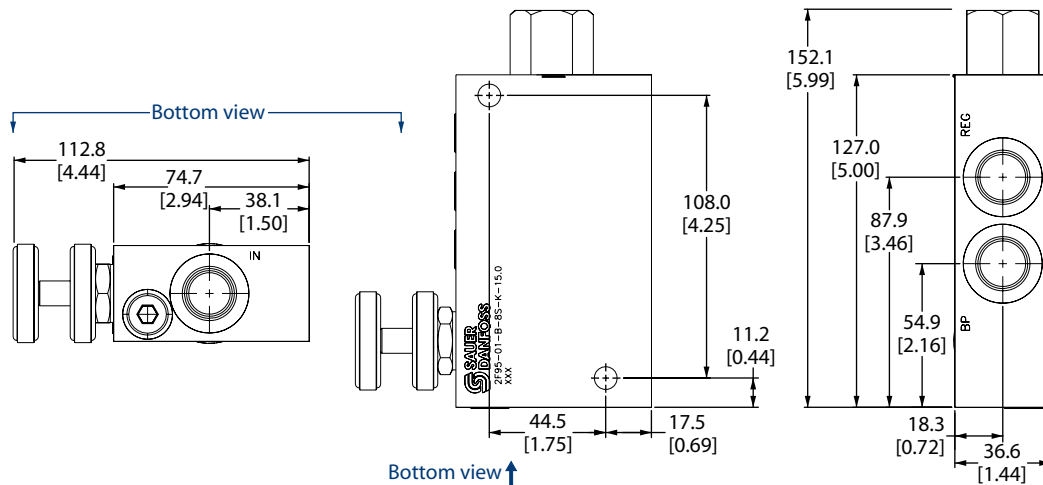
Specifications

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

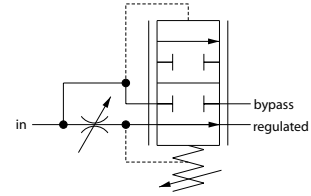
2F95-01-B-8S-E-15

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

OPERATION

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

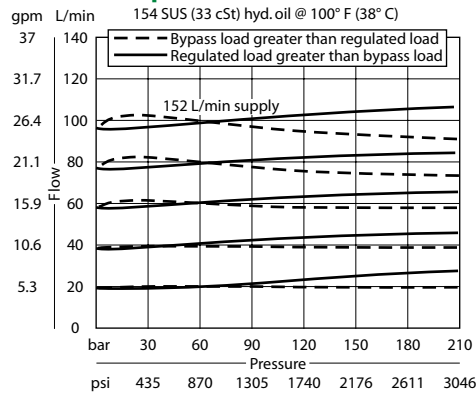
Schematic



P102 682

SPECIFICATIONS

Theoretical performance



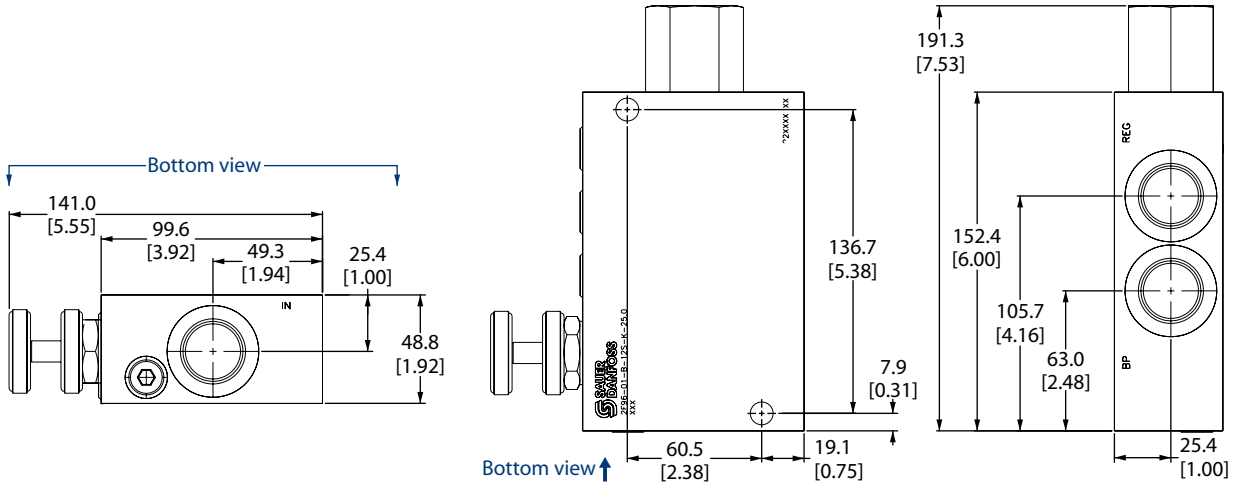
Specifications

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

Cross-sectional view

mm in



ORDERING INFORMATION

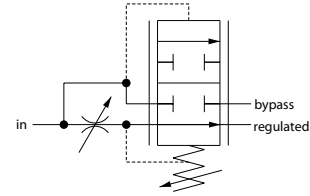
2F96-01-B-12S-E-25

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

OPERATION

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

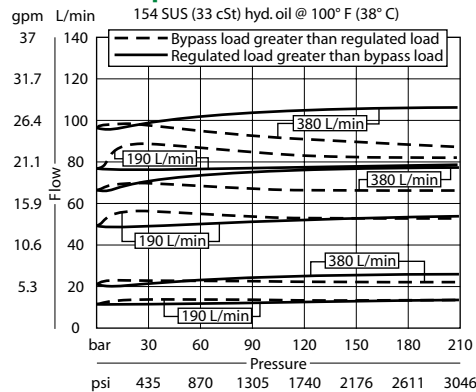
Schematic



P102 682

SPECIFICATIONS

Theoretical performance



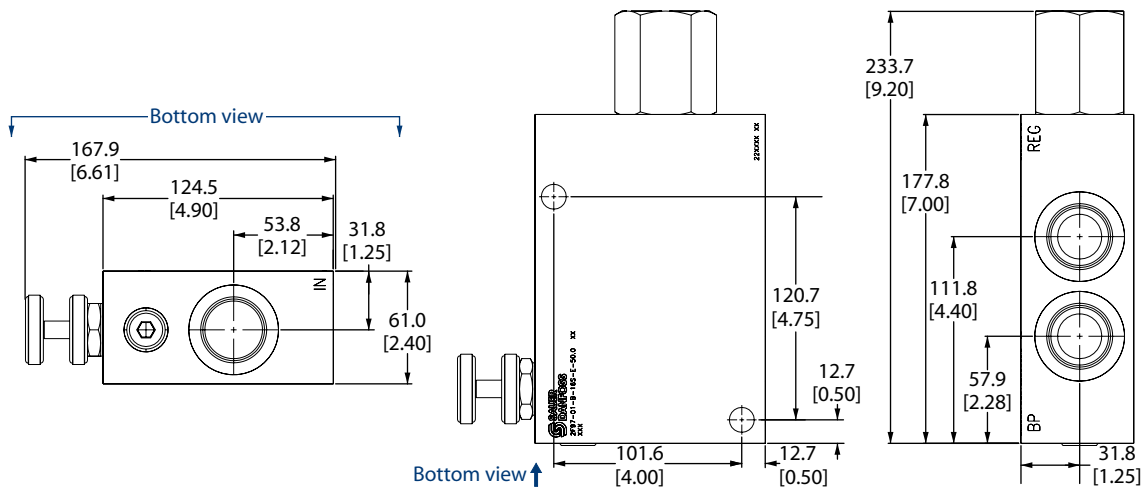
Specifications

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



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
- Adjustment range**
Code = 0-50 gpm
- Seal kits**
Consult Factory

