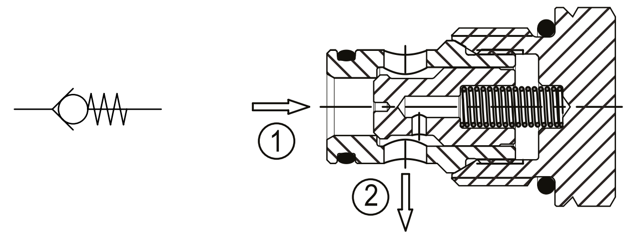
CV

Check Valves

Check Valves
Application Notes

Basic Operation

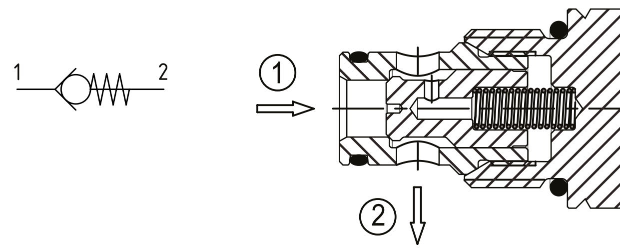
Check valves allow free flow in one direction and prevent flow in the other. The valve can be of poppet or ball design with various cracking pressures.



Standard Flow Path

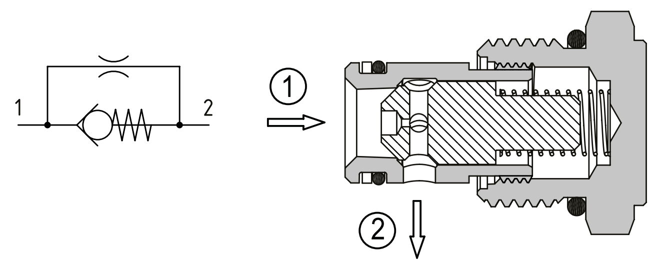
The standard flow path allows free flow from port 1 to port 2 and blocks flow from port 2 to port 1. They are spring biased closed until sufficient pressure is applied at port 1. As the pressure increases the valve will open allowing a flow to take place from port 1 to port 2.

These are more cost effective and the preferred choice when designing an HIC.



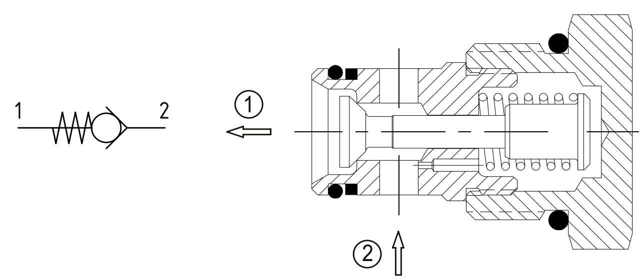
Check Valve with Bypass Orifice

There are other alternatives that include an orifice through the poppet allowing a controlled amount of leakage from port 2 to port 1



Reverse Flow Path

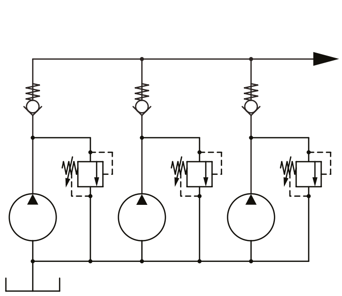
The reverse flow path design allows free flow from port 2 to port 1 and blocks flow from port 1 to port 2. The spring biases the valve closed by pulling the poppet against the seat. These valves provide flexibility to the HIC designer allowing the most compact solution for the customer.



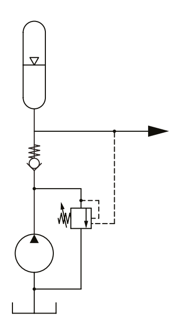
Typical Applications

Check valves are used in a variety of applications where oil is required to travel in one direction only. In the other direction the oil cannot pass, and the valve will hold pressure based on minimal leakage past the poppet.

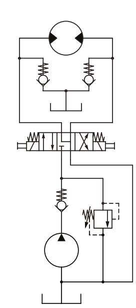
The various cracking pressures allow the valves to be used as back pressure devices or in anti-cavitation circuits where minimal cracking pressure is required.



▲ Multi pump circuits



▲ Accumulator circuits

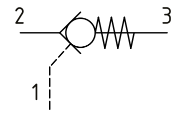


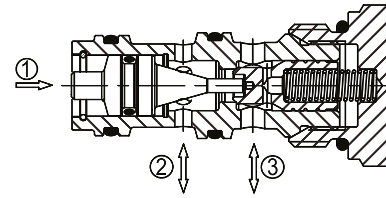
▲ Anti-Cavitation

Pilot Operated Check Valves
Application Notes

Basic Operation: Pilot to Open Check Valve

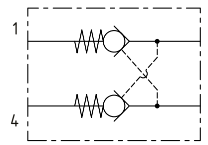
Pilot operated or pilot to open check valves can be opened by applying pressure to a pilot port acting on a larger area than the main seat of the valve. The ratio of the two areas is called the pilot ratio. These valves will hold a cylinder in position with minimal leakage.

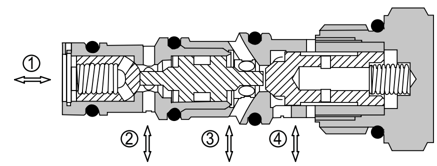




Dual Pilot Operated Check Valve

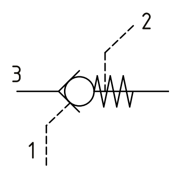
In many cylinder applications it is necessary to lock the actuator, preventing movement in both directions. This requires either two separate pilot operated check valves or a single cartridge as shown below. Thermal relief valves can also be necessary. These can be incorporated into a single cartridge dual valve ideal for direct mounting into cylinders.

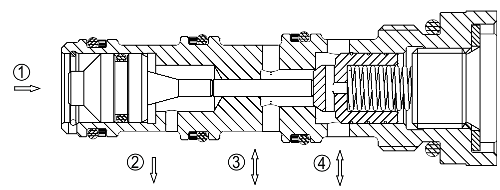




Vented Pilot Operated Check Valves

Vented pilot operated check valves have an extra port that is referenced to tank. This prevents back pressure from increasing the pilot pressure required to keep the valve open. These are often used when flow metering takes place downstream of the valve.

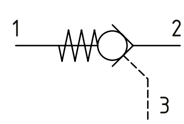


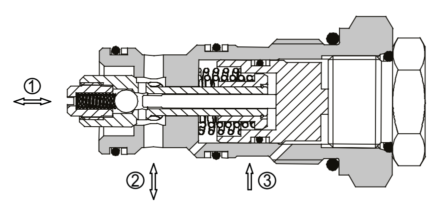


De-Compression Pilot Operated Check Valves

De-compression pilot operated check valves are used when there is a large amount of oil under pressure that must be released before the actuator is allowed to move. They also reduce the hydraulic bang caused by rapid decay of pressure in a system.

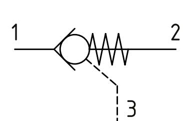
The valve benefits from a very high pilot ratio on the central portion of the valve [25:1], which allows the pressure held by the valve to fall in a controlled manner until the 3:1 pilot ratio can open the larger seat.

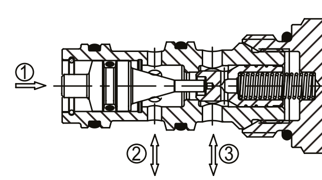




Basic Operation: Pilot to Close Check Valve

Pilot to close check valves allow free flow through the valve until pressure is applied to the pilot port. They can be used in regenerative circuits or as circuit selection devices. Generally, the pilot ratio will be around 2:1, allowing the valve to close off when the pilot pressure is half of the load pressure.



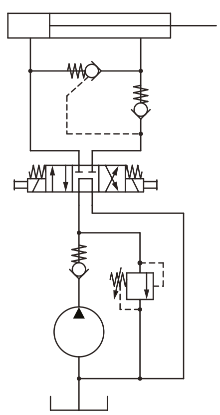


Check Valves
Application Notes

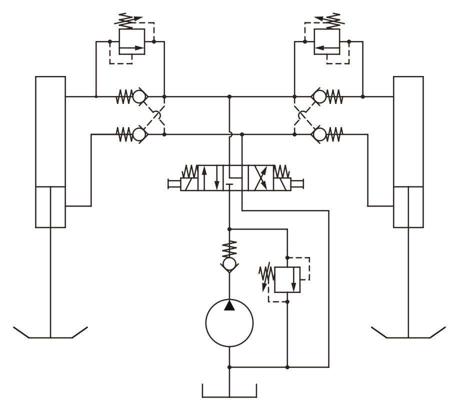
Application Recommendations

- Pilot operated check valves should not be used to control the lowering of a load without suitable orifices to make sure the pilot pressure is always sufficient to keep the valve wide open [see circuit below].
- A pilot operated check valve with a pilot ratio lower than the cylinder ratio should not be placed on the rod side of the cylinder.
- When using pilot to open check valves, an open center or motor spool directional valve is preferred, as locked in pressure may keep the valve open.
- Where the sealed pilot piston option is required, the cracking pressure of the check valve will typically be above 4.5 bar [65 psi].

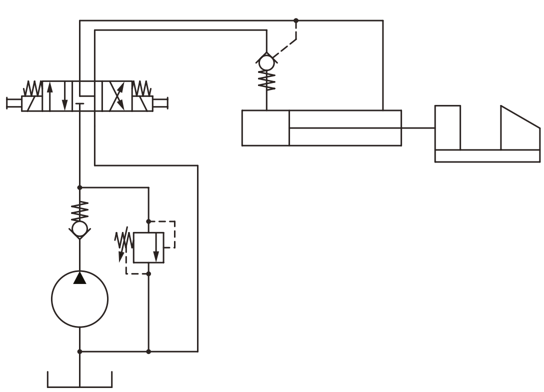
Typical Applications



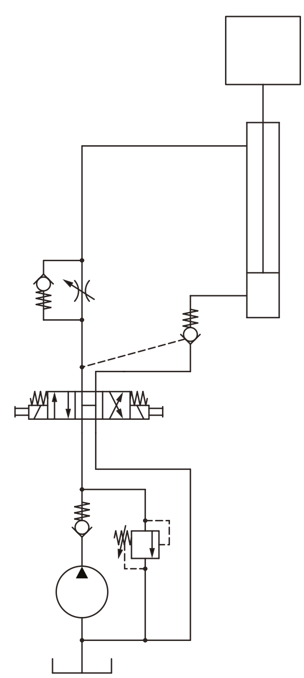
▲ Regenerative Circuit



▲ Stabilizer Circuit

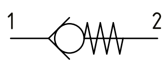


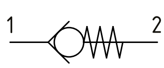
▲ Clamping Circuit

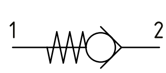


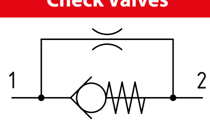
▲ Lowering Circuit

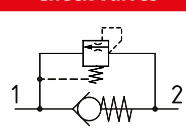
Check Valves
Quick Reference

Check Valves	Model No.	Cavity	Description	Flow*	Pressure	Page
	CV3-4	C-4-2	Check Valve, Standard Direction	7.6 l/min [2 US gpm]	350 bar [5000 psi]	7
	CV08-NP	SDC08-2	Check Valve, Standard Direction	38 l/min [10 US gpm]	350 bar [5000 psi]	8
	CV10-NP	SDC10-2	Check Valve, Standard Direction	80 l/min [21 US gpm]	350 bar [5000 psi]	9
	CV11-12	C-12-2 / C-12-2U	Check Valve, Standard Direction	114 l/min [30 US gpm]	350 bar [5000 psi]	10
	CV11-16	SDC16-2	Check Valve, Standard Direction	151 l/min [40 US gpm]	350 bar [5000 psi]	11
	3CA300	SDC20-2	Check Valve, Standard Direction	300 l/min [80 US gpm]	350 bar [5000 psi]	12
	CV2-20	SDC20-2	Check Valve, Standard Direction	227 l/min [60 US gpm]	210 bar [3000 psi]	13

Check Valves	Model No.	Cavity	Description	Flow*	Pressure	Page
	RS 06	N/A	Check Valve, In-line, Female Port	30 l/min [8 US gpm]	350 bar [5000 psi]	14
	RS 10	N/A	Check Valve, In-line, Female Port	60 l/min [16 US gpm]	350 bar [5000 psi]	15
	RS 13	N/A	Check Valve, In-line, Female Port	100 l/min [26 US gpm]	315 bar [4600 psi]	16
	RS 19	N/A	Check Valve, In-line, Female Port	140 l/min [37 US gpm]	280 bar [4000 psi]	17
	RS 25	N/A	Check Valve, In-line, Female Port	200 l/min [53 US gpm]	240 bar [3500 psi]	18
	FPR11/4	N/A	Check Valve, In-line, Female Port	220 l/min [58 US gpm]	250 bar [3600 psi]	19
	FPR11/2	N/A	Check Valve, In-line, Female Port	310 l/min [82 US gpm]	210 bar [3000 psi]	20

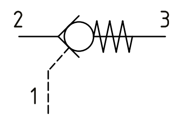
Check Valves	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP104-2	CP04-2	Check Valve, Reverse Direction	4.5 l/min [1.2 US gpm]	350 bar [5000 psi]	21
	CP108-2	SDC08-2	Check Valve, Reverse Direction	20 l/min [5 US gpm]	350 bar [5000 psi]	22
	CP100-2	SDC10-2	Check Valve, Reverse Direction	50 l/min [13 US gpm]	350 bar [5000 psi]	23
	CP101-2	CP12-2	Check Valve, Reverse Direction	76 l/min [20 US gpm]	350 bar [5000 psi]	24
	CP102-2	SDC16-2	Check Valve, Reverse Direction	150 l/min [40 US gpm]	350 bar [5000 psi]	25
	CP103-2	SDC20-2	Check Valve, Reverse Direction	265 l/min [70 US gpm]	350 bar [5000 psi]	26

Check Valves	Model No.	Cavity	Description	Flow*	Pressure	Page
	CV6-4	C-4-2	Check valve, Standard Direction with Bypass Orifice	7.6 l/min [2 US gpm]	350 bar [5000 psi]	27
	CV6-10	SDC10-2	Check valve, Standard Direction with Bypass Orifice	76 l/min [20 US gpm]	350 bar [5000 psi]	28

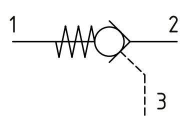
Check Valves	Model No.	Cavity	Description	Flow*	Pressure	Page
	RV4-10	SDC10-2	Check Valve, Standard Direction with Thermal Relief	45 l/min [12 US gpm]	350 bar [5000 psi]	29

*Flow ratings are for reference only. Refer to individual product page for performance information.

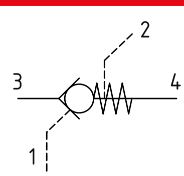
Check Valves
Quick Reference



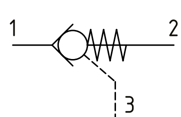
Pilot Operated Check Valves	Model No.	Cavity	Description	Flow*	Pressure	Page
	RPC 04	NCS04/3	Pilot Operated Check Valve, Port 1 Pilot to Open	21 l/min [5.5 US gpm]	350 bar [5000 psi]	30
	SPC2-8	SDC08-3	Pilot Operated Check Valve, Port 1 Pilot to Open	19 l/min [5 US gpm]	240 bar [3500psi]	31
	SPC2-10	SDC10-3	Pilot Operated Check Valve, Port 1 Pilot to Open	23 l/min [6 US gpm]	210 bar [3000 psi]	32
	RPC 06	NCS06/3	Pilot Operated Check Valve, Port 1 Pilot to Open	35 l/min [9 US gpm]	350 bar [5000 psi]	33
	RPC 12	NCS12/3	Pilot Operated Check Valve, Port 1 Pilot to Open	90 l/min [24 US gpm]	315 bar [4600 psi]	34



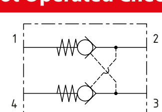
Pilot Operated Check Valves	Model No.	Cavity	Description	Flow*	Pressure	Page
	4CK30	A6610	Pilot Operated Check Valve, Port 3 Pilot to Open	30 l/min [8 US gpm]	350 bar [5000 psi]	35
	4SK30	A20090-T11A	Pilot Operated Check Valve, Port 3 Pilot to Open	30 l/min [8 US gpm]	350 bar [5000 psi]	36
	4CK90	A12336	Pilot Operated Check Valve, Port 3 Pilot to Open	90 l/min [24 US gpm]	350 bar [5000 psi]	37
	POC1-10	SDC10-3S	Pilot Operated Check Valve, Port 3 Pilot to Open	57 l/min [15 US gpm]	350 bar [5000 psi]	38
	4SK90	A20092-T2A	Pilot Operated Check Valve, Port 3 Pilot to Open	90 l/min [24 US gpm]	350 bar [5000 psi]	39
	4CKD90	A12336	Pilot Operated Check Valve, Port 3 Pilot to Open	90 l/min [24 US gpm]	420 bar [6000 psi]	40
	4CK120	A877	Pilot Operated Check Valve, Port 3 Pilot to Open	120 l/min [32 US gpm]	350 bar [5000 psi]	41
	4SK140	A20094-T17A	Pilot Operated Check Valve, Port 3 Pilot to Open	140 l/min [37 US gpm]	350 bar [5000 psi]	42
	4CK300	A6935	Pilot Operated Check Valve, Port 3 Pilot to Open	300 l/min [80 US gpm]	350 bar [5000 psi]	43



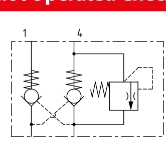
Pilot Operated Check Valves	Model No.	Cavity	Description	Flow*	Pressure	Page
	RPV 06	NCS06/4	Pilot Operated Check Valve, Port 1 Pilot to open with Drain	30 l/min [8 US gpm]	315 bar [4600 psi]	44



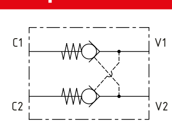
Pilot Operated Check Valves	Model No.	Cavity	Description	Flow*	Pressure	Page
	5CK30	A6610	Pilot Operated Check Valve, Port 3 Pilot to Close	30 l/min [8 US gpm]	350 bar [5000 psi]	45
	5CK120	A877	Pilot Operated Check Valve, Port 3 Pilot to Close	120 l/min [32 US gpm]	350 bar [5000 psi]	46
	5CK300	A6935	Pilot Operated Check Valve, Port 3 Pilot to Close	250 l/min [65 US gpm]	350 bar [5000 psi]	47



Dual Pilot Operated Check Valves	Model No.	Cavity	Description	Flow*	Pressure	Page
	DPC2-8	SDC08-4	Dual Pilot Operated Check Valve	19 l/min [5 US gpm]	240 bar [3500 psi]	48



Dual Pilot Operated Check Valves	Model No.	Cavity	Description	Flow*	Pressure	Page
	4CKKT50	A12744	Dual Pilot Operated Check Valve, with Thermal Relief	25 l/min [7 US gpm]	300 bar [4300 psi]	49



Dual Pilot Operated Check Valves	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP410-1	Catalog HIC	Dual Pilot Operated Check Valves, Line Mounted	80 l/min [21 US gpm]	210 bar [3000 psi]	50

*Flow ratings are for reference only. Refer to individual product page for performance information.

Check Valves
CV3-4

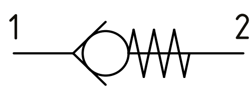
Check Valve, Standard Direction

350 bar [5000 psi] • 7.6 l/min [2 US gpm]

DESCRIPTION AND OPERATION

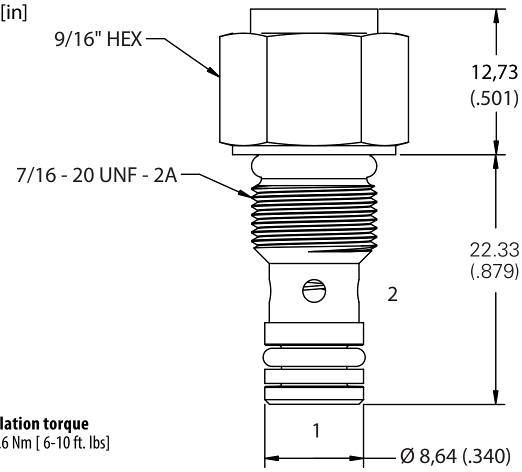
This is a check valve where free flow takes place from port 1 to 2 and is blocked from port 2 to 1.

SCHEMATIC



DIMENSIONS

mm [in]

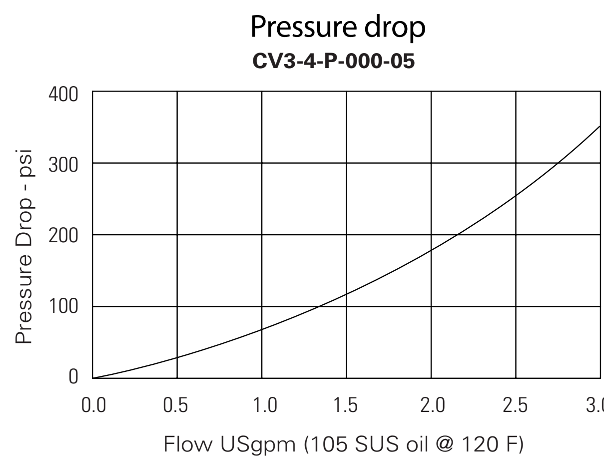


Installation torque
8.1-13.6 Nm [6-10 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow at 7 bar [100psi]	**7.6 l/min [2 US gpm]**
Leakage	5 drops/min maximum @ 210 bar [3000 psi]
Weight	0.04 kg [0.09 lb]
Cavity	C-4-2

PERFORMANCE CURVES



MODEL CODE

CV3 - 4 - V - P - 000 - 05

Seal Option

Code	Seal kit
Omit-Buna-N	9900174-000
V-Viton	9900175-000

Style

P-Poppet type

Housing

Code	Ports
000	No Housing

Crack Pressure

Code	Bar	Psi
05	0.34	[5]
60	4.1	[60]

Check Valves

CV08-NP

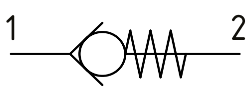
Check Valve, Standard Direction

350 bar [5000 psi] • 38 l/min [10 US gpm]

DESCRIPTION AND OPERATION

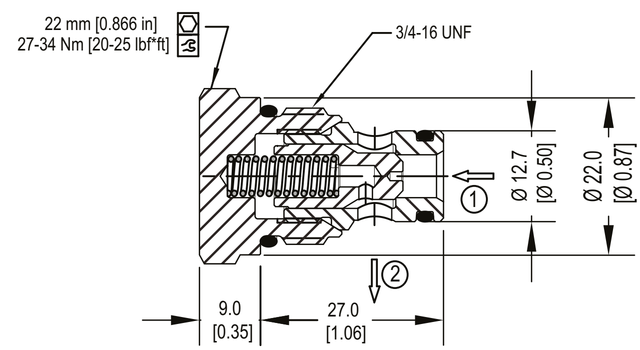
This is a check valve where free flow takes place from port 1 to 2 and is blocked from port 2 to 1.

SCHEMATIC



DIMENSIONS

mm [in]

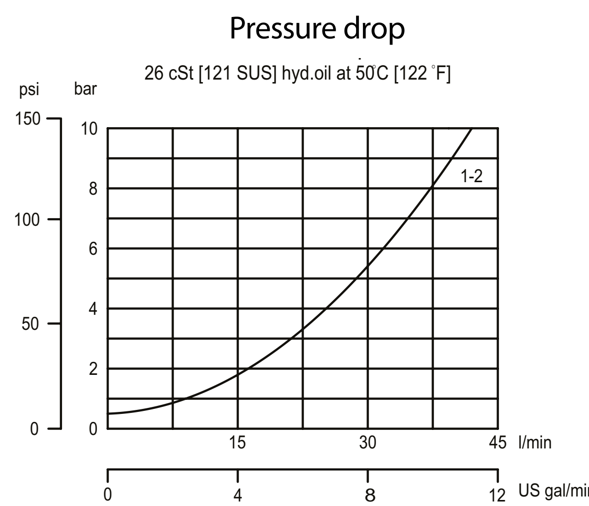


PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow at 7 bar [100psi]	**38 l/min [10 US gpm]**
Leakage	6 drops/min @ Rated pressure
Weight	0.05 kg [0.11 lb]
Cavity	SDC08-2

*Rated pressure based on NFPA fatigue test standard [at 1 million cycles]

PERFORMANCE CURVES



MODEL CODE

CV08 - NP - 0.3 - B - 00

Crack Pressure

Code	Bar	Psi
0.3	0.3	[5]
1	1.0	[15]
2	2.0	[30]
5	5.0	[73]
7	7.0	[100]

Seal Option

Code	Seal kit
B-Buna-N	120221
V-Viton	120222

Housing

Code	Ports & Material	Housing Model Code
00	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

* Aluminum bodies are to be used for pressures less than 210 bar [3000 psi].
* Additional housings available

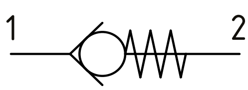
Check Valves
CV10-NP

Check Valve, Standard Direction
350 bar [5000 psi] • 80 l/min [21 US gpm]

DESCRIPTION AND OPERATION

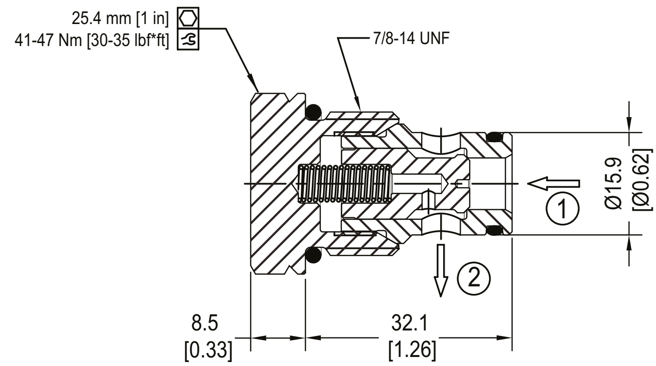
This is a check valve where free flow takes place from port 1 to 2 and is blocked from port 2 to 1.

SCHEMATIC



DIMENSIONS

mm [in]

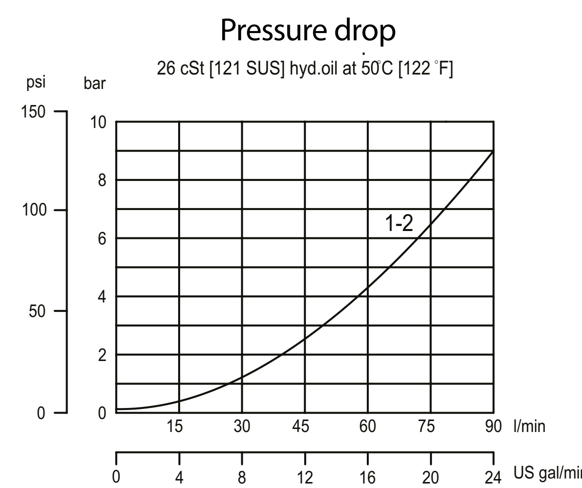


PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow at 7 bar [100psi]	**80 l/min [21 US gpm]**
Leakage	6 drops/min @ Rated pressure
Weight	0.08 kg [0.18 lb]
Cavity	SDC10-2

*Rated pressure based on NFPA fatigue test standard [at 1 million cycles]

PERFORMANCE CURVES



MODEL CODE

CV10 - NP - 0.3 - B - 00

Crack Pressure

Code	Bar	Psi
0.3	0.3	[5]
1	1.0	[15]
2	2.0	[30]
5	5.0	[73]
7	7.0	[100]
10	10	[150]
15	15	[217]

Seal Option

Code	Seal kit
B-Buna-N	120015
V-Viton	120016

Housing

Code	Ports & Material	Housing Model Code
00	No Housing	No Housing
6S	AL, #6 SAE	SDC10-2-6S
8S	AL, #8 SAE	SDC10-2-8S
3B	AL, 3/8 BSP	SDC10-2-3B
4B	AL, 1/2 BSP	SDC10-2-4B

* Aluminum bodies are to be used for pressures less than 210 bar [3000 psi].
* Additional housings available

Check Valves
CV11-12

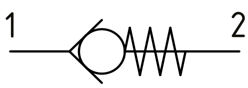
Check Valve, Standard Direction

350 bar [5000 psi] • 114 l/min [30 US gpm]

DESCRIPTION AND OPERATION

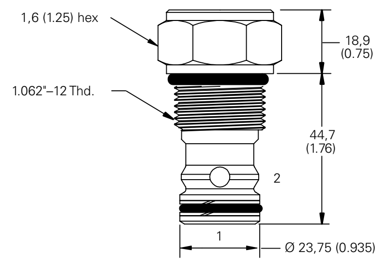
This is a check valve where free flow takes place from port 1 to 2 and is blocked from port 2 to 1.

SCHEMATIC



DIMENSIONS

mm [in]

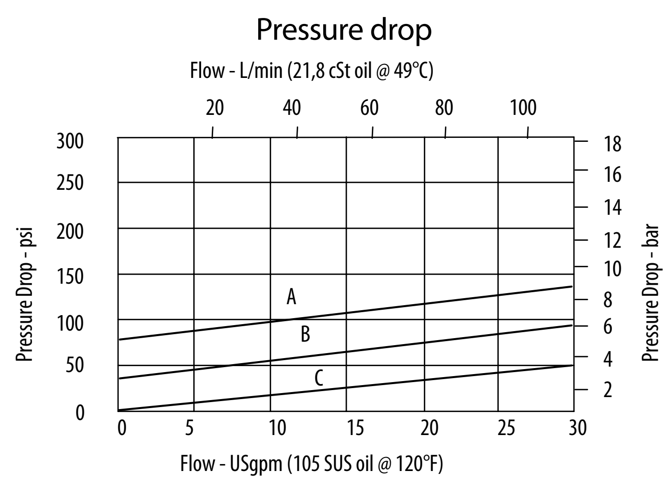


Installation torque
A-81-95 Nm [60-70 ft. lbs]
S-102-115 Nm [75-85 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**114 l/min [30 US gpm]**
Leakage	5 drops/min. maximum @ 350 bar [5000 psi]
Weight	0,24 kg [0.54 lb]
Cavity	C-12-2 or C-12-2U

PERFORMANCE CURVES



A-CV11-12-P-0-80 • **B**-CV11-12-P-0-20 • **C**-CV11-12-P-0-2.5

MODEL CODE

CV11 - 12 - V - P - A - 0 - U - 2.5

Seal Option

Code	Seal Kit
Omit-Buna-N	02-165889
V-Viton	02-165888

Style

P-Poppet type

Housing Material

Omit-No Housing
A-Aluminum
S-Steel

Housing

Code	Ports	Housing Model Code			
		C-12-2U Aluminum standard duty	**C-12-2 Aluminum heavy duty**	**C-12-2U Steel heavy duty**	**C-12-2 Steel heavy duty**
0	No Housing				
10T	#10 SAE	02-160641	02-160640	02-169817	02-169744
12T	#12 SAE	02-160645	02-160644	02-168790	02-169782
4G	1/2" BSP	02-161116	02-161118	02-172512	02-172062
6G	3/4" BSP	02-161115	02-161117	02-162922	02-169665

* Aluminum bodies are to be used for pressures less than 210 bar [3000 psi].
* Additional housings available

Crack Pressure

Code	Bar	Psi
2.5	0.17	[2.5]
5.0	0.35	[5]
10	0.69	[10]
20	1.38	[20]
40	2.75	[40]
80	5.50	[80]
160	11.0	[160]

Cavity

Omit-Cavity without undercut
U-Cavity with undercut

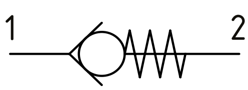
Check Valves
CV11-16

Check Valve, Standard Direction
350 bar [5000 psi] • 151 l/min [40 US gpm]

DESCRIPTION AND OPERATION

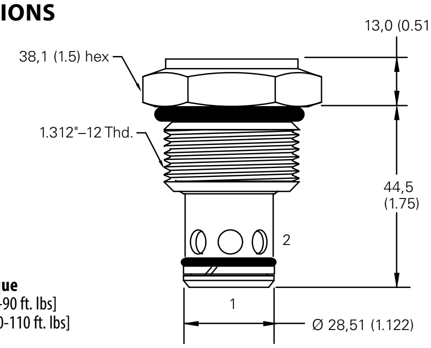
This is a check valve where free flow takes place from port 1 to 2 and is blocked from port 2 to 1.

SCHEMATIC



DIMENSIONS

mm [in]



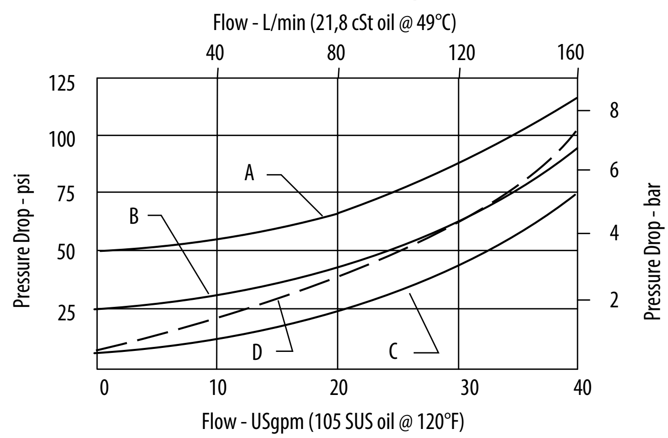
Installation torque
A-108-122 Nm [80-90 ft. lbs]
S-136-149 Nm [100-110 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**151 l/min [40 US gpm]**
Leakage	5 drops/min. maximum @ 210 bar [3000 psi]
Weight	0.26 kg [0.58 lb]
Cavity	SDC16-2

PERFORMANCE CURVES

Pressure drop



A-CV11-16-P-0-50 • **B**-CV11-16-P-0-20 • **C**-CV11-16-P-0-15 • **D**-CV11-16-P-0-5

MODEL CODE

CV11 - 16 - V - P - 0 - 5 - A

Seal Option

Code	Seal Kit
Omit-Buna-N	565810
V-Viton	889609

Style

P-Poppet type

Housing

Code	Ports	Housing Model Code: Aluminum standard duty	Aluminum heavy duty	Steel heavy duty
0	No Housing			
6B	3/4" BSP	02-175463		
10T	#10 SAE			02-175104
12T	#12 SAE	566149		02-175105
4G	1/2" BSP		876716	02-175106
6G	3/4" BSP		876718	02-175107
10H	#10 SAE		876717	
12H	#12 SAE		566113	

* Aluminum bodies are to be used for pressures less than 210 bar [3000 psi].
* Additional housings available

Housing Material

Omit - No housing
A - Aluminum
S - Steel

Crack Pressure

Code	Bar	Psi
5	0.34	[5]
20	1.34	[20]
30	2.07	[30]
40	2,67	[40]
50	3.45	[50]
100	6.90	[100]

Danfoss

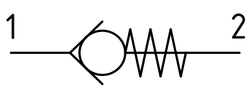
Check Valves
3CA300

Check Valve, Standard Direction
350 bar [5000 psi] • 300 l/min [80 US gpm]

DESCRIPTION AND OPERATION

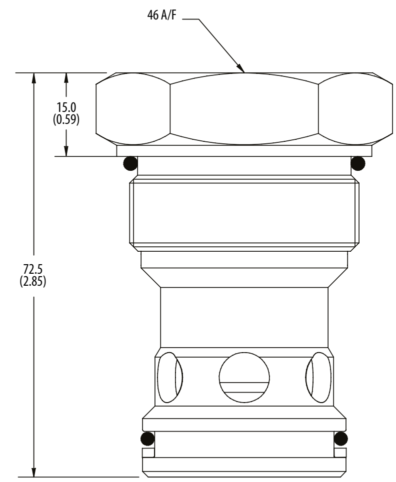
This is a check valve where free flow takes place from port 1 to 2 and is blocked from port 2 to 1.

SCHEMATIC



DIMENSIONS

mm [in]



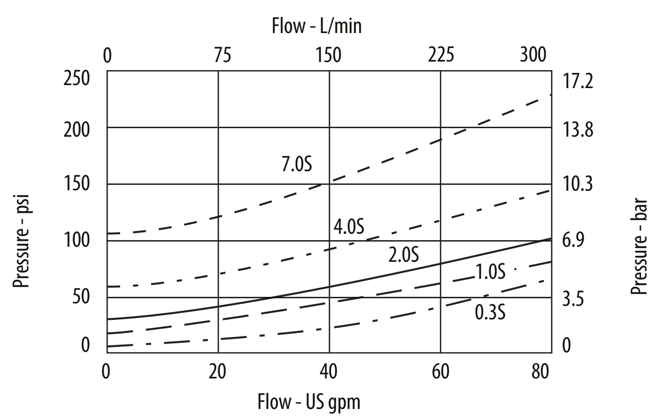
Installation torque
150 Nm [110 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**300 l/min [80 US gpm]**
Leakage	0.2 ml/min nominal
Weight	0.48 kg [1.06 lb]
Cavity	SDC20-2

PERFORMANCE CURVES

Pressure drop



MODEL CODE

3CA355 - 10W - 1.0 - S - 377

Basic Code
3CA300-No Housing
3CA55-Cartridge and Housing

Housing

Code	Ports	Housing Model Code	
		Aluminum	Steel
Omit	No Housing		
10W	1 1/4" BSP	C24005	C24006
20T	1 1/4" SAE	C24011	C24012

* Aluminum bodies are to be used for pressures less than 210 bar [3000 psi].
* Additional housings available

Housing Material
Omit-Aluminum/No housing
377-Steel

Seal Option

Code	Seal Kit
S-Buna-N	SK1341
SV-Viton	SK1341V

Crack Pressure

Code	Bar	Psi
0.3	0.3	[4.4]
1.0	1.0	[14.5]
2.0	2.0	[29]
4.0	4,0	[58]
7.0	7.0	[100]

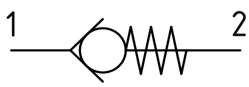
Check Valves
CV2-20

Check Valve, Standard Direction
210 bar [3000 psi] • 227 l/min [60 US gpm]

DESCRIPTION AND OPERATION

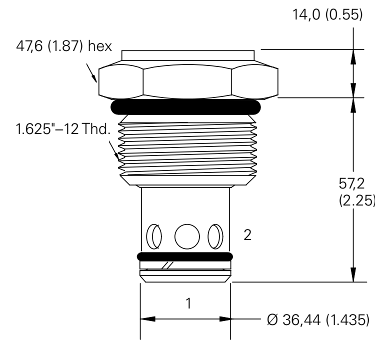
This is a check valve where free flow takes place from port 1 to 2 and is blocked from port 2 to 1.

SCHEMATIC



DIMENSIONS

mm [in]



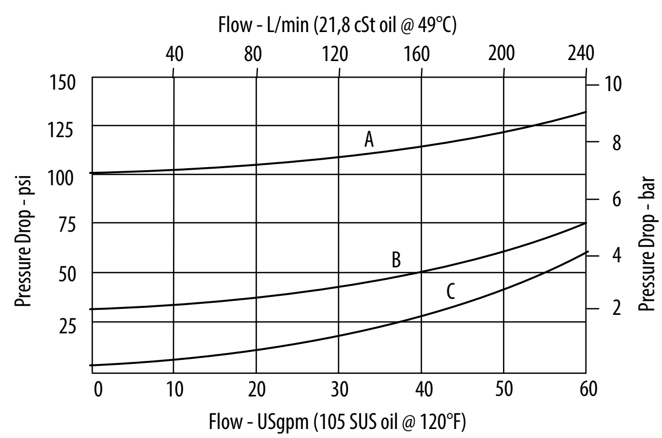
Installation torque
128-155 Nm [95-115 ft. lbs]

PERFORMANCE DATA

Rated pressure	**210 bar [3000 psi]**
Rated flow	**227 l/min [60 US gpm]**
Leakage	5 drops/min. maximum @ 210 bar [3000 psi]
Weight	0.49 kg [1.09 lb]
Cavity	SDC20-2

PERFORMANCE CURVES

Pressure drop



A-CV2-20-P-0-100 • **B**-CV2-20-P-0-30 • **C**-CV2-20-P-0-5

MODEL CODE

CV2 - 20 - V - P - 0 - 5

Seal Option

Code	Seal Kit
Omit-Buna-N	889615
V-Viton	889619

Style

P-Poppet type

Crack Pressure

Code	Bar	Psi
5	0.34	[5]
15	1.03	[15]
30	2.07	[30]
60	4.14	[60]
100	6.90	[100]

Housing

Code	Ports	Housing Model Code: Aluminum standard duty	Housing Model Code: Aluminum heavy duty
0	No Housing		
8B	1" BSP	02-175464	-
16T	#16 SAE	566409	-
6G	3/4" BSP	-	876732
8G	1" BSP	-	876734
12H	#12 SAE	-	876733
16H	#16 SAE	-	876735

* Aluminum bodies are to be used for pressures less than 210 bar [3000 psi].
* Additional housings available

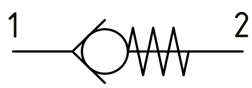
Check Valves
RS 06

Check Valve, In-line, Female Port
350 bar [5000 psi] • 30 l/min [8 US gpm]

DESCRIPTION AND OPERATION

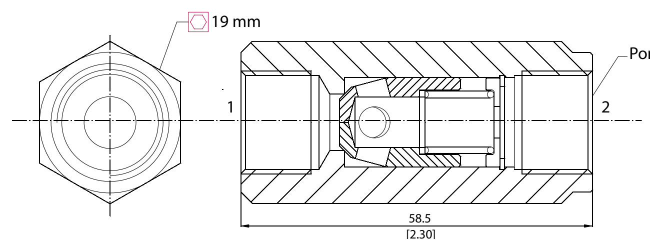
This is an in-line check valve where free flow takes place from port 1 to 2 and is blocked from port 2

SCHEMATIC



DIMENSIONS

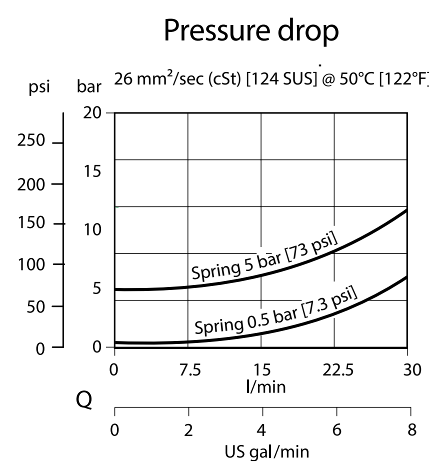
mm [in]



PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**30 l/min [8 US gpm]**
Weight	0.08 kg [0.18 lb]

PERFORMANCE CURVES



MODEL CODE

RS06 - 0.5 - G

Crack Pressure

Code	Bar	Psi
0.5	0.5	[7.3]
5	5	[73]

Ports

A-#6 SAE
G-1/4 BSP

Check Valves

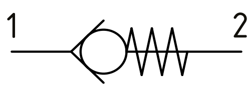
RS 10

Check Valve, In-line, Female Port
350 bar [5000 psi] • 60 l/min [16 US gpm]

DESCRIPTION AND OPERATION

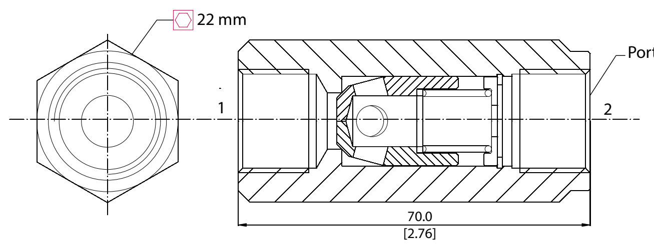
This is an in-line check valve where free flow takes place from port 1 to 2 and is blocked from port 2 to 1.

SCHEMATIC



DIMENSIONS

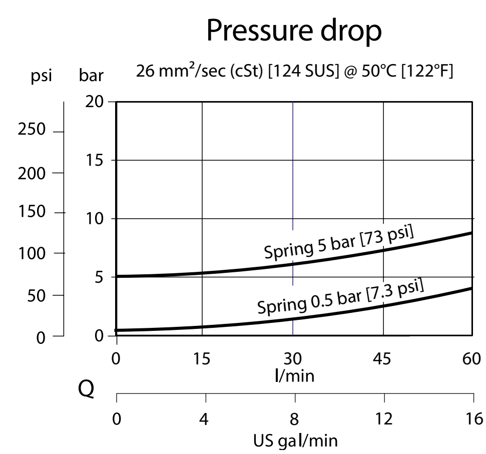
mm [in]



PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow at 7 bar [100 psi]	**60 l/min [16 US gpm]**
Weight	0.13 kg [0.29 lb]

PERFORMANCE CURVES



MODEL CODE

RS10 - 5 - G

Crack Pressure

Code	Bar	Psi
0.5	0.5	[7.3]
5	5	[73]

Ports

G-3/8 BSP

Check Valves

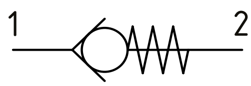
RS 13

Check Valve, In-line, Female Port
315 bar [4600 psi] • 100 l/min [26 US gpm]

DESCRIPTION AND OPERATION

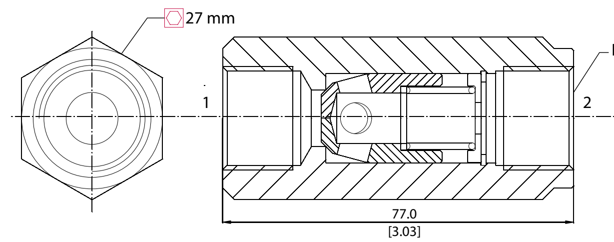
This is an in-line check valve where free flow takes place from port 1 to 2 and is blocked from port 2 to 1.

SCHEMATIC



DIMENSIONS

mm [in]

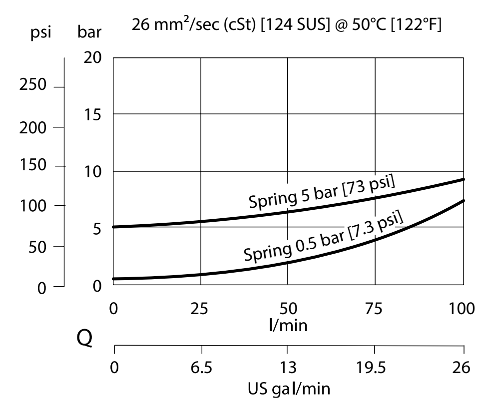


PERFORMANCE DATA

Rated pressure	**315 bar [4600 psi]**
Rated flow at 7 bar [100 psi]	**100 l/min [26 US gpm]**
Weight	0.26 kg [0.46 lb]

PERFORMANCE CURVES

Pressure drop



MODEL CODE

RS13 - 0.5 - G

Crack Pressure

Code	Bar	Psi
0.5	0.5	[7.3]
5	5	[73]

Ports

G-1/2 BSP

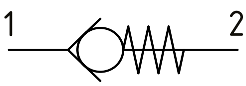
Check Valves
RS 19

Check Valve, In-line, Female Port
280 bar [4000 psi] • 140 l/min [37 US gpm]

DESCRIPTION AND OPERATION

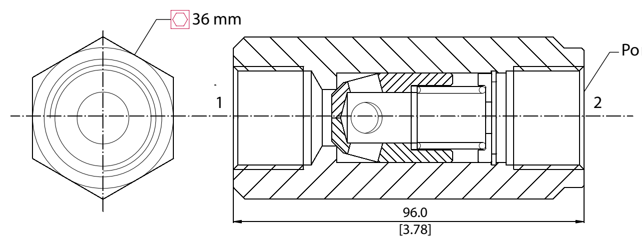
This is an in-line check valve where free flow takes place from port 1 to 2 and is blocked from port 2 to 1.

SCHEMATIC



DIMENSIONS

mm [in]

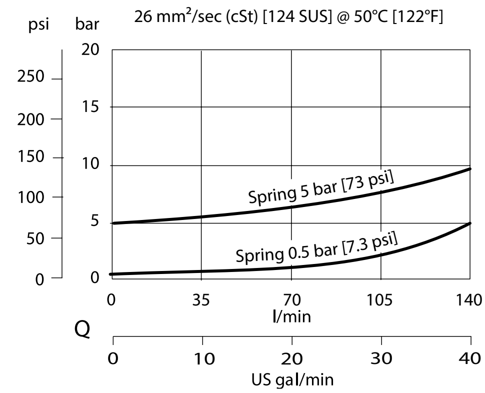


PERFORMANCE DATA

Rated pressure	**280 bar [4000 psi]**
Rated flow at 7 bar [100 psi]	**140 l/min [37 US gpm]**
Weight	0.43 kg [0.95 lb]

PERFORMANCE CURVES

Pressure drop



MODEL CODE

RS19 - 0.5 - G

Crack Pressure

Code	Bar	Psi
0.5	0.5	[7.3]
5	5	[73]

Ports

A-#12 SAE
G-3/4 BSP

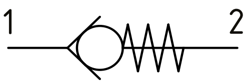
Check Valves
RS 25

Check Valve, In-line, Female Port
240 bar [3500 psi] • 200 l/min [53 US gpm]

DESCRIPTION AND OPERATION

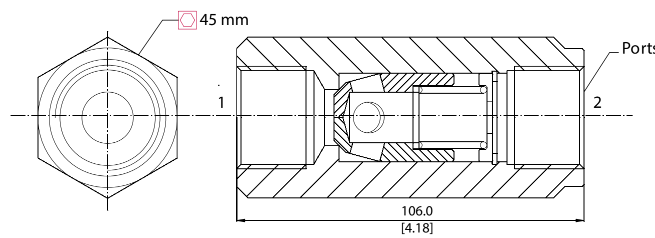
This is an in-line check valve where free flow takes place from port 1 to 2 and is blocked from port 2 to 1.

SCHEMATIC



DIMENSIONS

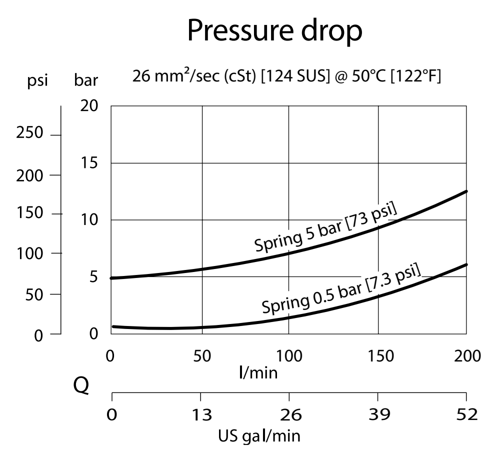
mm [in]



PERFORMANCE DATA

Rated pressure	**240 bar [3500 psi]**
Rated flow at 7 bar [100 psi]	**200 l/min [53 US gpm]**
Weight	0.88 kg [1.94 lb]

PERFORMANCE CURVES



MODEL CODE

RS25 - 0.5 - G

Crack Pressure

Code	Bar	Psi
0.5	0.5	[7.3]
5	5	[73]

Ports

A-#16 SAE
G-1 BSP

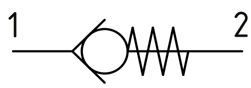
Check Valves
FPR11/4

Check Valve, In-line, Female Port
250 bar [3600psi] • 220 l/min [58 US gpm]

DESCRIPTION AND OPERATION

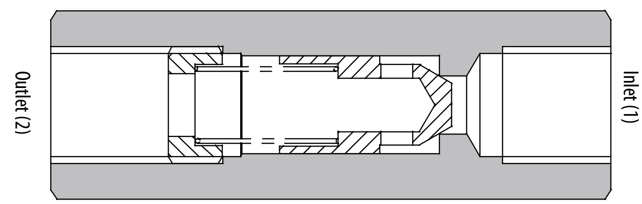
This is an in-line check valve where free flow takes place from port 1 to 2 and is blocked from port 2 to 1.

SCHEMATIC



DIMENSIONS

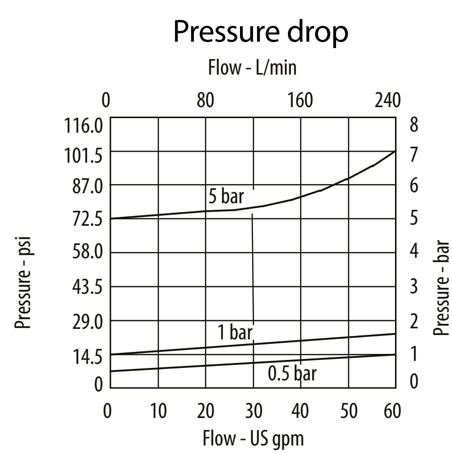
mm [in]



PERFORMANCE DATA

Rated pressure	**250 bar [3600psi]**
Rated flow	**220 l/min [58 US gpm]**
Weight	1.75 kg [3.85 lb]

PERFORMANCE CURVES



MODEL CODE

FPR11/4 - 0.5 BAR

Crack Pressure

Code	Bar
0.5	0.5
1.0	1.0
2.5	2.5
5.0	5.0
10.0	10.0

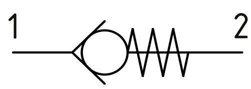
Check Valves
FPR11/2

Check Valve, In-line, Female Port
210 bar [3000psi] • 310 l/min [82 US gpm]

DESCRIPTION AND OPERATION

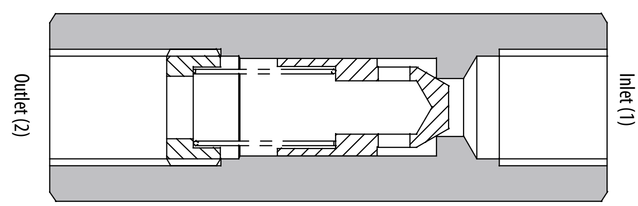
This is an in-line check valve where free flow takes place from port 1 to 2 and is blocked from port 2 to 1.

SCHEMATIC



DIMENSIONS

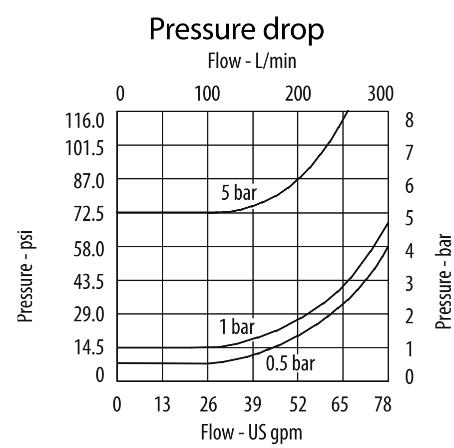
mm [in]



PERFORMANCE DATA

Rated pressure	**210 bar [3000psi]**
Rated flow	**310 l/min [82 US gpm]**
Weight	2.10 kg [4.63 lb]

PERFORMANCE CURVES



MODEL CODE

FPR11/2 - 0.5 BAR

Crack Pressure

Code	Bar
0.5	0.5
1.0	1.0
2.5	2.5
5.0	5.0
10.0	10.0

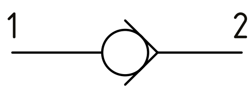
Check Valves
CP104-2

Check Valve, Reverse Direction
350 bar [5000 psi] • 4.5 l/min [1.2 US gpm]

DESCRIPTION AND OPERATION

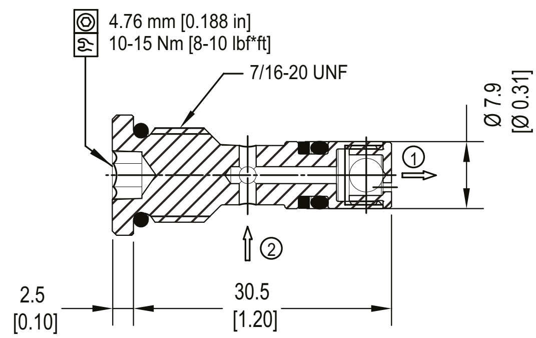
This is a check valve where free flow takes place from port 2 to 1 and is blocked from port 1 to 2.

SCHEMATIC



DIMENSIONS

mm [in]

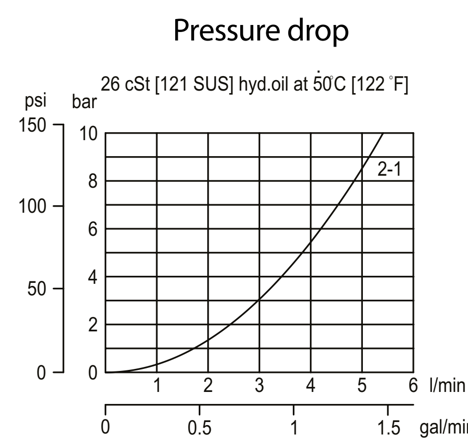


PERFORMANCE DATA

Rated pressure*	**350 bar [5000 psi]**
Rated flow at 7 bar [100 psi]	**4.5 l/min [1.2 US gpm]**
Leakage	6 drops/min @ rated pressure
Weight	0.01 kg [0.022 lb]
Cavity	CP04-2

*Rated pressure based on NFPA fatigue test standard [at 1 million cycles]

PERFORMANCE CURVES



MODEL CODE

CP104 - 2 - B - 2B

Seal Option

Code	Seal kit
B-Buna-N	120077
V-Viton	11019554

Housing

Code	Ports & Material	Housing Model Code
0	No Housing	
2B	Al, 1/4 BSP	CP04-2-2B
4S	Al, #4 SAE	CP04-2-4S

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

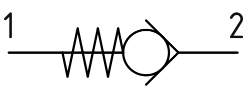
Check Valves
CP108-2

Check Valve, Reverse Direction
350 bar [5000 psi] • 20 l/min [5 US gpm]

DESCRIPTION AND OPERATION

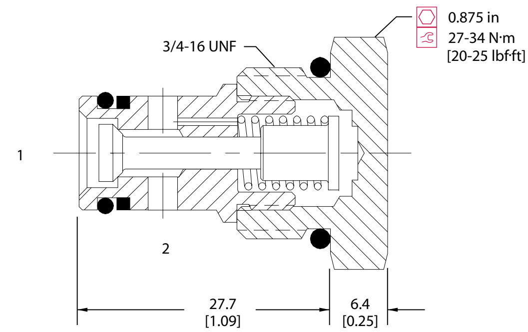
This is a check valve where free flow takes place from port 2 to 1 and is blocked from port 1 to 2.

SCHEMATIC



DIMENSIONS

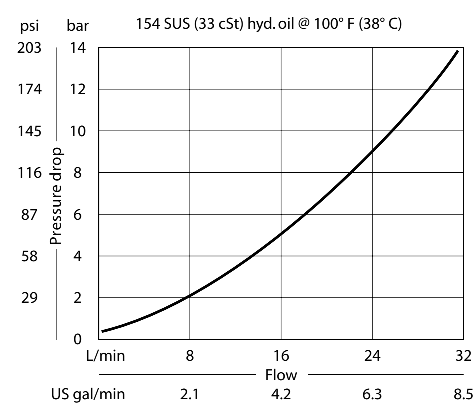
mm [in]



PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow at 7 bar [100 psi]	**20 l/min [5 US gpm]**
Leakage	6 drops/min @ 210 bar [3000 psi]
Weight	0.05 kg [0.11 lb]
Cavity	SDC08-2

PERFORMANCE CURVES



MODEL CODE

CP108 - 2 - B - 6S - 005

Crack Pressure

Code	Bar	Psi
005	0.34	[5]
015	1.0	[15]
030	2.1	[30]
050	3.4	[50]
065	4.5	[65]
100	6.9	[100]

Housing

Code	Ports & Material	Housing Model Code
0	No Housing	
DG2B	Al, 1/4 BSP	SDC08-2-DG2B
DG3B	Al, 3/8 BSP	SDC08-2-DG3B
4S	Al,#4 SAE	CP08-2-4S
6S	Al, #6 SAE	CP08-2-6S

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Seal Option

Code	Seal kit
B-Buna-N	120221
V-Viton	120222

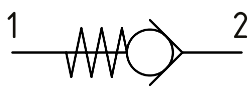
Check Valves
CP100-2

Check Valve, Reverse Direction
350 bar [5000 psi] • 50 l/min [13 US gpm]

DESCRIPTION AND OPERATION

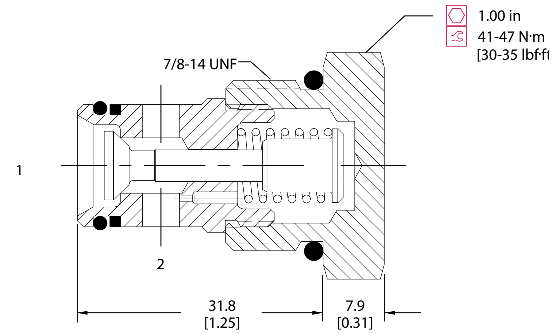
This is a check valve where free flow takes place from port 2 to 1 and is blocked from port 1 to 2.

SCHEMATIC



DIMENSIONS

mm [in]

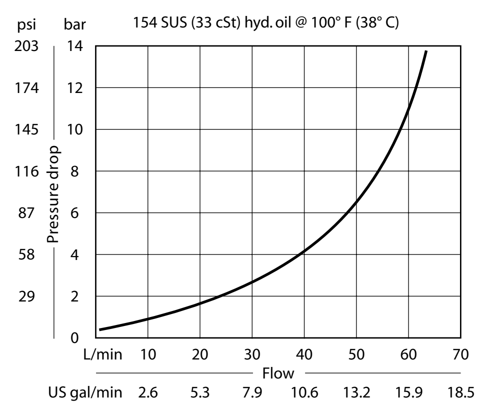


PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow at 7 bar [100 psi]	**50 l/min [13 US gpm]**
Leakage	6 drops/min @ 210 bar [3000 psi]
Weight	0.08 kg [0.17 lb]
Cavity	SDC10-2

PERFORMANCE CURVES

Pressure drop



MODEL CODE

CP100 - 2 - B - 8S - 005

Crack Pressure

Code	Bar	Psi
005	0.34	[5]
015	1.0	[15]
030	2.1	[30]
050	3.4	[50]
065	4.5	[65]
100	6.9	[100]

Housing

Code	Ports & Material	Housing Model Code
0	No Housing	
DG3B	Al, 3/8 BSP	SDC10-2-DG3B
DG4B	Al, 1/2 BSP	SDC10-2-DG4B
6S	Al,#6 SAE	CP10-2-6S
8S	Al, #8 SAE	CP10-2-8S

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Seal Option

Code	Seal kit
B-Buna-N	120015
V-Viton	120016

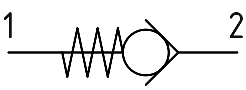
Check Valves
CP101-2

Check Valve, Reverse Direction
350 bar [5000 psi] • 76 l/min [20 US gpm]

DESCRIPTION AND OPERATION

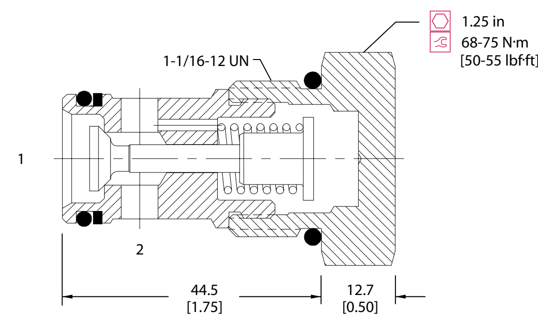
This is a check valve where free flow takes place from port 2 to 1 and is blocked from port 1 to 2.

SCHEMATIC



DIMENSIONS

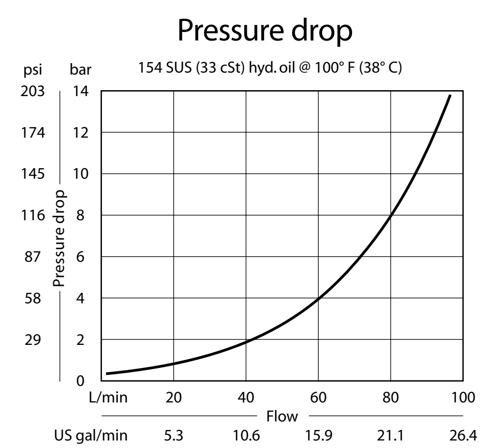
mm [in]



PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow at 7 bar [100 psi]	**76 l/min [20 US gpm]**
Leakage	6 drops/min @ 210 bar [3000 psi]
Weight	0.18 kg [0.40 lb]
Cavity	CP12-2

PERFORMANCE CURVES



MODEL CODE

CP101 - 2 - B - 12S - 005

Seal Option

Code	Seal kit
B-Buna-N	120017
V-Viton	120018

Crack Pressure

Code	Bar	Psi
005	0.34	[5]
015	1.0	[15]
065	4.5	[65]

Housing

Code	Ports & Material	Housing Model Code
0	No Housing	
4B	Al, 1/2 BSP	CP12-2-4B
6B	Al, 3/4 BSP	CP12-2-6B
10S	Al,#10 SAE	CP12-2-10S
12S	Al, #12 SAE	CP12-2-12S

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

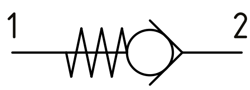
Check Valves
CP102-2

Check valve, Reverse Direction with Bypass Orifice
350 bar [5000 psi] • 150 l/min [40 US gpm]

DESCRIPTION AND OPERATION

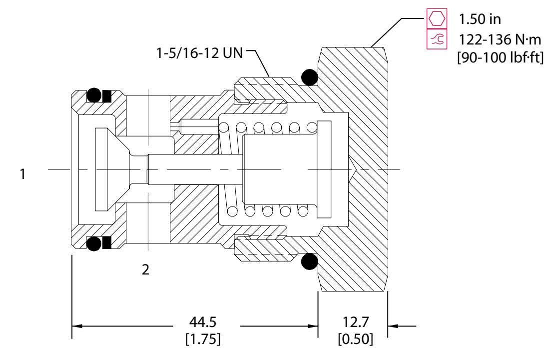
This is a check valve where free flow takes place from port 2 to 1 and is blocked from port 1 to 2.

SCHEMATIC



DIMENSIONS

mm [in]

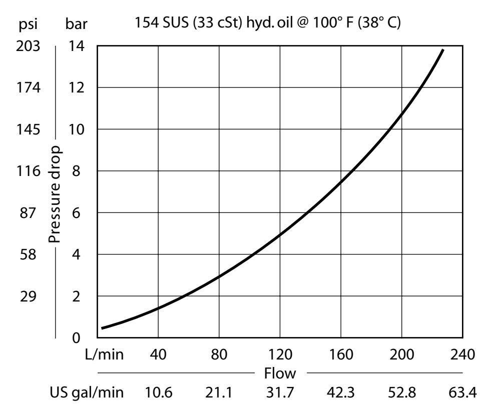


PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow at 7 bar [100 psi]	**150 l/min [40 US gpm]**
Leakage	6 drops/min @ 210 bar [3000 psi]
Weight	0.26 kg [0.57 lb]
Cavity	SDC16-2

PERFORMANCE CURVES

Pressure drop



MODEL CODE

CP102 - 2 - B - 16S - 005

Crack Pressure

Code	Bar	Psi
005	0.34	[5]
015	1.0	[15]
030	2.1	[30]
050	3.4	[50]
065	4.5	[65]
100	6.9	[100]

Housing

Code	Ports & Material	Housing Model Code
0	No Housing	
HG-6B	Al, 3/4 BSP	SDC16-2-HG-6B
HG-8B	Al, 1 BSP	SDC16-2-HG-8B
12S	Al,#12 SAE	CP16-2-12S
16S	Al, #16 SAE	CP16-2-16S

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Seal Option

Code	Seal kit
B-Buna-N	120019
V-Viton	120020

Check Valves

CP103-2

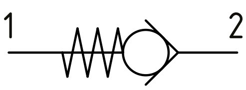
Check Valve, Reverse Direction

350 bar [5000 psi] • 265 l/min [70 US gpm]

DESCRIPTION AND OPERATION

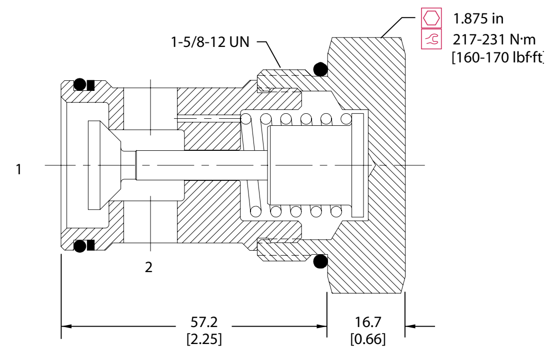
This is a check valve where free flow takes place from port 2 to 1 and is blocked from port 1 to 2.

SCHEMATIC



DIMENSIONS

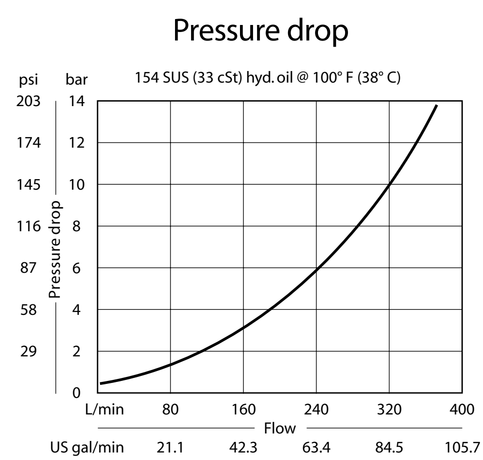
mm [in]



PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow at 7 bar [100 psi]	**265 l/min [70 US gpm]**
Leakage	6 drops/min @ 210 bar [3000 psi]
Weight	0.54 kg [1.20 lb]
Cavity	SDC20-2

PERFORMANCE CURVES



MODEL CODE

CP103 - 2 - B - 16S - 005

Crack Pressure

Code	Bar	Psi
005	0.34	[5]
015	1.0	[15]
030	2.1	[30]
050	3.4	[50]
065	4.5	[65]
100	6.9	[100]

Seal Option

Code	Seal kit
B-Buna-N	120011
V-Viton	120012

Housing

Code	Ports & Material	Housing Model Code
0	No Housing	
8B	Al,1 BSP	CP20-2-8B
10B	Al,1-1/4 BSP	CP20-2-10B
16S	Al,#16 SAE	CP20-2-16S
20S	Al,#20 SAE	CP20-2-20S

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Check Valves
CV6-4

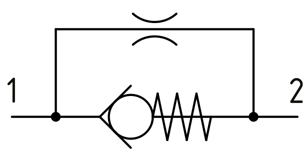
Check valve, Standard Direction with Bypass Orifice

350 bar [5000 psi] • 7.6 l/min [2 US gpm]

DESCRIPTION AND OPERATION

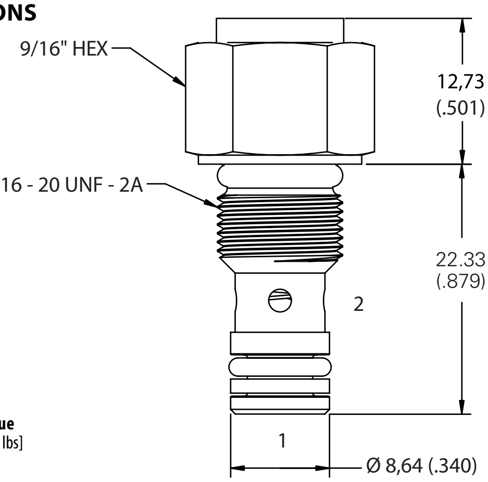
This is a check valve where free flow takes place from port 1 to 2 and is restricted by an internal orifice from port 2 to 1.

SCHEMATIC



DIMENSIONS

mm [in]

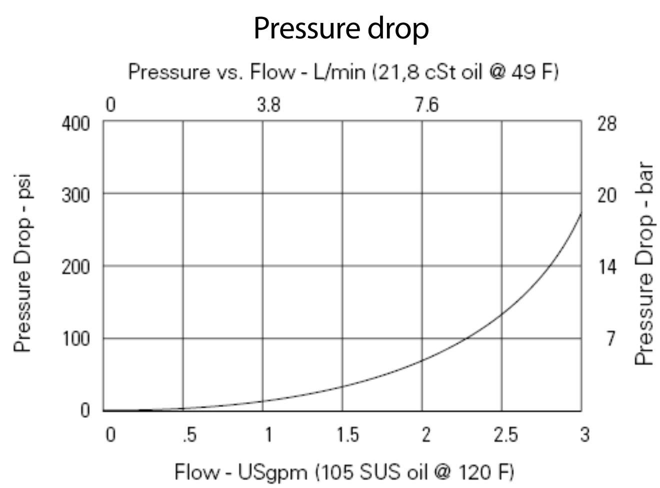


Installation torque
8.1-13.6 Nm [6-10 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**7.6 l/min [2 US gpm]**
Weight	0.04 kg [0.09 lb]
Cavity	C-4-2

PERFORMANCE CURVES



MODEL CODE

CV6 - 4 - V - P - 000 - 5 - 015

Seal Option

Code	Seal kit
Omit-Buna-N	9900174-000
V-Viton	9900175-000

Style

P-Poppet type

Housing

000-No Housing

Orifice Size

Specify in thousandths of an inch
015-.015″ min
050-.050″ max

Crack Pressure

Code	Bar	Psi
05	0.34	[5]

Check Valves
CV6-10

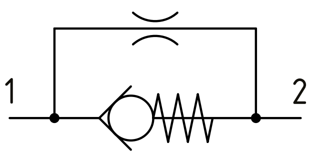
Check valve, Standard Direction with Bypass Orifice

350 bar [5000 psi] • 76 l/min [20 US gpm]

DESCRIPTION AND OPERATION

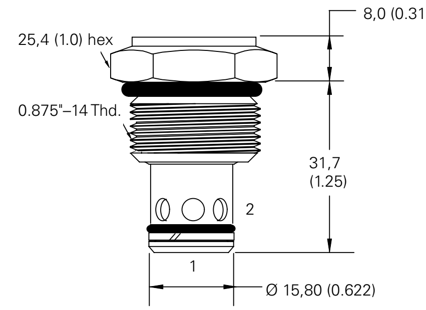
This is a check valve where free flow takes place from port 1 to 2 and is restricted by an internal orifice from port 2 to 1.

SCHEMATIC



DIMENSIONS

mm [in]

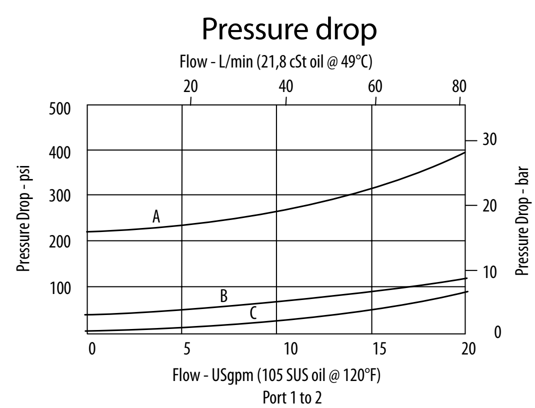


Installation torque
A-47-54 Nm [35-40 ft. lbs]
S-68-70 Nm [50-55 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**76 l/min [20 US gpm]**
Weight	0.04 kg [0.09 lb]
Cavity	SDC10-2

PERFORMANCE CURVES



A-CV6-10-P-210 • **B**-CV6-10-P-040 • **C**-CV6-10-P-003

MODEL CODE

CV6 - 10 - V - P - A - 3B - 003 - 015

Seal Option

Code	Seal Kit
Omit-Buna-N	889615
V-Viton	889619

Style

P-Poppet type

Housing Material

0-No Housing
A-Aluminum
S-Steel

Housing

Code	Ports	Housing Model Code: Aluminum standard duty	Aluminum heavy duty	Steel heavy duty
Omit	No Housing			
3B	3/8" BSP	02-175462		
6T	#6 SAE	566151		02-175100
8T	#8 SAE			02-175101
2G	1/4" BSP		876702	02-175102
3G	3/8" BSP		876703	02-175103
6H	#6 SAE		876700	
8H	#8 SAE		876701	

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
*Additional housings available

Orifice Size

Specify in thousandths of an inch
015-.015" min
050-.050" max

Crack Pressure

Code	Bar	Psi
003	0.21	[3]
010	0.69	[10]
035	2.41	[35]
040	2.76	[40]
065	4.48	[65]
100	6.9	[100]
180	12.4	[180]
210	14.5	[210]

Check Valves
RV4-10

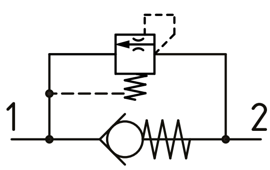
Check Valve, Standard Direction with Thermal Relief

350 bar [5000 psi] • 45 l/min [12 US gpm]

DESCRIPTION AND OPERATION

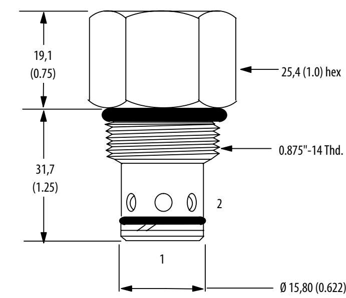
This is a check valve where free flow takes place from port 1 to 2 and is blocked from port 2 to 1. This valve has the addition of a thermal relief that will open from port 2 to 1 when the pre-set pressure is reached. This valve can be used in conjunction with a separate pilot piston and used on cylinder applications where thermal expansion of the oil could be an issue.

SCHEMATIC



DIMENSIONS

mm [in]

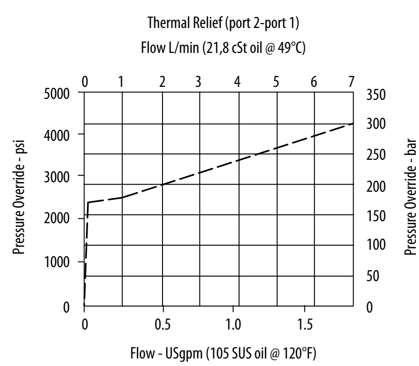


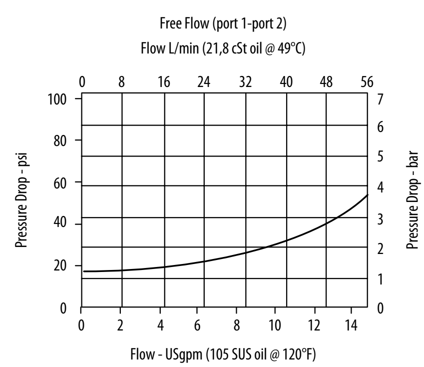
Installation torque
A-47-54 Nm [35-40 ft. lbs]
S-68-75 Nm [50-55 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**45 l/min [12 US gpm]**
Leakage	0.3 ml/min [5 drops/min]
Check Valve Crack Pressure	1.25 bar [18 psi]
Weight	0.11 kg [0.25 lb]
Cavity	SDC10-2

PERFORMANCE CURVES





MODEL CODE

RV4 - 10 - V - F - S - 0 - 50 - 10

Seal Option

Code	Seal Kit
Omit-Buna-N	565803
V-Viton	566086

Adjustment Option

F-Fixed

Housing Material

Omit-Aluminum/No housing
S-Steel

Housing

Code	Ports	Housing Model Code: Aluminum Standard Duty	Aluminum Heavy Duty	Steel Heavy Duty
0	No Housing			
3B	3/8" BSP	02-175462		
2G	1/4" BSP		876702	02-175102
3G	3/8" BSP		876703	02-175103
6H	#6 SAE		876700	
8H	#8 SAE		876701	
6T	#6 SAE	566151		02-175100
8T	#8 SAE			02-175101

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Pressure Setting

Code-x100-Pressure setting in psi (100 psi increments within specified Pressure Range)
XXX-Standard setting (see Pressure Range for value)
Example:

Code	Bar	Psi
10	70	[1000]
25	175	[2500]

Pressure Range

Code	Bar	Psi
50	28-350	[400-5000]

Check Valves
RPC 04

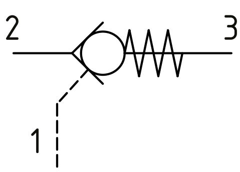
Pilot Operated Check Valve, Port 1 Pilot to Open

350 bar [5000 psi] • 21 l/min [5.5 US gpm]

DESCRIPTION AND OPERATION

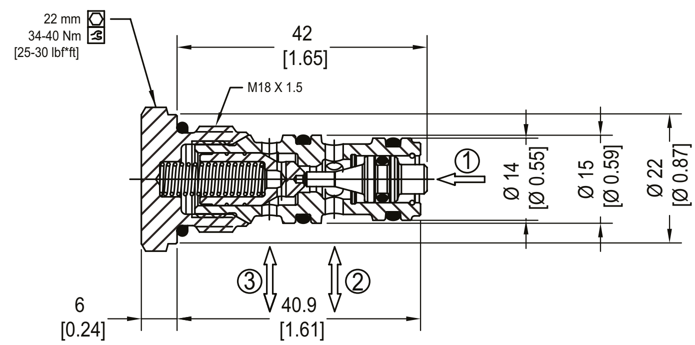
This is a pilot operated check valve where free flow takes place from port 2 to 3 and is blocked from port 3 to 2 until pilot pressure is applied to port 1.

SCHEMATIC



DIMENSIONS

mm [in]

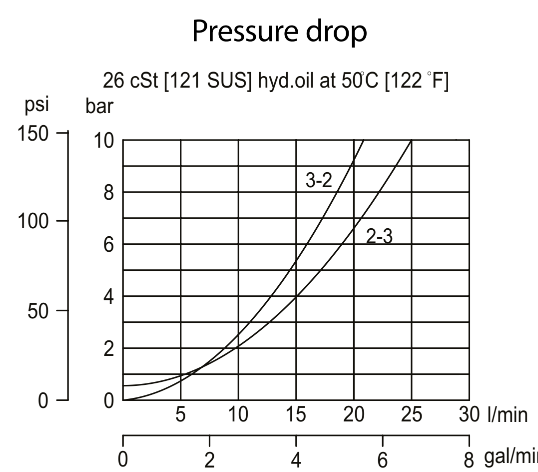


PERFORMANCE DATA

Rated pressure*	**350 bar [5000 psi]**
Rated flow at 7 bar [100 psi]	**21 l/min [5.5 US gpm]**
Weight	0.06 kg [0.13 lb]
Pilot Ratio	3.2:1
Cavity	NCS04/3

*Rated Pressure based on NFPA fatigue test standard [at 1 million cycles]
Note: A piston seal requires a 5 bar [72.5 psi] or greater return spring.

PERFORMANCE CURVES



MODEL CODE

RPC04 - 2.5 - OR - 00 - V

Crack Pressure

Code	Bar	Psi
0.5	0.5	[7.3]
2.5	2.5	[36]
5	5	[73]
8	8	[116]
15	15	[218]

Pilot Seal Option

Omit - No seals
OR - Seals

Seal Option

Code	Seal kit
Omit-Buna-N	230000160
V-Viton	230000450

Housing

Code	Ports & Material	Housing Model Code
00	No Housing	
SE1/4	AL, 1/4 BSP	NCS04/3-SE-1/4
SE4S	AL, #4 SAE	NCS04/3-SE-4S
SE6S	AL, #6 SAE	NCS04/3-SE-6S

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi].
* Additional housings available

Check Valves
SPC2-8

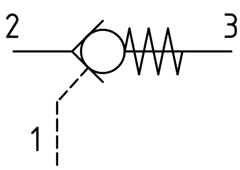
Pilot Operated Check Valve, Port 1 Pilot to Open

240 bar [3500 psi] • 19 l/min [5 US gpm]

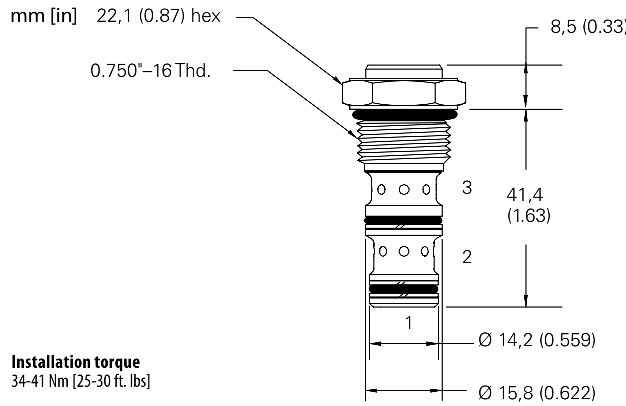
DESCRIPTION AND OPERATION

This is a pilot operated check valve where free flow takes place from port 2 to 3 and is blocked from port 3 to 2 until pilot pressure is applied to port 1.

SCHEMATIC



DIMENSIONS



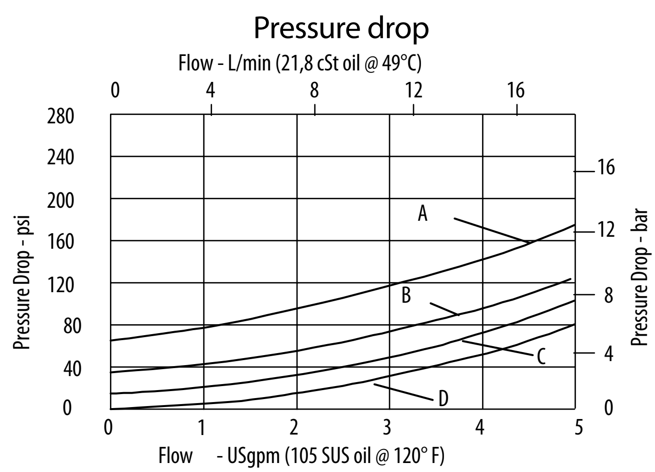
Installation torque
34-41 Nm [25-30 ft. lbs]

PERFORMANCE DATA

Rated pressure	**240 bar [3500 psi]**
Rated flow	**19 l/min [5 US gpm]**
Weight	0.07 kg [0.15 lb]
Pilot Ratio	3:1
Internal leakage [all leak rates @ 240 bar [3500 psi]	
Port 3 to 2	5 drops/min. maximum
Port 2 to 1 unsealed piston	140 ml/min. maximum zero leakage with sealed piston
Cavity	SDC08-3

Note: A piston seal requires a 2.4 bar [35 psi] or greater return spring

PERFORMANCE CURVES



A-65 psi • **B**-35 psi
C-15 psi • **D**-Piloted Open

MODEL CODE

SPC2 - 8 - V - P - A - 4T - 15

Seal Option

Code	Seal Kit
Omit-Buna-N	02-173326
V-Viton	02-173327
U-Buna-N with no pilot seals	02-173326
W-Viton with no pilot seals	02-173327

Crack Pressure

Code	Bar	Psi
15	1.0	[15]
35	2.4	[35]
65	4.5	[65]

Housing

Code	Ports	Aluminum heavy duty	Steel heavy duty
Omit	No Housing		
4T	#4 SAE	02-160741	02-160745
6T	#6 SAE	02-160742	02-160744
2G	1/4" BSP	02-160739	02-160743
3G	3/8" BSP	02-160740	02-160746

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi].
* Additional housings available

Housing Material

Omit-No Housing
A-Aluminum
S-Steel

Check Valves

SPC2-10

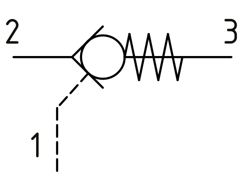
Pilot Operated Check Valve, Port 1 Pilot to Open

210 bar [3000 psi] • 23 l/min [6 US gpm]

DESCRIPTION AND OPERATION

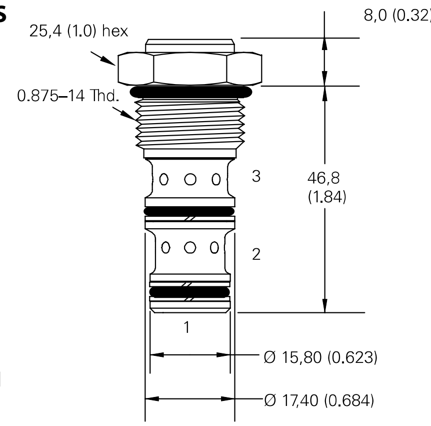
This is a pilot operated check valve where free flow takes place from port 2 to 3 and is blocked from port 3 to 2 until pilot pressure is applied to port 1.

SCHEMATIC



DIMENSIONS

mm [in]

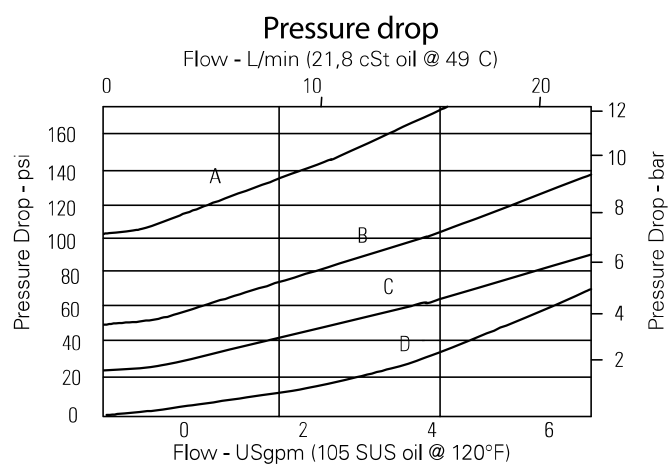


Installation torque
A - 47-54 Nm [35-40 ft. lbs]
S - 68-75 Nm [50-55 ft. lbs]

PERFORMANCE DATA

Rated pressure	**210 bar [3000 psi]**
Rated flow	**23 l/min [6 US gpm]**
Leakage	5 drops/min. maximum @ 210 bar [3000 psi]
Weight	0.08 kg [0.18 lb]
Pilot Ratio	4:1
Cavity	SDC10-3

PERFORMANCE CURVES



A-100 psi • **B**-50 psi
C-25 psi • **D**-Piloted Open

MODEL CODE

SPC2 - 10 - V - P - 3B - 50

Crack Pressure

Code	Bar	Psi
25	1.7	[25]
50	3.5	[50]
100	6.9	[100]

Seal Option

Code	Seal Kit
Omit-Buna-N	02-153267
V-Viton	02-173666
U-Buna-N with no pilot seals	02-153267
W-Viton with no pilot seals	02-173666

Housing

Code	Ports	Aluminum standard duty	Aluminum heavy duty
0	No Housing		
3B	3/8"BSP	02-173358	
6T	#6 SAE	566162	
2G	1/4" BSP		876705
3G	3/8" BSP		876714
6H	#6 SAE		876704
8H	#8 SAE		876711

* Aluminum bodies are to be used for pressures less than 210 bar [3000 psi].
* Additional housings available

Check Valves
RPC 06

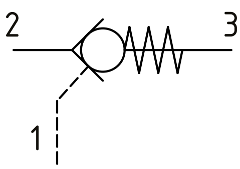
Pilot Operated Check Valve, Port 1 Pilot to Open

350 bar [5000 psi] • 35 l/min [9 US gpm]

DESCRIPTION AND OPERATION

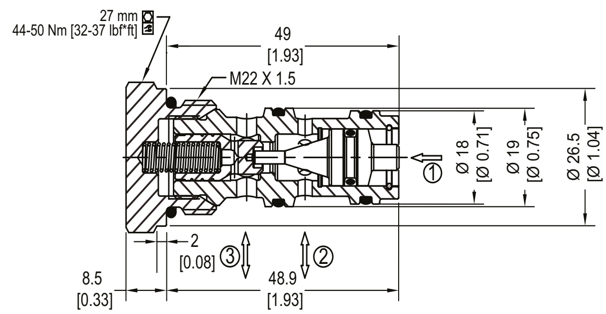
This is a pilot operated check valve where free flow takes place from port 2 to 3 and is blocked from port 3 to 2 until pilot pressure is applied to port 1.

SCHEMATIC



DIMENSIONS

mm [in]

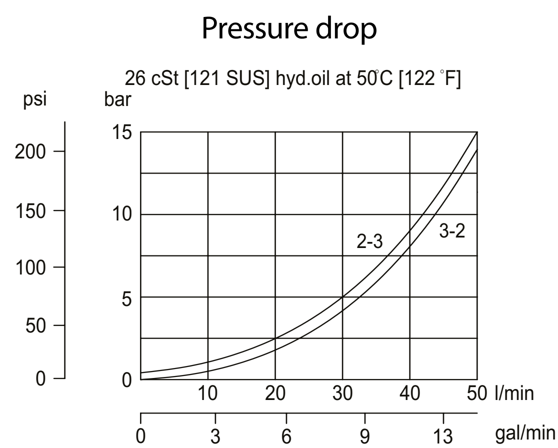


PERFORMANCE DATA

Rated pressure*	**350 bar [5000 psi]**
Rated flow at 7 bar [100 psi]	**35 l/min [9 US gpm]**
Weight	0.10 kg [0.22 lb]
Pilot Ratio	3.4:1
Cavity	NCS06/3

*Rated pressure based on NFPA fatigue test standard [at 1 million cycles]
Note: A piston seal requires a 5 bar [72.5 psi] or greater return spring.

PERFORMANCE CURVES



MODEL CODE

RPC06 - 5 - OR - 00 - V

Crack Pressure

Code	Bar	Psi
0.5	0.5	[7]
2	2	[30]
5	5	[73]
10	10	[145]

Pilot Seal Option

Omit - No seals
OR - Seals

Seal Option

Code	Seal kit
Omit-Buna-N	230000070
V-Viton	230000110

Housing

Code	Ports & Material	Housing Model Code
00	No Housing	
SE3/8	AL, 3/8 BSP	NCS06/3-SE-3/8
SE1/2	AL, 1/2 BSP	NCS06/3-SE-1/2
SE6S	AL, #6 SAE	NCS06/3-SE-6S
SE8S	AL, #8 SAE	NCS04/3-SE-8S

* Aluminum bodies are to be used for pressures less than 210 bar [3000 psi].
* Additional housings available

Check Valves
RPC 12

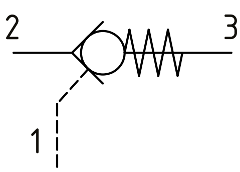
Pilot Operated Check Valve, Port 1 Pilot to Open

315 bar [4600 psi] • 90 l/min [24 US gpm]

DESCRIPTION AND OPERATION

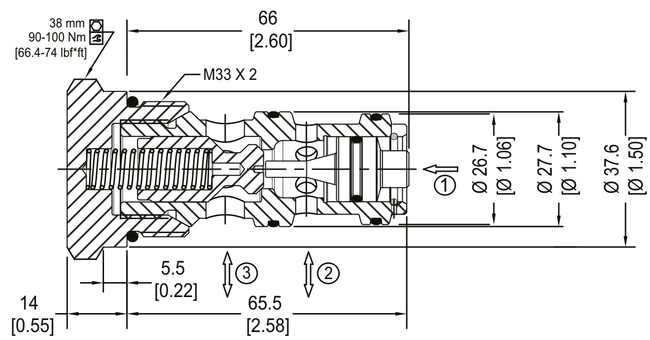
This is a pilot operated check valve where free flow takes place from port 2 to 3 and is blocked from port 3 to 2 until pilot pressure is applied to port 1.

SCHEMATIC



DIMENSIONS

mm [in]



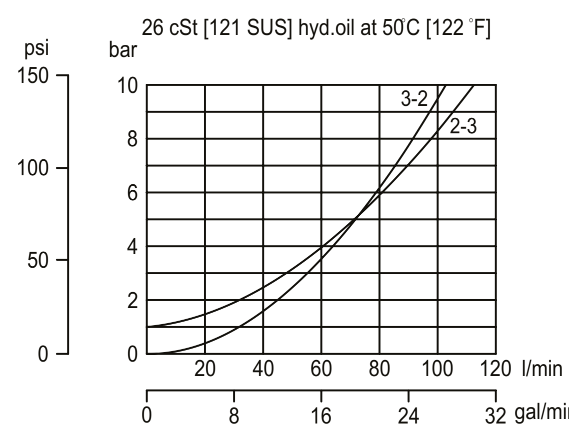
PERFORMANCE DATA

Rated pressure	**315 bar [4600 psi]**
Rated flow at 7 bar [100 psi]	**90 l/min [24 US gpm]**
Weight	0.20 kg [0.44 lb]
Pilot Ratio	2.8:1
Cavity	NCS12/3

Note: A piston seal requires a 5 bar [72.5 psi] or greater return spring.

PERFORMANCE CURVES

Pressure drop



MODEL CODE

RPC12 - 5 - OR - 00 - V

Crack Pressure

Code	Bar	Psi
0.5	0.5	[7]
2.5	2.5	[36]
5	5	[73]
10	10	[145]

Pilot Seal Option

Omit-No seals
OR-Seals

Seal Option

Code	Seal kit
Omit-Buna-N	230000130
V-Viton	230000360

Housing

Code	Port & Material	Housing Model Code
00	No Housing	
SE1/2	AL, 1/2 BSP	NCS12/3-SE-1/2
SE3/4	AL, 3/4 BSP	NCS12/3-SE-3/4
SE8S	AL, #8 SAE	NCS12/3-SE-8S
SE12S	AL, #12 SAE	NCS12/3-SE-12S

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Check Valves
4CK30

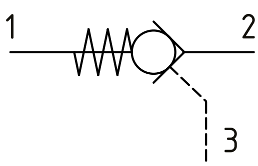
Pilot Operated Check Valve, Port 3 Pilot to Open

350 bar [5000 psi] • 30 l/min [8 US gpm]

DESCRIPTION AND OPERATION

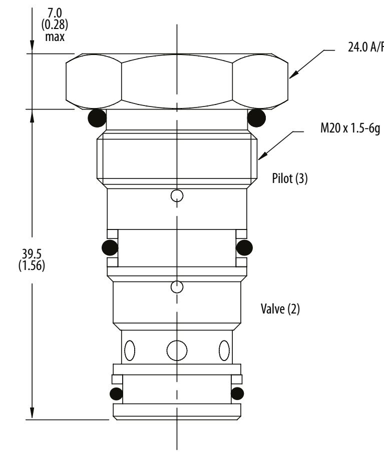
This is a pilot operated check valve where free flow takes place from port 2 to 1 and is blocked from port 1 to 2 until pilot pressure is applied to port 3.

SCHEMATIC



DIMENSIONS

mm [in]

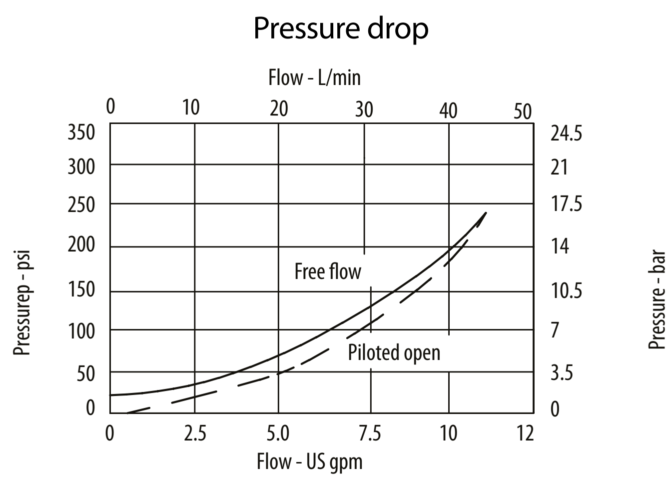


Installation torque
45 Nm [33 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**30 l/min [8 US gpm]**
Weight	0.08 kg [0.18 lb]
Pilot Ratio	3:1
Leakage	0.3 ml/min nominal [5 drops/min]
Cavity	A6610

PERFORMANCE CURVES



MODEL CODE

4CK35 - 1 - 3W - S - 3 - 377

Basic Code

4CK30-No Housing
4CK35-Cartridge and Housing
4CKK34-Cartridges and Dual Housing

Pilot Port Size

1-Internal

Housing

Code	Ports	Housing Model Code: Aluminium single	Steel single	Aluminium double	Steel double
Omit	No Housing				
3W	3/8" BSP. 1/4" BSP Pilot Port	B6743	B12823	B6836	B13803
6T	3/8" SAE. 1/4" SAE Pilot Port	B10536	B11560	B10805	B11630
8T	1/2" SAE. 1/4" SAE Pilot Port	B7884	B11811	B30237	B11812

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Housing Material

Omit-Aluminum/No housing
377-Steel

Pilot Seal Option

Omit - No seals
3 - Seals

Seal Option

Code	Seal kit
S-Nitrile	SK430
SV-Viton	SK430V

Check Valves
4SK30

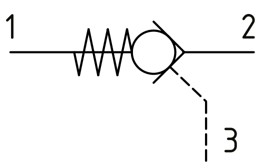
Pilot Operated Check Valve, Port 3 Pilot to Open

350 bar [5000 psi] • 30 l/min [8 US gpm]

DESCRIPTION AND OPERATION

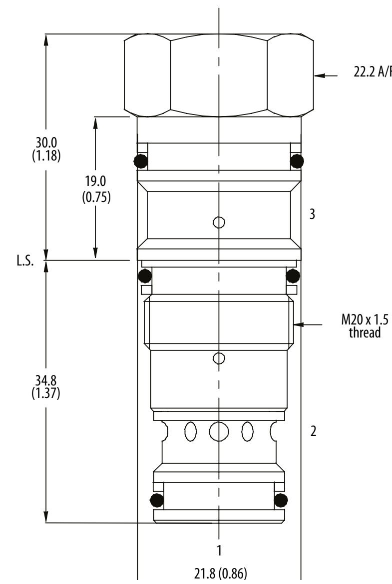
This is a pilot operated check valve where free flow takes place from port 2 to 1 and is blocked from port 1 to 2 until pilot pressure is applied to port 3.

SCHEMATIC



DIMENSIONS

mm [in]

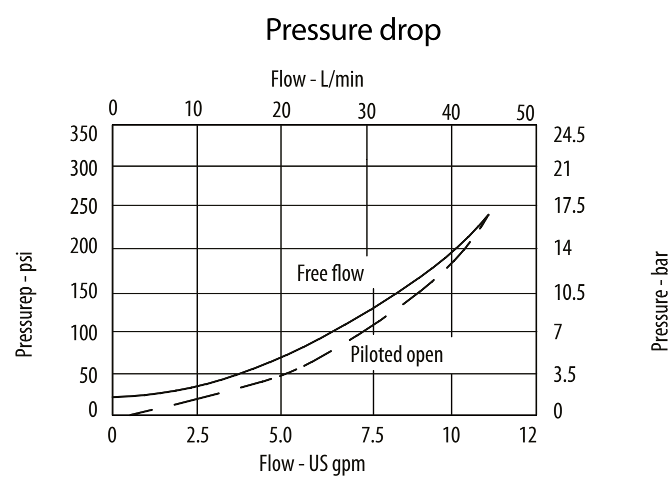


Installation torque
45 Nm [33 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**30 l/min [8 US gpm]**
Weight	0.18 kg [0.39 lb]
Pilot Ratio	3:1 and 5:1
Leakage	0.3 ml/min nominal [5 drops/min]
Cavity	A20090-T11A

PERFORMANCE CURVES



MODEL CODE

4SK30 - 3 - S - 3

Pilot Ratio

3 -3:1
5 -5:1

Seal Option

Code	Seal kit
S-Nitrile	SK1079
SV-Viton	SK1079V

Pilot Seal Option

Omit - No seals
3 - Seals

Check Valves
4CK90

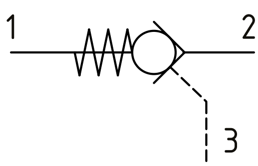
Pilot Operated Check Valve, Port 3 Pilot to Open

350 bar [5000 psi] • 90 l/min [24 US gpm]

DESCRIPTION AND OPERATION

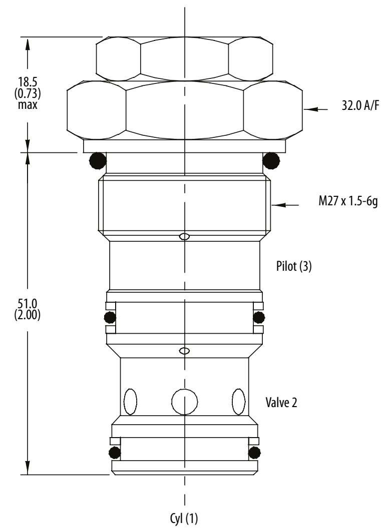
This is a pilot operated check valve where free flow takes place from port 2 to 1 and is blocked from port 1 to 2 until pilot pressure is applied to port 3.

SCHEMATIC



DIMENSIONS

mm [in]

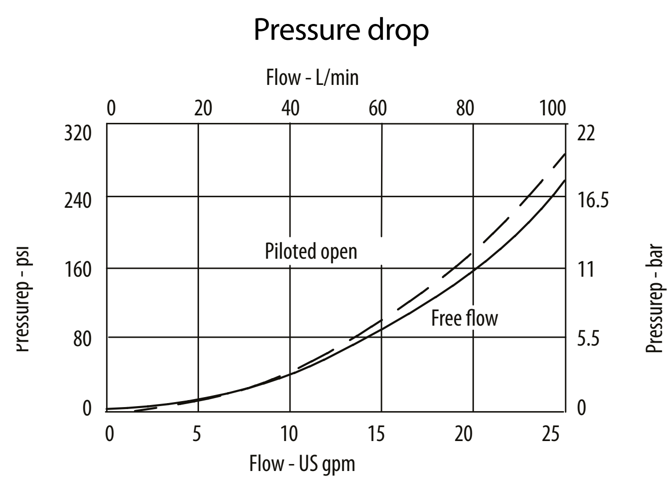


Installation torque
90 Nm [66 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**90 l/min [24 US gpm]**
Weight	0.27 kg [0.61 lb]
Pilot Ratio	4:1
Leakage	0.3 ml/min nominal [5 drops/min]
Cavity	A12336

PERFORMANCE CURVES



MODEL CODE

4CK90 - 1 - 4W - S - 3 - 377

Basic Code
4CK90-No Housing
4CK95-Cartridge and Housing
4CKK95-Cartridges and Dual Housing

Pilot Option
1 -Internal

Housing

Code	Ports	Housing Model Code			
		Aluminium single	Steel single	Aluminium double	Steel double
Omit	No Housing				
4W	1/2" BSP 1/4" BSP Pilot Port	B13625	B13626	C13627	C13628
8T	1/2" SAE 1/4" SAE Pilot Port	B10806	B10922	C10807	C11561

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Housing Material
Omit-Aluminum/No housing
377-Steel

Pilot Seal Option
Omit - No seals
3 - Seals

Seal Option

Code	Seal kit
S-Nitrile	SK832
SV-Viton	SK832V

Check Valves
POC1-10

Pilot Operated Check Valve, Port 3 Pilot to Open

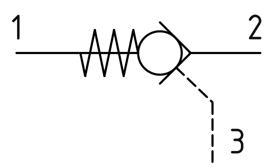
350 bar [5000 psi] • 57 l/min [15 US gpm]

DESCRIPTION AND OPERATION

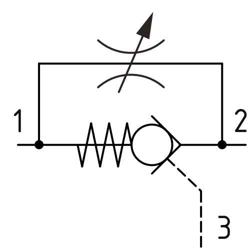
This is a pilot operated check valve where free flow takes place from port 2 to 1 and is blocked from port 1 to 2 until pilot pressure is applied to port 3.

SCHEMATIC

POC1-10-F

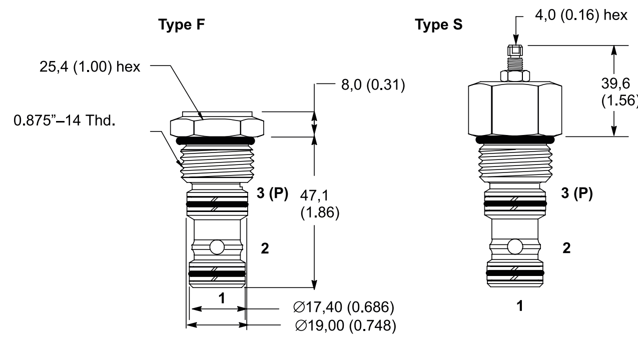


POC1-10-S



DIMENSIONS

mm [in]

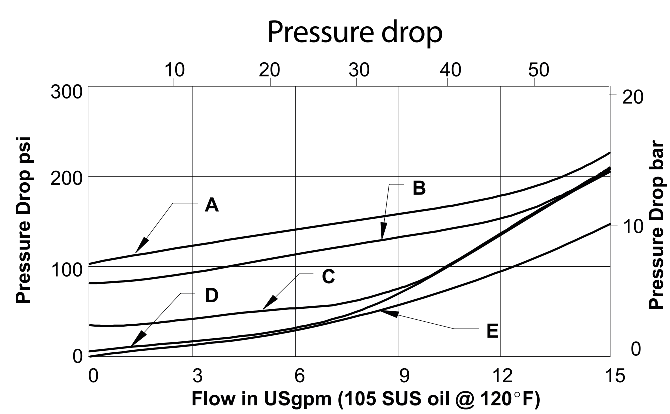


Installation torque
A-47-54 Nm [35-40 ft. lbs]
S-68-75 Nm [50-55 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**57 l/min [15 US gpm]**
Weight	0.17 kg [0.36 lb] (without override) 0.10 kg [0.23 lb]
Pilot Ratio	3:1
Leakage	5 drops/min @ 350 bar [5000 psi]
Cavity	SDC10-3S

PERFORMANCE CURVES



A-100 • **B**-075 • **C**-030 • **D**-005 • **E**-Full Pilot

MODEL CODE

POC1 - 10 - V - F - I - A - 6T - 005

Seal Option

Code	Seal kit
Omit-Buna-N	889650
V-Viton	889652

Override Option

F-Fixed
S-External Override

Housing Option

0-No housing
I-Cartridge and housing

Housing Material

Omit-No housing
A-Aluminum
S-Steel

Crack Pressure

Code	Bar	[Psi]
005	0.3	[5]
030	2.0	[30]
075	5.0	[75]
100	7.0	[100]

Housing

Ports	Code		
	Aluminum Standard duty	Aluminum Heavy duty	Steel
No Housing		Omit	
#6 SAE	6T	6H	6T
#8 SAE		8H	8T
#10 SAE			10T
1/4" BSP		2G	
3/8" BSP	3B	3G	3G
1/2" BSP			4G

* Aluminum bodies are to be used for pressures less than 210 bar [3000 psi].
* Additional housings available

Check Valves
4SK90

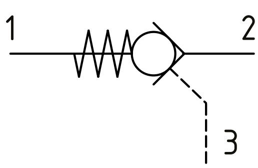
Pilot Operated Check Valve, Port 3 Pilot to Open

350 bar [5000 psi] • 90 l/min [24 US gpm]

DESCRIPTION AND OPERATION

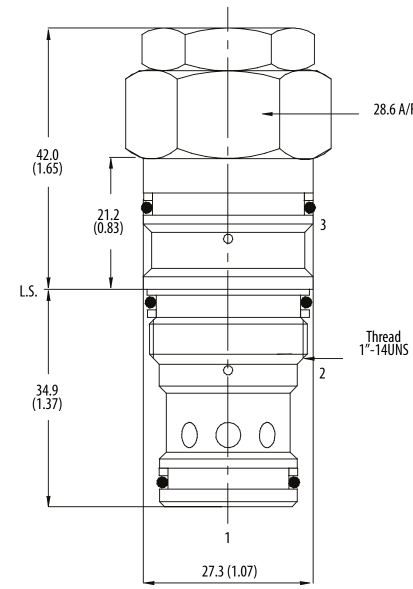
This is a pilot operated check valve where free flow takes place from port 2 to 1 and is blocked from port 1 to 2 until pilot pressure is applied to port 3.

SCHEMATIC



DIMENSIONS

mm [in]

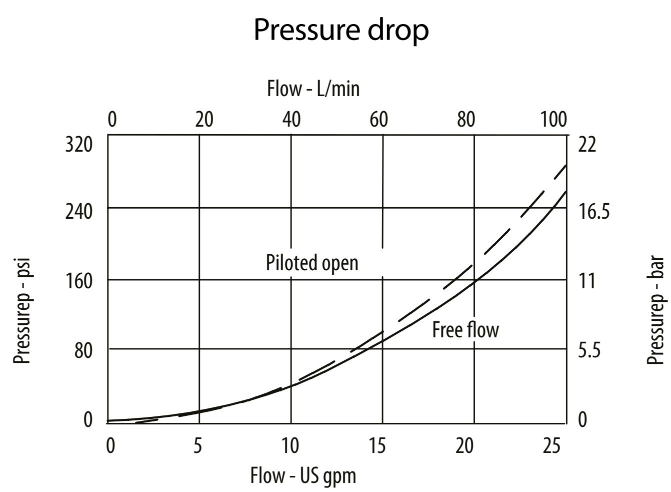


Installation torque
60 Nm [44 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**90 l/min [24 US gpm]**
Weight	0.39 kg [0.86 lb]
Pilot Ratio	4:1
Leakage	0.3 ml/min nominal [5 drops/min]
Cavity	A20092-T2A

PERFORMANCE CURVES



MODEL CODE

4SK90 - 4 - S - 3

Pilot Ratio

4 - 4:1

Seal Option

Code	Seal kit
S-Nitrile	SK1093
SV-Viton	SK1093V

Pilot Seal Option

Omit -No seals

3 -Seals

Check Valves
4CKD90

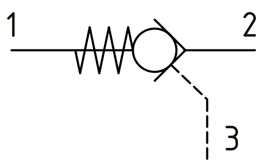
Pilot Operated Check Valve, Port 3 Pilot to Open

420 bar [6000 psi] • 90 l/min [24 US gpm]

DESCRIPTION AND OPERATION

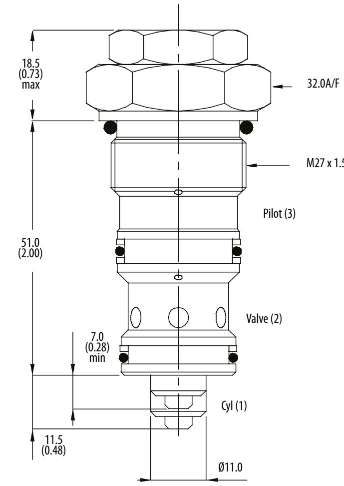
This is a pilot operated check valve where free flow takes place from port 2 to 1 and is blocked from port 1 to 2 until pilot pressure is applied to port 3. At this point, pressure in port 3 opens the de-compression part of the valve at a low pressure. Once the pressure has fallen far enough the main section of the valve opens.

SCHEMATIC



DIMENSIONS

mm [in]

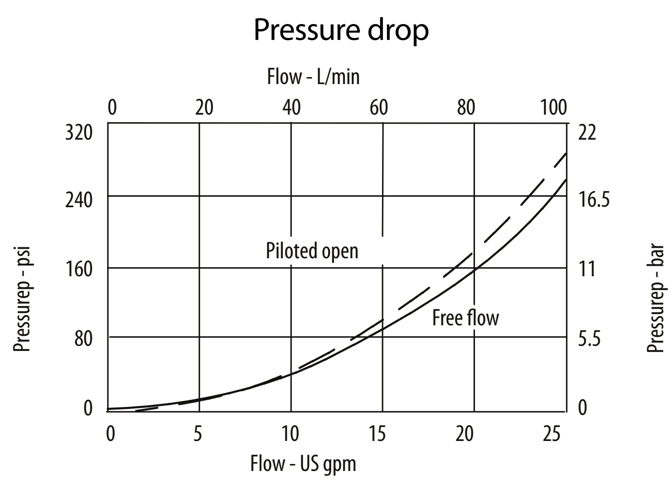


Installation torque
90 Nm [66 ft. lbs]

PERFORMANCE DATA

Rated pressure	**420 bar [6000 psi]**
Rated flow	**90 l/min [24 US gpm]**
Weight	0.243 kg [0.54 lb]
Pilot Ratio	25:1 decompression stage 3:1 main stage
Leakage	0.3 ml/min nominal [5 drops/min]
Cavity	A12336

PERFORMANCE CURVES



MODEL CODE

4CKD90 - 1 - 4W - S - 3 - 377

Basic Code
4CKD90-No Housing
4CKD95-Cartridge and Housing
4CKKD95-Cartridges and Dual Housing

Pilot Ports
1 -Internal

Housing

Code	Ports	Housing Model Code			
		Aluminium single	Steel single	Aluminium double	Steel double
Omit	No Housing				
4W	1/2" BSP 1/4" BSP Pilot Port	B13625	B13626	C13627	C13628
8T	1/2" SAE 1/4" SAE Pilot Port	B10806	B10922	C10807	C11561

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Housing Material
Omit-Aluminum/No housing
377-Steel

Pilot Seal Option
Omit - No seals
3 - Seals

Seal Option

Code	Seal kit
S-Buna-N	SK986
SV-Viton	SK986V

Check Valves
4CK120

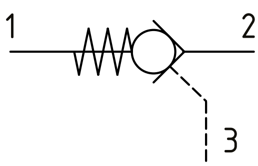
Pilot Operated Check Valve, Port 3 Pilot to Open

350 bar [5000 psi] • 120 l/min [32 US gpm]

DESCRIPTION AND OPERATION

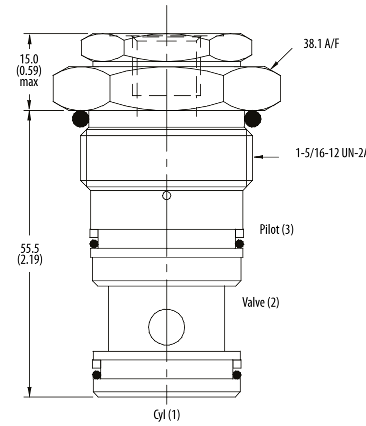
This is a pilot operated check valve where free flow takes place from port 2 to 1 and is blocked from port 1 to 2 until pilot pressure is applied to port 3.

SCHEMATIC



DIMENSIONS

mm [in]

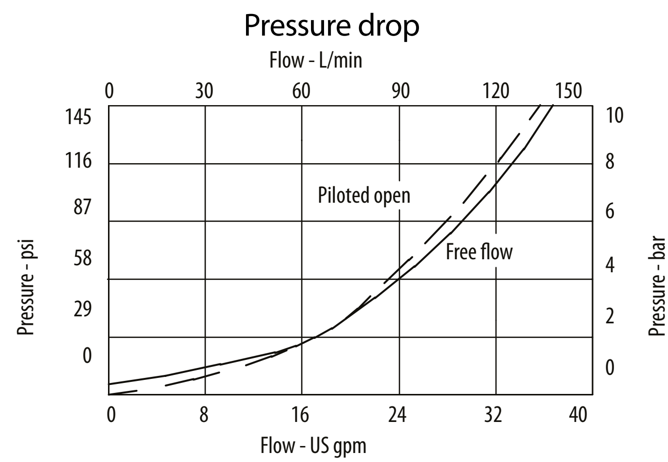


Installation torque
100 Nm [74 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**120 l/min [32 US gpm]**
Weight	0.28 kg [0.62 lb]
Pilot Ratio	3:1
Leakage	0.3 ml/min nominal [5 drops/min]
Cavity	A877

PERFORMANCE CURVES



MODEL CODE

4CK120 - 1 - 6W - S - 3 - 377

Basic Code
4CK120-No Housing
4CK125-Cartridge and Housing
4CKK125-Cartridges and Dual Housing

Pilot Option
1-Internal

Housing

Code	Ports	Aluminium single	Steel single	Aluminium double	Steel double
Omit	No Housing				
6W	3/4" BSP 1/4" BSP Pilot Port	B6898	B5544	C2543	C1200
12T	3/4" SAE 1/4" SAE Pilot Port	B8200		C10629	C16434
16T	1" SAE 1/4" SAE Pilot Port	B10708	B11814		

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Housing Material
Omit-Aluminum/No housing
377-Steel

Pilot Seal Option
Omit - No seals
3 - Seals

Seal Option

Code	Seal kit
S-Nitrile	SK381
SV-Viton	SK381V

Check Valves
4SK140

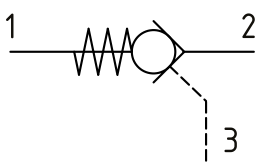
Pilot Operated Check Valve, Port 3 Pilot to Open

350 bar [5000 psi] • 140 l/min [37 US gpm]

DESCRIPTION AND OPERATION

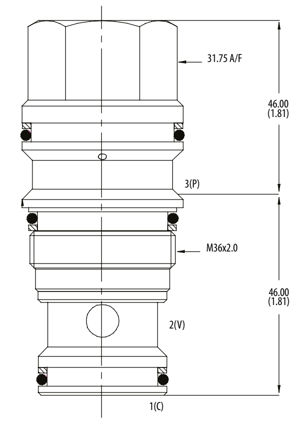
This is a pilot operated check valve where free flow takes place from port 2 to 1 and is blocked from port 1 to 2 until pilot pressure is applied to port 3.

SCHEMATIC



DIMENSIONS

mm [in]



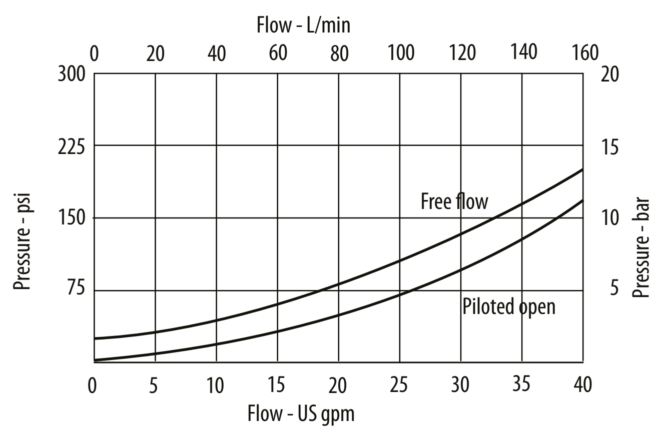
Installation torque
200 Nm [150 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**140 l/min [37 US gpm]**
Weight	0.44 kg [0.96 lb]
Pilot Ratio	3:1
Leakage	0.3 ml/min nominal [5 drops/min]
Cavity	A20094-T17A

PERFORMANCE CURVES

Pressure drop



MODEL CODE

4SK140 - 3 - S - 3

Pilot Ratio

3 - 3:1

Seal Option

Code	Seal kit
S-Nitrile	SK1116
SV-Viton	SK1116V

Pilot Seal Options

3 - Seals

Check Valves
4CK300

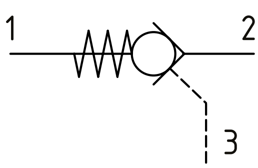
Pilot Operated Check Valve, Port 3 Pilot to Open

350 bar [5000 psi] • 300 l/min [80 US gpm]

DESCRIPTION AND OPERATION

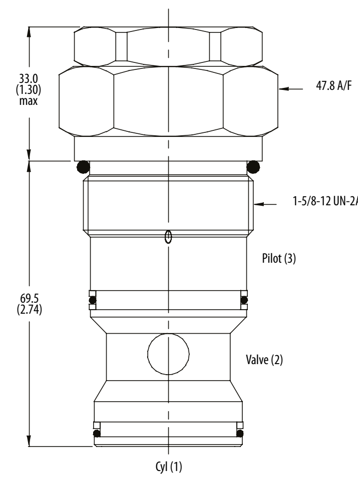
This is a pilot operated check valve where free flow takes place from port 2 to 1 and is blocked from port 1 to 2 until pilot pressure is applied to port 3.

SCHEMATIC



DIMENSIONS

mm [in]

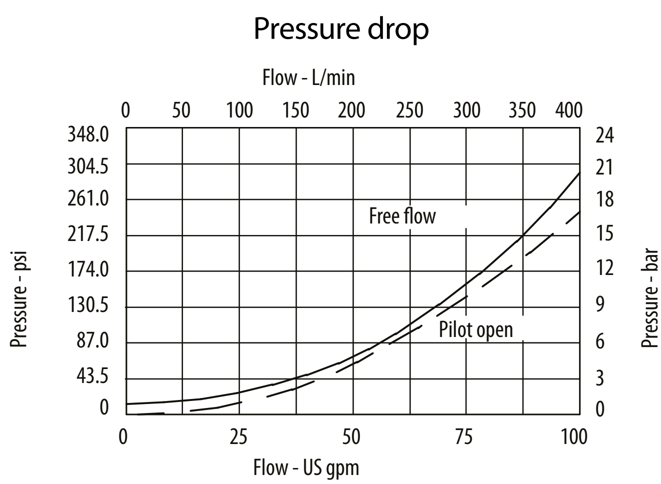


Installation torque
150 Nm [110 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**300 l/min [80 US gpm]**
Weight	0.86 kg [1.89 lb]
Pilot Ratio	3:1
Leakage	0.3 ml/min nominal [5 drops/min]
Cavity	A6935

PERFORMANCE CURVES



MODEL CODE

4CK300 - 1 - 10W - S - 3 - 377

Basic Code

4CK300-No Housing
4CK350-Cartridge and Housing
4CKK350-Cartridges and Dual Housing

Pilot Option

1 -Internal

Housing

Code	Ports	Housing Model Code			
		Aluminium single	Steel single	Aluminium double	Steel double
Omit	No Housing				
10W	1 1/4" BSP 1/4" BSP Pilot Port	B6814	B8610	C8704	C8705
20T	1 1/4" SAE 1/4" SAE Pilot Port	B10630	B11474	C10811	C11564

Housing Material

Omit-Aluminum/No housing
377-Steel

Pilot Seal Option

Omit - No seals
3 - Seals

Seal Option

Code	Seal kit
S-Nitrile	SK683
SV-Viton	SK683V

Check Valves
RPV 06

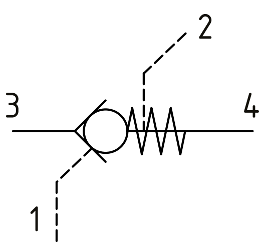
Pilot Operated Check Valve, Port 1 Pilot to open with Drain

315 bar [4600 psi] • 30 l/min [8 US gpm]

DESCRIPTION AND OPERATION

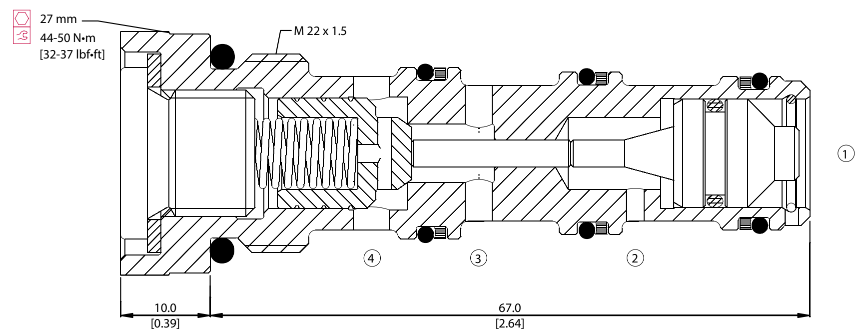
This is a pilot operated check valve with a separate drain. Free flow takes place from port 3 to 4 and is blocked from port 4 to 3 until pilot pressure is applied to port 1. Port 2 is drained to tank to remove any effect of pressure in port 3 affecting the pilot pressure required to keep the valve open.

SCHEMATIC



DIMENSIONS

mm [in]

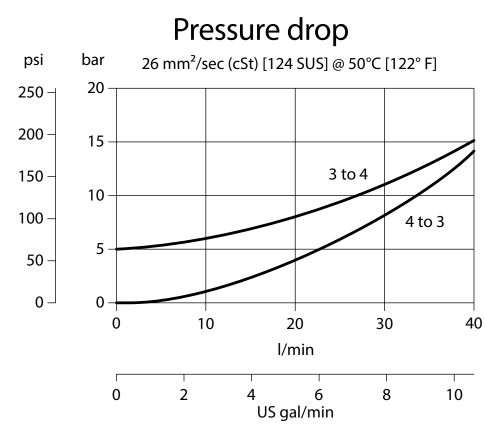


PERFORMANCE DATA

Rated pressure	**315 bar [4600 psi]**
Rated flow at 7 bar [100 psi]	**30 l/min [8 US gpm]**
Weight	0.13 kg [0.29 lb]
Pilot Ratio	3.4:1
Cavity	NCS06/4

Note: A piston seal requires a 4.5 bar [65 psi] or greater return spring.

PERFORMANCE CURVES



MODEL CODE

RPV 06 - 5 - OR - 00 - V

Pilot Seal Option

OR-Seals
Omit-No seals

Housing

Code	Ports & Material	Housing Model Code
00	No Housing	
L3/8	Al, 3/8 BSP	NCS06/4-L-3/8
L1/2	Al, 1/2 BSP	NCS06/4-L-1/2
L6S	Al, #6 SAE	NCS06/4-L-6S
L8S	Al,#8 SAE	NCS06/4-L-8S

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Seal Option

Code	Seal kit
V-Viton	Consult factory
Omit-Buna-N	230000080

Check Valves
5CK30

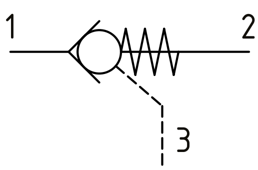
Pilot Operated Check Valve, Port 3 Pilot to Close

350 bar [5000 psi] • 30 l/min [8 US gpm]

DESCRIPTION AND OPERATION

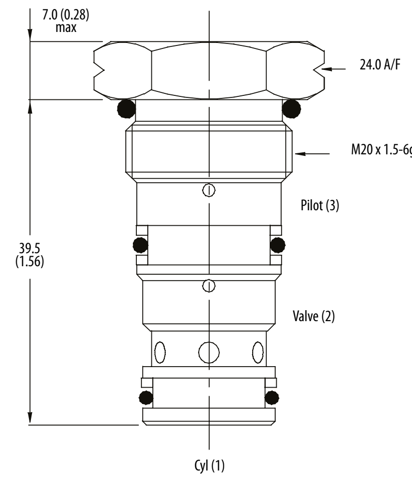
This is a pilot to close check valve where flow is blocked between port 2 and 1 and free flow takes place from port 1 to 2 until pilot pressure is applied to port 3.

SCHEMATIC



DIMENSIONS

mm [in]

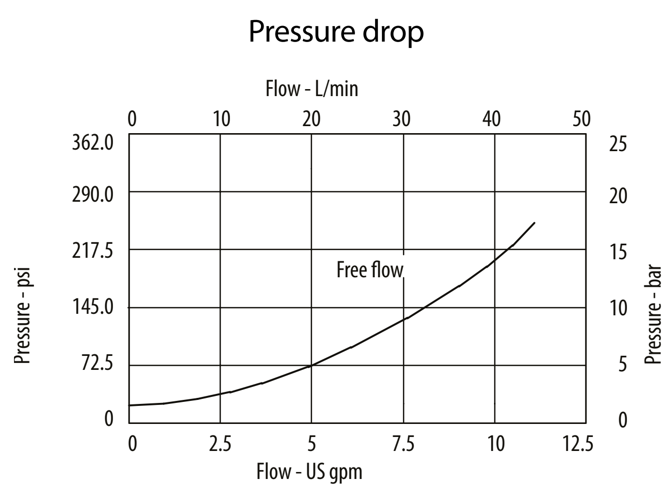


Installation torque
45 Nm [33 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow at 7 bar [100 psi]	**30 l/min [8 US gpm]**
Weight	0.08 kg [0.18 lb]
Pilot Ratio	2:1
Leakage	0.3 ml/min nominal [5 dpm]
Cavity	A6610

PERFORMANCE CURVES



MODEL CODE

5CK30 - 1 - 3W - S - 2 - 377

Basic Code
5CK30-No Housing
5CK35-Cartridge and housing

Pilot
1-Internal

Housing

Code	Ports	Housing Model Code	
		Aluminum	Steel
Omit	No Housing		
3W	3/8" BSP 1/4" BSP Pilot Port	B6743	B12823
6T	3/8" SAE 1/4" SAE Pilot Port	B10536	
8T	1/2" SAE 1/4" Pilot Port		B11811

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Housing Material
Omit-Aluminum/No housing
377-Steel

Pilot Ratio
2-2:1

Seal Option

Code	Seal kit
S-Nitrile	SK829
SV-Viton	SK829V

Check Valves
5CK120

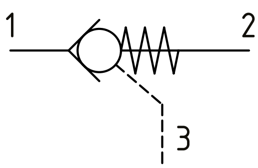
Pilot Operated Check Valve, Port 3 Pilot to Close

350 bar [5000 psi] • 120 l/min [32 US gpm]

DESCRIPTION AND OPERATION

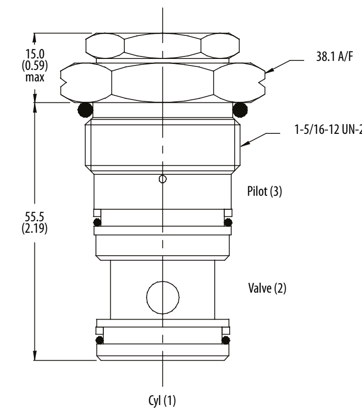
This is a pilot to close check valve where flow is blocked between port 2 and 1 and free flow takes place from port 1 to 2 until pilot pressure is applied to port 3.

SCHEMATIC



DIMENSIONS

mm [in]

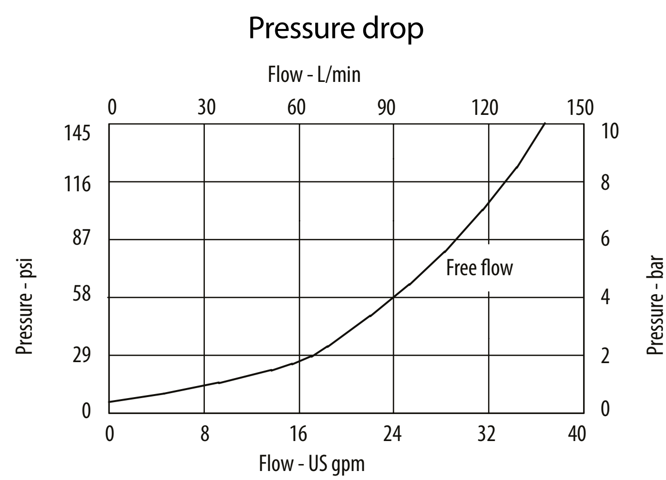


Installation torque
100 Nm [74 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**120 l/min [32 US gpm]**
Weight	0.28 kg [0.62 lb]
Pilot Ratio	2:1
Leakage	0.3 ml/min nominal [5 drops/min]
Cavity	A877

PERFORMANCE CURVES



MODEL CODE

5CK120 - 1 - 3W - S - 2 - 377

Basic Code
5CK120-No Housing
5CK125-Cartridge and Housing

Pilot Option
1-Internal

Housing

Code	Ports	Housing Model Code	
		Aluminum	Steel
Omit	No Housing		
6W	3/4" BSP 1/4" BSP/SAE Pilot Port	B6898	B5544
12T	3/4" SAE 1/4" SAE Pilot Port	B8200	
16T	1" SAE 1/4" SAE Pilot Port	B10708	B11814

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Housing Material
Omit-Aluminum/No housing
377-Steel

Pilot Ratio
2-2:1

Seal Option

Code	Seal kit
S-Nitrile	SK833
SV-Viton	SK833V

Check Valves
5CK300

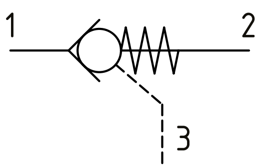
Pilot Operated Check Valve, Port 3 Pilot to Close

350 bar [5000 psi] • 250 l/min [65 US gpm]

DESCRIPTION AND OPERATION

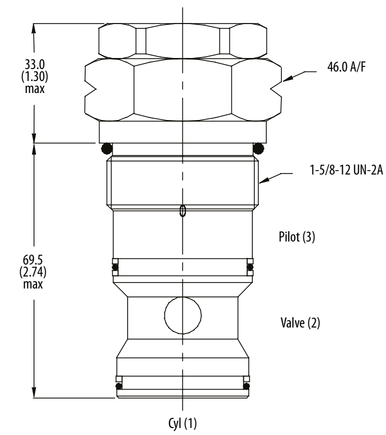
This is a pilot to close check valve where flow is blocked between port 2 and 1 and free flow takes place from port 1 to 2 until pilot pressure is applied to port 3.

SCHEMATIC



DIMENSIONS

mm [in]

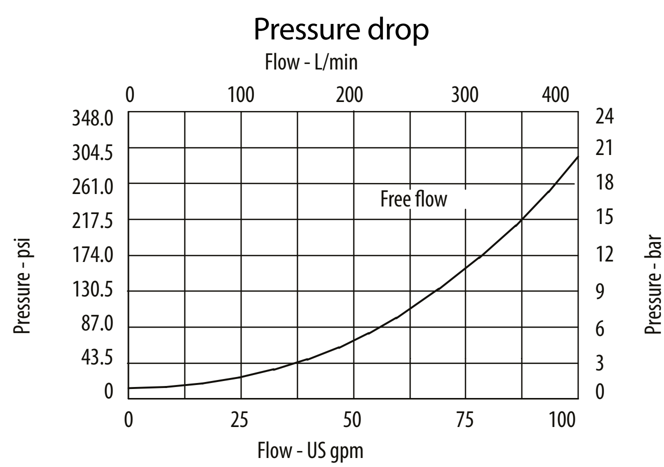


Installation torque
150 Nm [110 ft. lbs]

PERFORMANCE DATA

Rated pressure	**350 bar [5000 psi]**
Rated flow	**250 l/min [65 US gpm]**
Weight	0.73 kg [1.61 lb]
Pilot Ratio	2:1
Leakage	0.3 ml/min nominal [5 drops/min]
Cavity	A6935

PERFORMANCE CURVES



MODEL CODE

5CK300 - 1 - 10W - S - 2 - 377

Basic Code

5CK300-No Housing
5CK350-Cartridge and housing

Pilot Option

1-Internal

Housing

Code	Ports	Housing Model Code	
Omit	No Housing	**Aluminum**	**Steel**
10W	1 1/4" BSP 1/4" BSP/SAE Pilot Port	B6814	B8610
20T	1 1/4" SAE 1/4" BSP/SAE Pilot Port	B10630	B11474

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Housing Material

Omit-Aluminum/No housing
377-Steel

Pilot Ratio

2-2:1

Seal Option

Code	Seal kit
S-Nitrile	SK834
SV-Viton	SK834V

Check Valves
DPC2-8

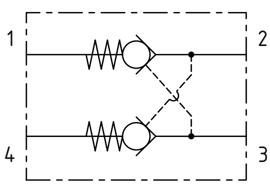
Dual Pilot Operated Check Valve

240 bar [3500 psi] • 19 l/min [5 US gpm]

DESCRIPTION AND OPERATION

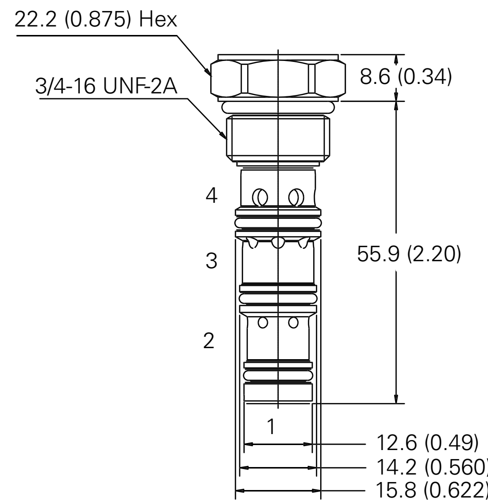
This is a dual pilot operated check valve where free flow takes place from port 2 to 1 and port 3 to 4. Flow is blocked from port 1 to 2 until pressure is applied to port 3 and blocked from port 4 to 3 until pressure is applied to port 2.

SCHEMATIC



DIMENSIONS

mm [in]



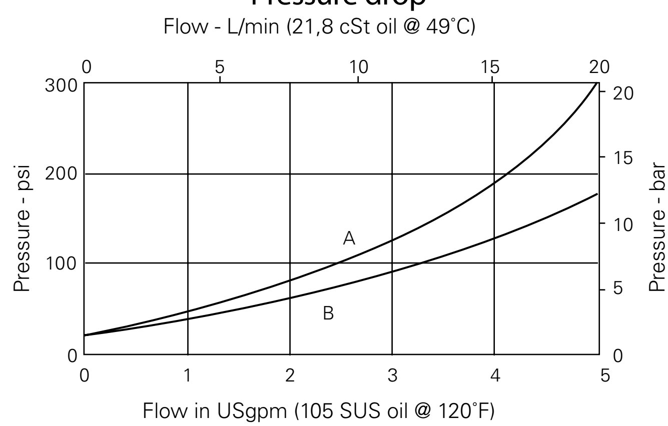
Installation torque
34-41 Nm [25-30 ft. lbs]

PERFORMANCE DATA

Rated pressure	**240 bar [3500 psi]**
Rated flow	**19 l/min [5 US gpm]**
Weight	0.08 kg [0.18 lb]
Pilot Ratio	3:1
Leakage Ports 2 to 3 and 3 to 2: Ports 4 to 3 and 1 to 2:	 140 cc/min. [8.5 in^3/min.] @ 240 bar [3500 psi] 5 drops/min. @ 240 bar [3500 psi]
Cavity	SDC08-4

PERFORMANCE CURVES

Pressure drop



A-Port 2 to Port 1 • **B**-Port 3 to Port 4

MODEL CODE

DPC2 - 8 - U - A - 25 - A - 0

Seal Option
U-Urethane

Pilot Leakage
A-Standard

Crack Pressure

Code	Bar	Psi
25	1.7	[25]

Housing Material
Omit-No Housing
A-Aluminum
S-Steel

Housing

Code	Ports	Housing Model Code Aluminum heavy duty	 Steel heavy duty
0	No Housing		
2G	1/4" BSP	02-160747	02-160753
3G	3/8" BSP	02-160748	02-160754
4T	#4 SAE	02-160749	02-160751
6T	#6 SAE	02-160750	02-160752

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Check Valves
4CKKT50

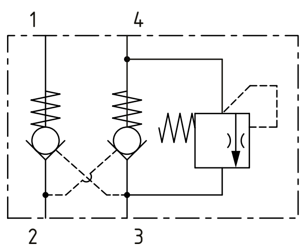
Dual Pilot Operated Check Valve, with Thermal Relief

300 bar [4300 psi] • 25 l/min [7 US gpm]

DESCRIPTION AND OPERATION

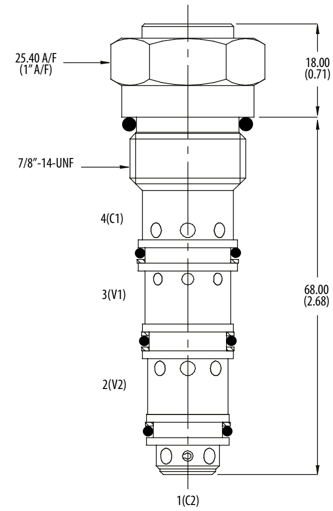
This is a dual pilot operated check valve where free flow takes place from port 2 to 1 and port 3 to 4. Flow is blocked from port 1 to 2 until pressure is applied to port 3 and blocked from port 4 to 3 until pressure is applied to port 2. This valve has the addition of a thermal relief valve that will open from port 4 to 3 if the pressure exceeds the setting.

SCHEMATIC



DIMENSIONS

mm [in]



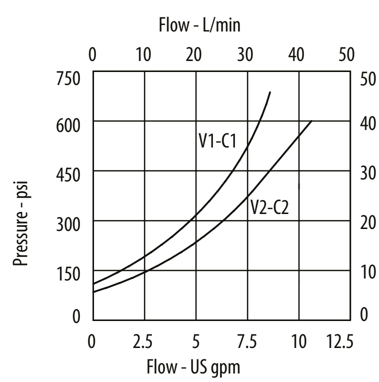
Installation torque
30 Nm [22 ft. lbs]

PERFORMANCE DATA

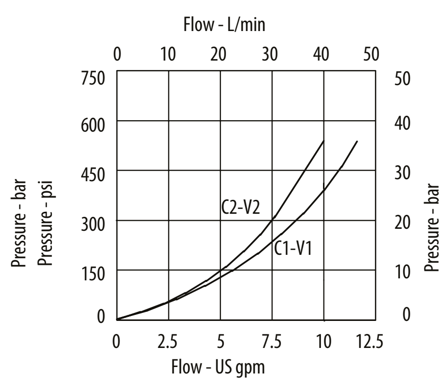
Rated pressure	**300 bar [4300 psi]**
Rated flow	**25 l/min [7 US gpm]**
Weight	0.08 kg [0.18 lb]
Pilot Ratio	3:1
Leakage	C1-V1 1.0 ml/min nominal [15 drops/min] C2-V2 0.3 ml/min nominal [5 drops/min]
Cavity	A12744

PERFORMANCE CURVES

Pressure drop



Free flow



Piloted open

MODEL CODE

4CKKT50 - 3W - 3 - S - 3 - 28

Basic Code

4CKKT50-No Housing

4CKKT55-Cartridges and Dual Housing

Housing

Code	Ports	Housing Model Code
		Aluminium dual
Omit	No Housing	
3W	3/8" BSP	B19240
6T	3/8" SAE	B19241
4W	1/2" BSP	B19228
8T	1/2" SAE	B19229

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Pilot Ratio

3-3:1

Seal Option

Code	Seal kit
S-Nitrile	SK1120
SV-Viton	SK1120V

Pilot Seal Option

3 - Seals

Pressure Setting

Code	Bar	Psi
24	240	[3500]
28	280	[4000]
35	350	[5000]

Check Valves
CP410-1

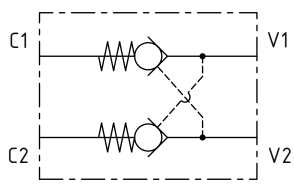
Dual Pilot Operated Check Valves, Line Mounted

210 bar [3000 psi] • 80 l/min [21 US gpm]

DESCRIPTION AND OPERATION

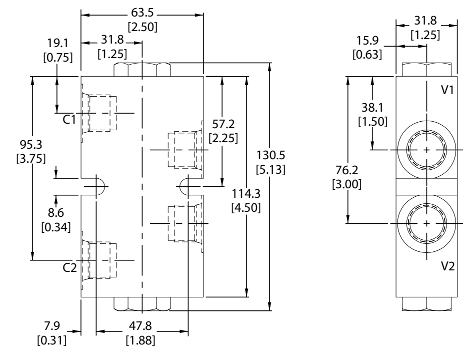
This is a line mounted, dual pilot operated check valve, which uses two CV10-NP check valves. Free flow takes place from ports V1 to C1 and ports V2 to C2. Flow is blocked from port C1 to V1 until pressure is applied to port V2 and blocked from port C2 to V2 until pressure is applied to port V1.

SCHEMATIC



DIMENSIONS

mm [in]



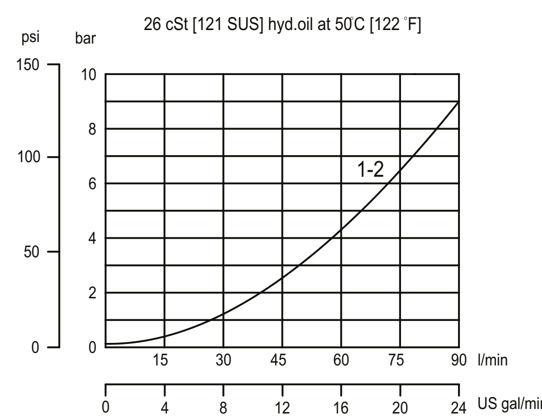
PERFORMANCE DATA

Rated pressure	**210 bar [3000 psi]**
Rated flow at 7 bar [100 psi]	**80 l/min [21 US gpm]**
Leakage	6 drops/min @ rated pressure
Weight	0.67 kg [1.48 lb]
Pilot Ratio	4:1

Note: A piston seal requires a 4.5 bar [65 psi] or greater return spring.

PERFORMANCE CURVES

Pressure drop



MODEL CODE

CP410 - 1 - B - 8S - 0 - 065

Seal Option

Code	Seal kit	W/Pilot Seal Option
B-Buna-N	120072	120176
V-Viton	120161	120177

Crack Pressure

Code	Bar	Psi
065	4.5	[65]

Housing

Code	Ports	Housing Model Code
6S	Al, #6 SAE	220099
8S	Al, #8 SAE	220100
3B	Al, 3/8 BSP	221794
4B	Al, 1/2 BSP	221652

*Aluminum bodies are to be used for pressures less than 210 bar [3000 psi]
* Additional housings available

Pilot Seal Option

0 - No seals
S - Seals