

Cartridge Valves Technical Information

Check Valves

Quick Reference

Cartridge	Model No.	Cavity	Description	Flow*	Pressure	Page
	CV04-NB	CP04-2	Check Valve, Ball Type, Normal Direction	3 l/min [1 US gal/min]	207 bar [3000 psi]	02.6
	CV08-NB	SDC08-2		30 l/min [8 US gal/min]	310 bar [4500 psi]	02.7
	CV10-NB	SDC10-2		83 l/min [22 US gal/min]	207 bar [3000 psi]	02.8

Cartridge	Model No.	Cavity	Description	Flow*	Pressure	Page
	CV08-NP	SDC08-2	Check Valve, Poppet Type, Normal Direction	30 l/min [8 US gal/min]	310 bar [4500 psi]	02.9
	CV10-NP	SDC10-2		85 l/min [22 US gal/min]	300 bar [4350 psi]	02.10
	CP100-3	SDC10-2		115 l/min [30 US gal/min]	350 bar [5000 psi]	02.11
	CP102-1	SDC16-2		210 l/min [55 US gal/min]	210 bar [3000 psi]	02.12
	CP103-1	SDC20-2		380 l/min [100 US gal/min]	210 bar [3000 psi]	02.13

Cartridge	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP104-2	CP04-2	Check Valve, Reverse Direction	3 l/min [1 US gal/min]	210 bar [3000 psi]	02.14

Check valves
Quick reference

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

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Quick Reference

Cartridge	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP108-2	SDC08-2	Check Valve, Reverse Direction	20 l/min [5 US gal/min]	350 bar [5000 psi]	02.15
	CP100-2	SDC10-2		50 l/min [13 US gal/min]	350 bar [5000 psi]	02.16
	CP101-2	CP12-2		75 l/min [20 US gal/min]	350 bar [5000 psi]	02.17
	CP102-2	SDC16-2		150 l/min [40 US gal/min]	350 bar [5000 psi]	02.18
	CP103-2	SDC20-2		265 l/min [70 US gal/min]	350 bar [5000 psi]	02.19

Slip-in	Model No.	Cavity	Description	Flow*	Pressure	Page
	3C50-01	FC-144	Check Valve, Slip-in	70 l/min [19 US gal/min]	210 bar [3000 psi]	02.20
	3C60-01	FC-144		70 l/min [19 US gal/min]	140 bar [2000 psi]	02.21
	3C80-01	FC-304		190 l/min [50 US gal/min]	140 210 bar [2000 psi]	02.22
	3C90-01	FC-304		190 l/min [50 US gal/min]	210 bar [3000 psi]	02.23


Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	3C11-01	none	Check Valve, In-line, Female Port	20 l/min [5 US gal/min]	350 bar [5000 psi]	02.24
	RS 06	none		30 l/min [8 US gal/min]	350 bar [5000 psi]	02.25
	3C12-01	none		35 l/min [9 US gal/min]	350 bar [5000 psi]	02.26
	RS 10	none		60 l/min [16 US gal/min]	350 bar [5000 psi]	02.27
	3C13-01	none		70 l/min [19 US gal/min]	350 bar [5000 psi]	02.28
	3C14-01	none		95 l/min [25 US gal/min]	350 bar [5000 psi]	02.29
	RS 13	none		100 l/min [26 US gal/min]	315 bar [4500 psi]	02.30
	RS 19	none		140 l/min [37 US gal/min]	280 bar [4000 psi]	02.31
	3C15-01	none		150 l/min [40 US gal/min]	350 bar [5000 psi]	02.32
	RS 25	none		200 l/min [53 US gal/min]	245 bar [3500 psi]	02.33
	3C16-01	none		230 l/min [61 US gal/min]	350 bar [5000 psi]	02.34

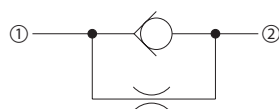
* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

Cartridge Valves Technical Information

Check Valves

Quick Reference

Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	3CM11-01	none	Check Valve, In-line, Male Port	20 l/min [5 US gal/min]	350 bar [5000 psi]	02.35
	3CM12-01	none		35 l/min [9 US gal/min]	350 bar [5000 psi]	02.36
	3CM13-01	none		70 l/min [19 US gal/min]	350 bar [5000 psi]	02.37
	3CM14-01	none		95 l/min [25 US gal/min]	350 bar [5000 psi]	02.38
	3CM15-01	none		150 l/min [40 US gal/min]	350 bar [5000 psi]	02.39
	3CM16-01	none		230 l/min [61 US gal/min]	350 bar [5000 psi]	02.40

Symbol	Model No.	Cavity	Description	Flow*	Pressure	Page
	2RN11-01	none	Check Valve, In-line, Female Port, with Orifice	20 l/min [5 US gal/min]	350 bar [5000 psi]	02.41

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

BASIC OPERATION

Check valves allow free flow in one direction and block flow in the opposite direction.

Check valves

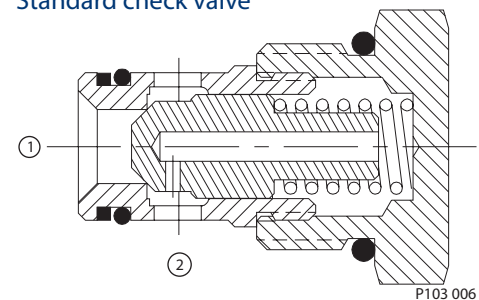


Check valves
 Application notes

STANDARD CHECK VALVES

Standard check valves, suitable for most applications, have fully guided poppets which always block flow from 2 to 1. They are spring biased closed until sufficient pressure is applied at 1 to open flow to 2. This pressure is commonly called the crack pressure. Several crack pressures are available for each model. Consult check valves section for details. This valve is also available with an integral orifice for free flow in one direction and controlled flow (speed) in the opposite direction.

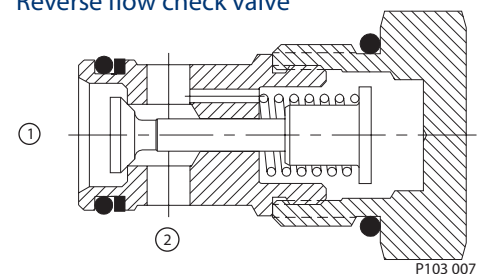
Standard check valve



REVERSE FLOW CHECK VALVES

Reverse flow check valves, useful for higher pressure applications or where housing or size constraints require this flow path are also available. These valves have guided poppets that block flow from 1 to 2 and are spring biased closed until sufficient pressure is applied at 2 to open flow to 1.

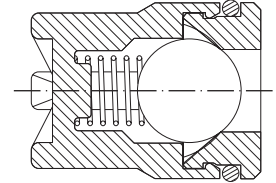
Reverse flow check valve



SLIP-IN CHECK VALVES

Slip-in style check valves are cartridges that drop into small cavities and are retained by SAE plugs or by other cartridge valves. They are ideal for use in manifolds where space savings is critical. Versions of these valves with Delrin® seats are also available for applications requiring extremely low leakage.

Slip-in check valve

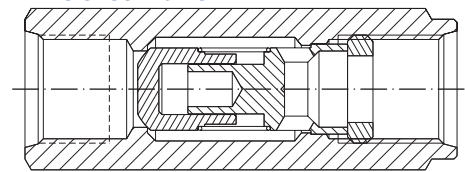


P103 008

INLINE CHECK VALVES

Also available are in-line check valves, which can be used to simplify machine plumbing.

Inline check valve



P103 009

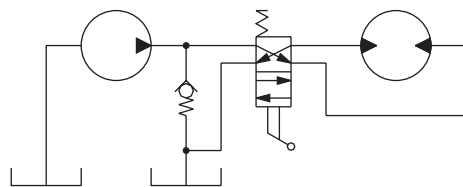
APPLICATIONS

Check valves have many common

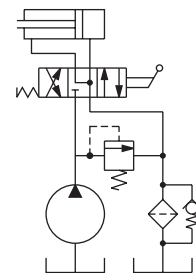
applications including:

- Low pressure relief valve
- Bypass for filter elements
- Logic for load-sensing circuits
- Anti-cavitation or make-up
- Load holding (refer to Motion Control Valves for more information)

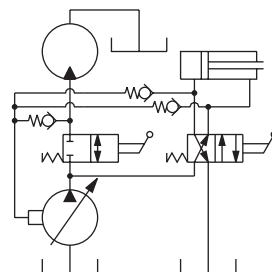
Low pressure relief valve



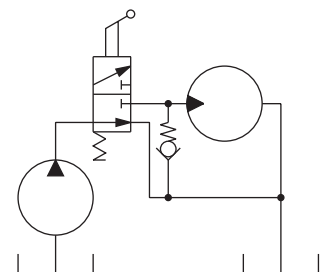
Bypass for filter elements



Logic for load-sensing circuits



Anti-cavitation



P103 010

Cartridge Valves Technical Information

Check Valves

Cartridge

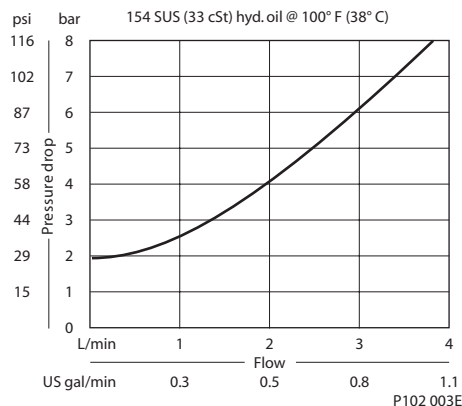
CV04-NB

OPERATION

This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



P102 001E

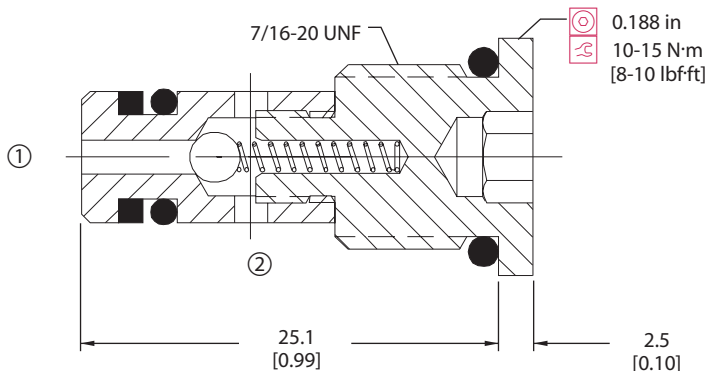
Specifications

Rated pressure	207 bar [3000 psi]
Rated flow at 7 bar [100 psi]	3 l/min [1 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.01 kg [0.03 lb]
Cavity	CP04-2

DIMENSIONS

mm [in]

Cross-sectional view



P102 000E

ORDERING INFORMATION

CV04-NB-0.3-B-00

Crack Pressure
 0.3 = 0.3 bar [5 psi]
 1.7 = 1.7 bar [25 psi]

Housing and ports
 00 = NoHousing
 4S = Al, #4 SAE
 2B = Al, 1/4 BSP

Housing Part #
 No Housing
 CP04-2-4S
 CP04-2-2B

Seals
 B = Buna-N
 V = Viton

Seal Kit
 120077
 11019554

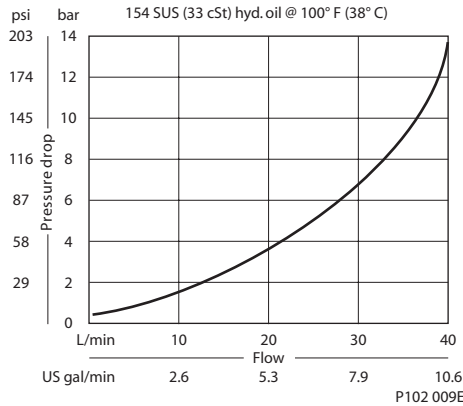
P108 388E

OPERATION

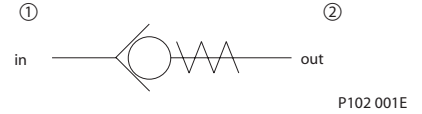
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



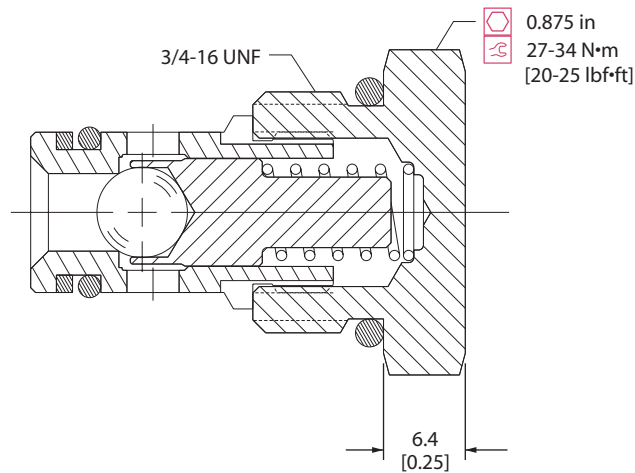
Specifications

Rated pressure	310 bar [4500 psi]
Rated flow at 7 bar [100 psi]	30 l/min [8 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.05 kg [0.11 lb]
Cavity	SDC08-2

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CV08-NB-0.3-B-00

Crack Pressure	Housing and ports	Housing Part #
0.3 = 0.3 bar [5 psi]	00 = No Housing	No Housing
0.7 = 0.7 bar [10 psi]	DG-2B = Al, 1/4 BSP	SDC08-2-DG-2B
1 = 1.0 bar [15 psi]	DG-3B = Al, 3/8 BSP	SDC08-2-DG-3B
2 = 2.0 bar [30 psi]	4S = Al, #4 SAE	CP08-2-4S
5 = 5.0 bar [65 psi]	6S = Al, #6 SAE	CP08-2-6S
7 = 7.0 bar [100 psi]	Seals	Seal Kit
	B = Buna-N	120221
	V = Viton	120222

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Cartridge Valves Technical Information

Check Valves

Cartridge

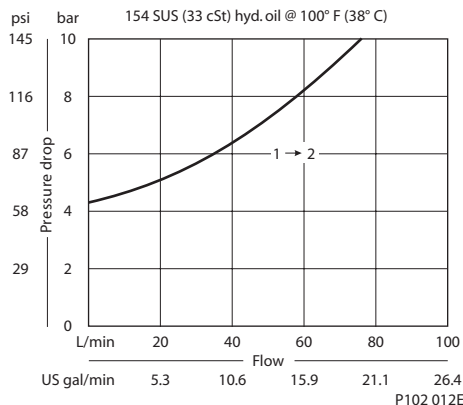
CV10-NB

OPERATION

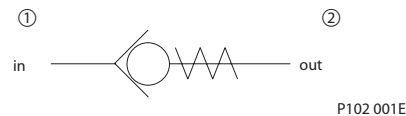
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



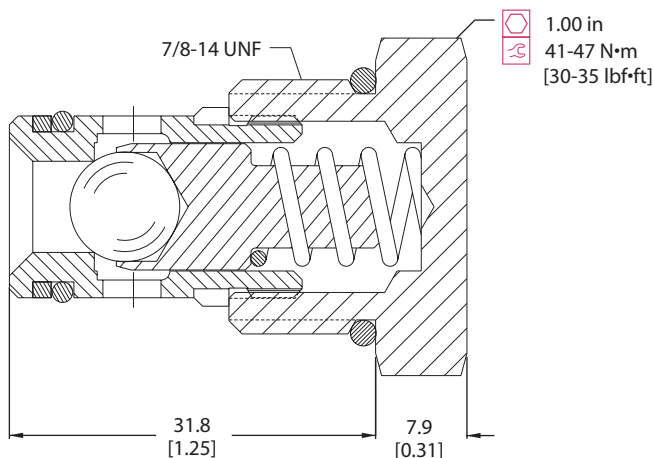
Specifications

Rated pressure	207 bar [3000 psi]
Rated flow at 7 bar [100 psi]	83 l/min [22 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.08 kg [0.17 lb]
Cavity	SDC10-2

DIMENSIONS

mm [in]

Cross-sectional view



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ORDERING INFORMATION

CV10-NB-0.3-B-00

Crack Pressure

- 0.3 = 0.3 bar [5 psi]
- 1 = 1.0 bar [15 psi]
- 2 = 2.0 bar [30 psi]
- 5 = 5.0 bar [65 psi]
- 7 = 7.0 bar [100 psi]
- 10 = 10.3 bar [150 psi]

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
- SDC10-2-DG-3B
- SDC10-2-DG-4B
- CP10-2-6S
- CP10-2-8S

Seals

- B = Buna-N
- V = Viton

Seal Kit

- 120015
- 120016

P108 390E

Cartridge Valves Technical Information

Check Valves

Cartridge

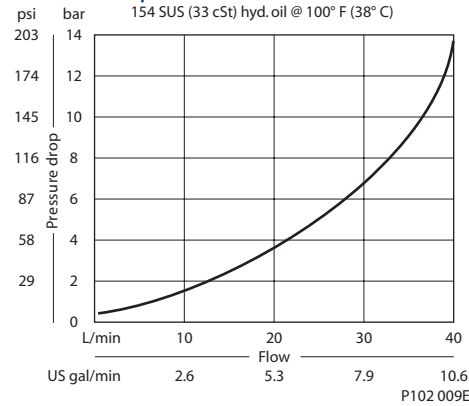
CV08-NP

OPERATION

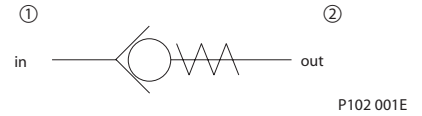
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



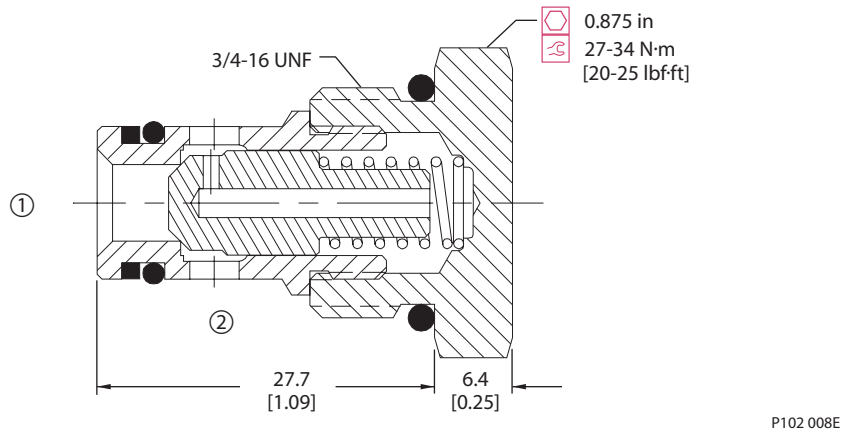
Specifications

Rated pressure	310 bar [4500 psi]
Rated flow at 7 bar [100 psi]	30 l/min [8 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.05 kg [0.11 lb]
Cavity	SDC08-2

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CV08-NP-0.3-B-4S

Crack Pressure

- 0.3 = 0.3 bar [5 psi]
- 0.7 = 0.7 bar [10 psi]
- 1 = 1.0 bar [15 psi]
- 2 = 2.0 bar [30 psi]
- 5 = 5.0 bar [65 psi]
- 7 = 7.0 bar [100 psi]

Housing and ports

- 00 = No Housing
- DG2B = Al, 1/4 BSP
- DG3B = Al, 3/8 BSP
- 4S = Al, #4 SAE
- 6S = Al, #6 SAE
- Other housings available

Housing P/N

- No Housing
- SDC08-2-DG-2B
- SDC08-2-DG-3B
- CP08-2-4S
- CP08-2-6S

Seals

- B = Buna N 120221
- V = Viton 120222

Seal kit

- B = Buna N 120221
- V = Viton 120222

P103 651E

Cartridge Valves Technical Information

Check Valves

Cartridge

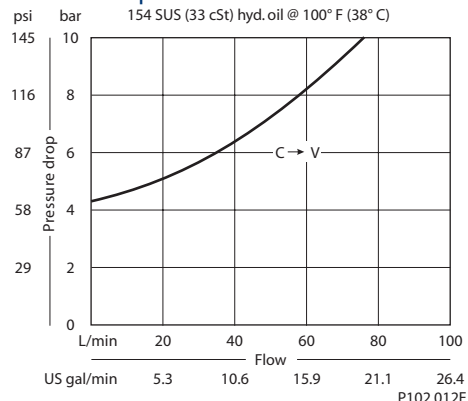
CV10-NP

OPERATION

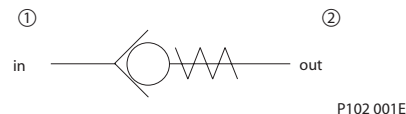
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



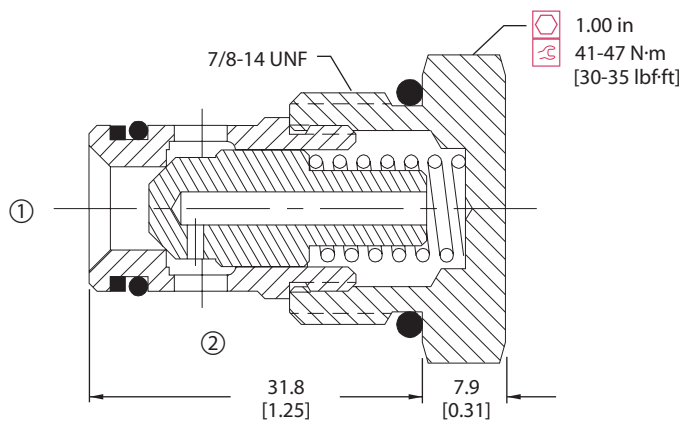
Specifications

Rated pressure	300 bar [4350 psi]
Rated flow at 7 bar [100 psi]	85 l/min [22 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.08 kg [0.18 lb]
Cavity	SDC10-2

DIMENSIONS

mm [in]

Cross-sectional view



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ORDERING INFORMATION

CV10-NP-5-B-6S

Crack Pressure

- 0.3 = 0.3 bar [5 psi]
- 1 = 1.0 bar [15 psi]
- 2 = 2.0 bar [30 psi]
- 5 = 5.0 bar [65 psi]
- 7 = 7.0 bar [100 psi]
- 10 = 10 bar [145 psi]

Housing and ports

- 00 = 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

Seals

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

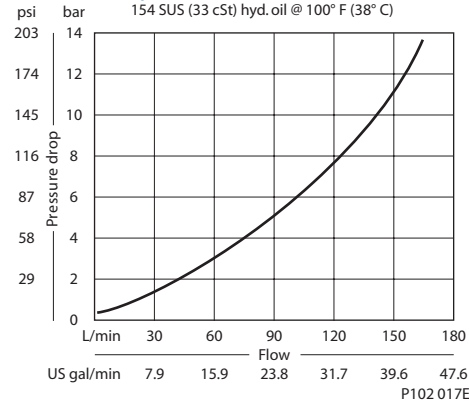
P103 650E

OPERATION

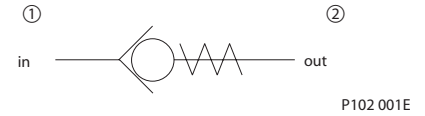
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



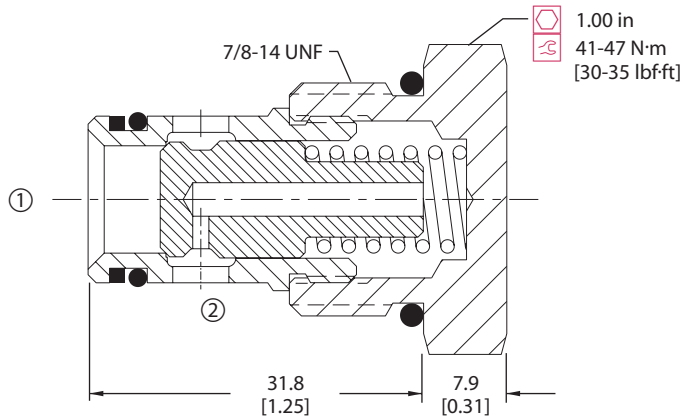
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	115 l/min [30 US gal/min]
Leakage	6 drops/min @ 207 bar [3000 psi]
Weight	0.08 kg [0.17 lb]
Cavity	SDC10-2

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP100-3-B-8S-005

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

Crack pressure
 005 = 0.34 bar [5 psi]
 015 = 1.0 bar [15 psi]
 040 = 2.8 bar [40 psi]
 065 = 4.5 bar [65 psi]

Seals
 B = Buna-N
 V = Viton

Seal kit
 120015
 120016

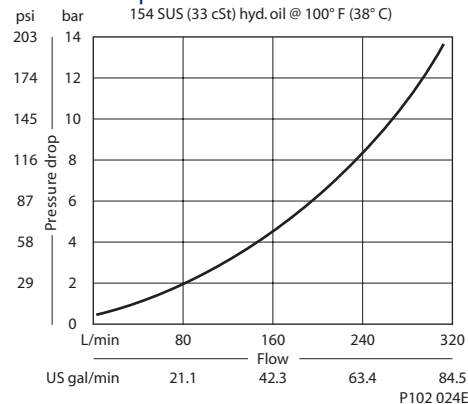
P102 171E

OPERATION

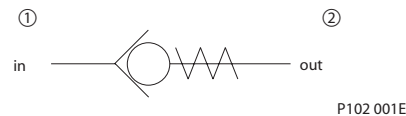
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



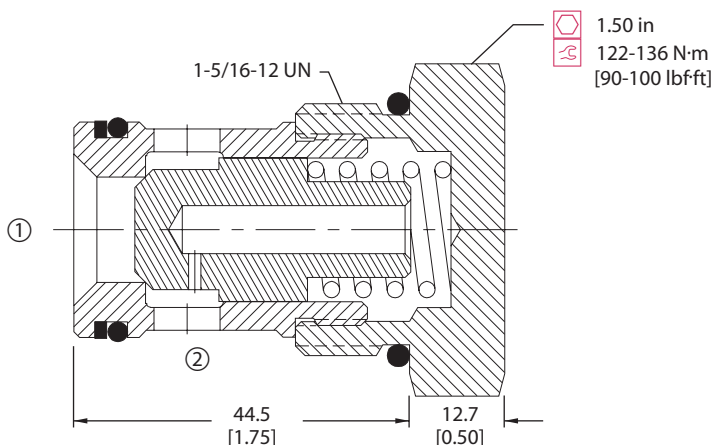
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	210 l/min [55 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.26 kg [0.57 lb]
Cavity	SDC16-2

DIMENSIONS

mm [in]

Cross-sectional view



P102 023E

ORDERING INFORMATION

CP102-1-B-16S-005

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

Seals
 B = Buna-N
 V = Viton

Seal kit
 120019
 120020

Housing P/N
 No Housing
 SDC16-2-DG-6B
 SDC16-2-DG-8B
 CP16-2-12S
 CP16-2-16S

Crack pressure

005 = 0.34 bar [5 psi]
 015 = 1.0 bar [15 psi]
 030 = 2.1 bar [30 psi]
 040 = 2.8 bar [40 psi]
 065 = 4.5 bar [65 psi]
 100 = 6.9 bar [100 psi]

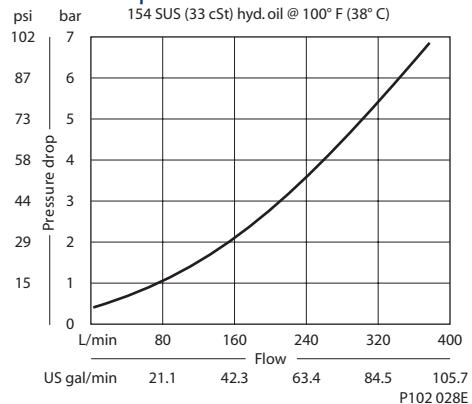
P102 186E

OPERATION

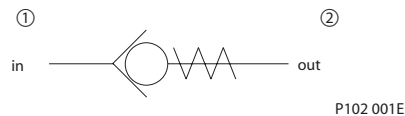
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



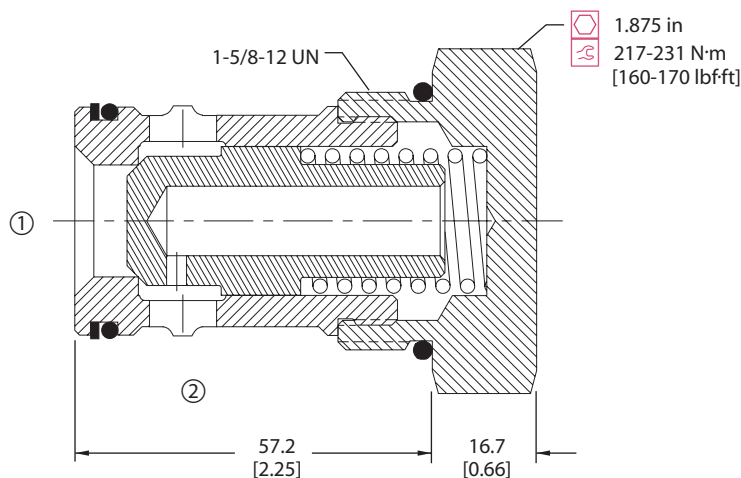
Specifications

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	0.54 kg [1.20 lb]
Cavity	SDC20-2

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP103-1-B-20S-005

Housing and ports	Housing P/N	Crack pressure
0 = No Housing	No Housing	005 = 0.34 bar [5 psi]
8B = Al, 1 BSP	CP20-2-8B	015 = 1.0 bar [15 psi]
10B = Al, 1-1/4 BSP	CP20-2-10B	065 = 4.5 bar [65 psi]
16S = Al, #16 SAE	CP20-2-16S	
20S = Al, #20 SAE	CP20-2-20S	
Other housings available		
Seals	Seal kit	
B = Buna-N	120011	
V = Viton	120012	

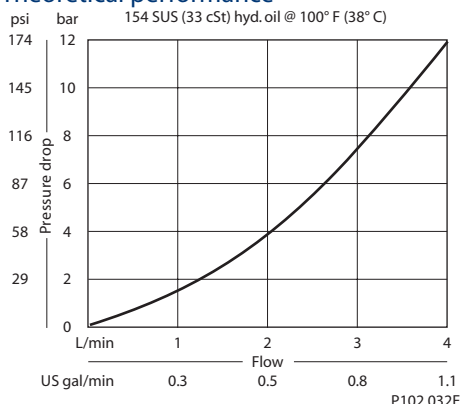
P102 194E

OPERATION

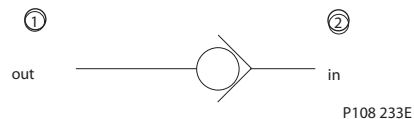
This valve allows free flow from 2 to 1 and blocks flow from 1 to 2.

SPECIFICATIONS

Theoretical performance



Schematic



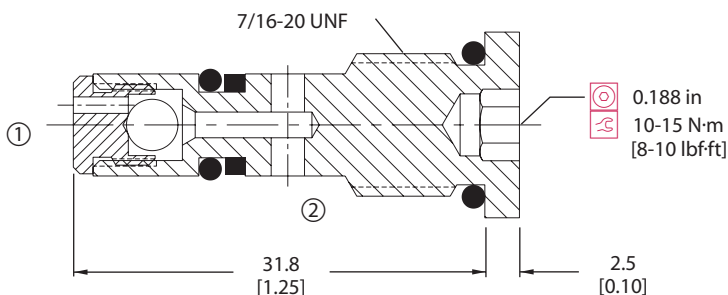
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	3 l/min [1 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.01 kg [0.03 lb]
Cavity	CP04-2

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP104-2-B-4S

Housing and ports

- 0 = No Housing
- 2B = Al, 1/4 BSP
- 4S = Al, #4 SAE
- Other housings available

Housing P/N

- No Housing
- CP04-3-2B
- CP04-2-4S

Seals

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

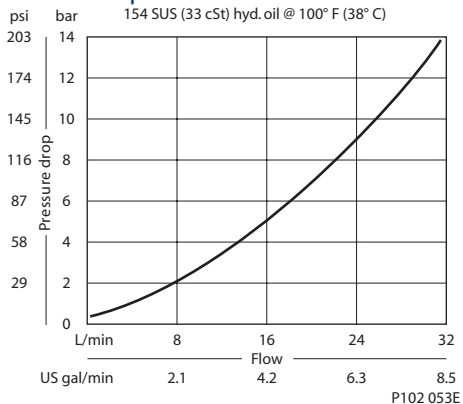
P102 147

OPERATION

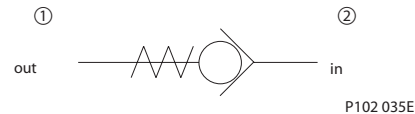
This valve allows free flow from 2 to 1 and blocks flow from 1 to 2.

SPECIFICATIONS

Theoretical performance



Schematic



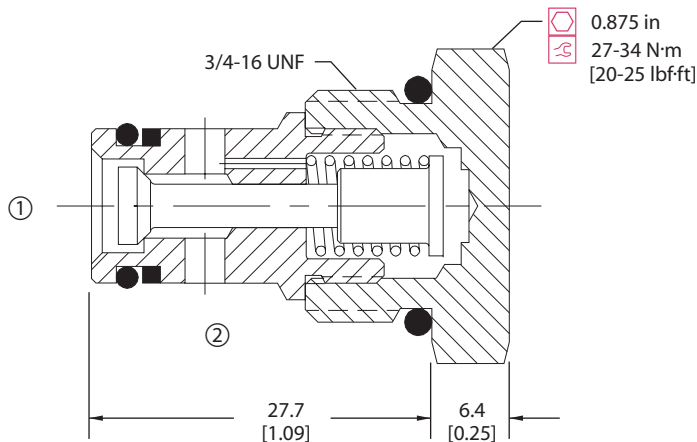
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	20 l/min [5 US gal/min]
Leakage	6 drops/min @ 207 bar [3000 psi]
Weight	0.05 kg [0.11 lb]
Cavity	SDC08-2

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP108-2-B-6S-005

Housing and ports

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

Housing P/N

- No Housing
- SDC08-2-DG-2B
- SDC08-2-DG-3B
- CP8-2-4S
- CP8-2-6S

Crack pressure

- 005 = 0.34 bar [5 psi]
- 015 = 1.0 bar [15 psi]
- 030 = 2.1 bar [30 psi]
- 050 = 3.4 bar [50 psi]
- 065 = 4.5 bar [65 psi]
- 100 = 6.9 bar [100 psi]

Seals

- B = Buna-N
- V = Viton

- Seal kit
- 120221
- 120222

P102 156E

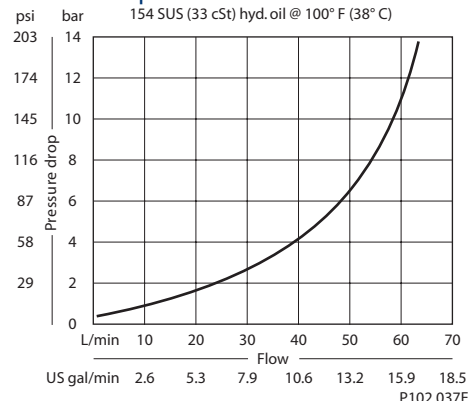
Check valves
CP108-2

OPERATION

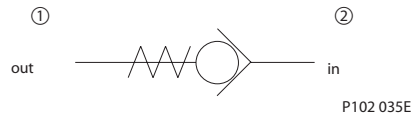
This valve allows free flow from 2 to 1 and blocks flow from 1 to 2.

SPECIFICATIONS

Theoretical performance



Schematic



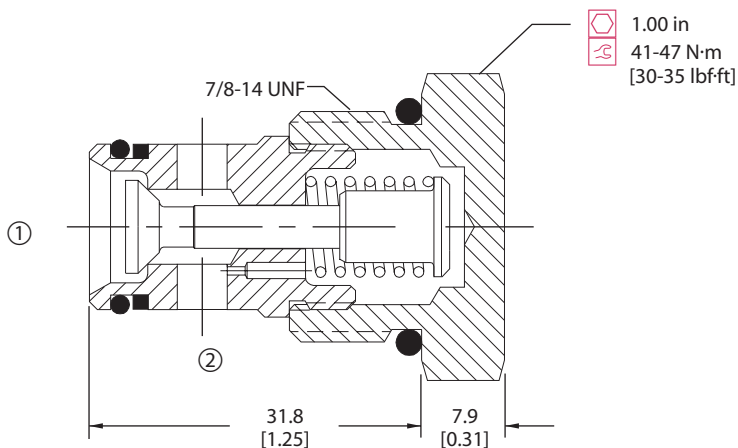
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	50 l/min [13 US gal/min]
Leakage	6 drops/min @ 207 bar [3000 psi]
Weight	0.08 kg [0.17 lb]
Cavity	SDC10-2

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP100-2-B-8S-005

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

Crack pressure

- 005 = 0.34 bar [5 psi]
- 015 = 1.0 bar [15 psi]
- 030 = 2.1 bar [30 psi]
- 050 = 3.4 bar [50 psi]
- 065 = 4.5 bar [65 psi]
- 100 = 6.9 bar [100 psi]

Seals

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

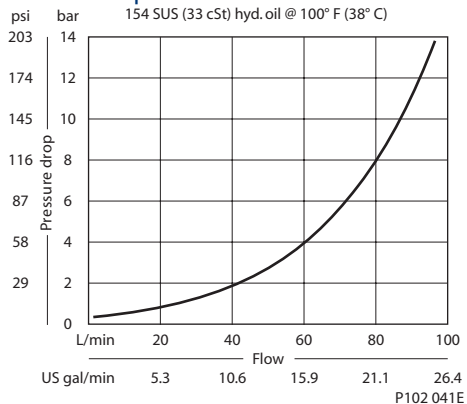
P102 166E

OPERATION

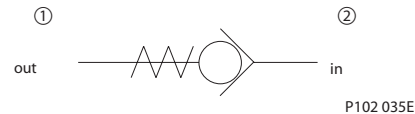
This valve allows free flow from 2 to 1 and blocks flow from 1 to 2.

SPECIFICATIONS

Theoretical performance



Schematic



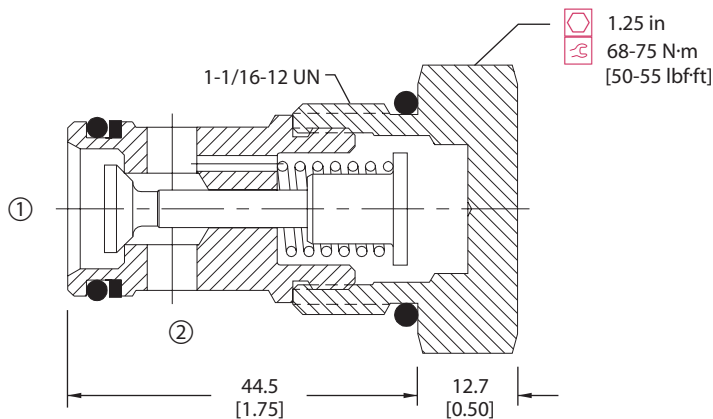
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	75 l/min [20 US gal/min]
Leakage	6 drops/min @ 207 bar [3000 psi]
Weight	0.18 kg [0.40 lb]
Cavity	CP12-2

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP101-2-B-12S-005

Housing and ports

- 0 = No Housing
- 4B = Al, 1/2 BSP
- 6B = Al, 3/4 BSP
- 10S = Al, #10 SAE
- 12S = Al, #12 SAE
- Other housings available

Housing P/N

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

Crack pressure

- 005 = 0.34 bar [5 psi]
- 015 = 1.0 bar [15 psi]
- 030 = 2.1 bar [30 psi]
- 065 = 4.5 bar [65 psi]
- 100 = 6.9 bar [100 psi]

Seals

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

P102 181E

Cartridge Valves Technical Information

Check Valves

Cartridge

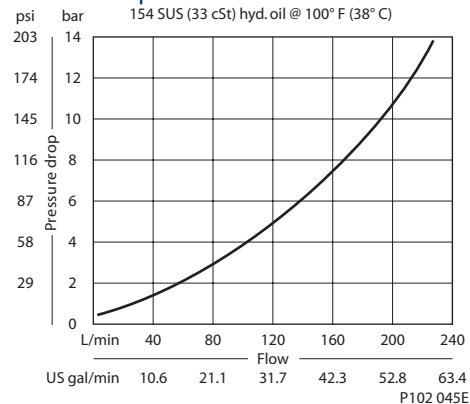
CP102-2

OPERATION

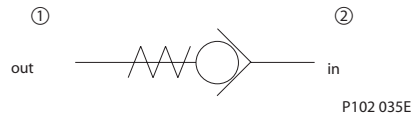
This valve allows free flow from 2 to 1 and blocks flow from 1 to 2.

SPECIFICATIONS

Theoretical performance



Schematic



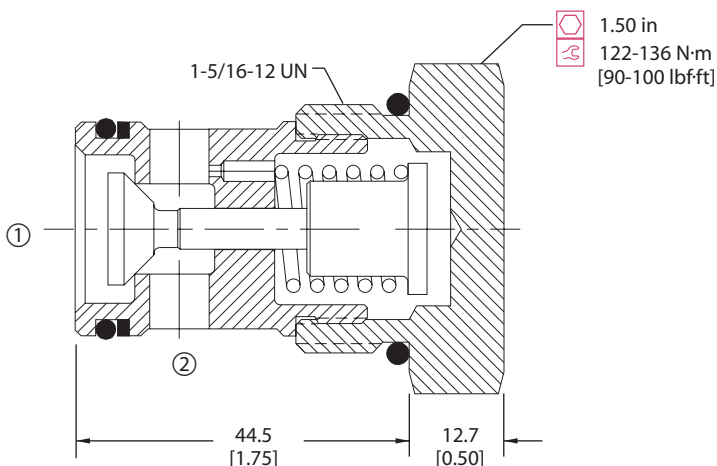
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	150 l/min [40 US gal/min]
Leakage	6 drops/min @ 207 bar [3000 psi]
Weight	0.26 kg [0.57 lb]
Cavity	SDC16-2

DIMENSIONS

mm [in]

Cross-sectional view



P102 044E

ORDERING INFORMATION

CP102-2-B-16S-005

Housing and ports

0 = No Housing
 HG-6B = Al, 3/4 BSP
 HG-8B = Al, 1 BSP
 12S = Al, #12 SAE
 16S = Al, #16 SAE
 Other housings available

Housing P/N

No Housing
 SDC16-2-HG-6B
 SDC16-2-HG-8B
 CP16-2-12S
 CP16-2-16S

Crack pressure

005 = 0.34 bar [5 psi]
 015 = 1.0 bar [15 psi]
 030 = 2.1 bar [30 psi]
 050 = 3.4 bar [50 psi]
 065 = 4.5 bar [65 psi]
 100 = 6.9 bar [100 psi]

Seals

B = Buna-N
 V = Viton

Seal kit
 120019
 120020

P102 190E

Cartridge Valves Technical Information

Check Valves

Cartridge

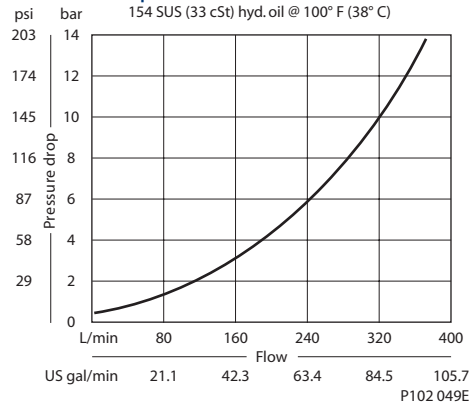
CP103-2

OPERATION

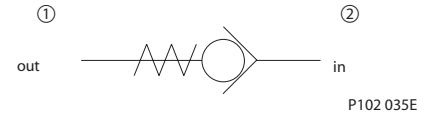
This valve allows free flow from 2 to 1 and blocks flow from 1 to 2.

SPECIFICATIONS

Theoretical performance



Schematic



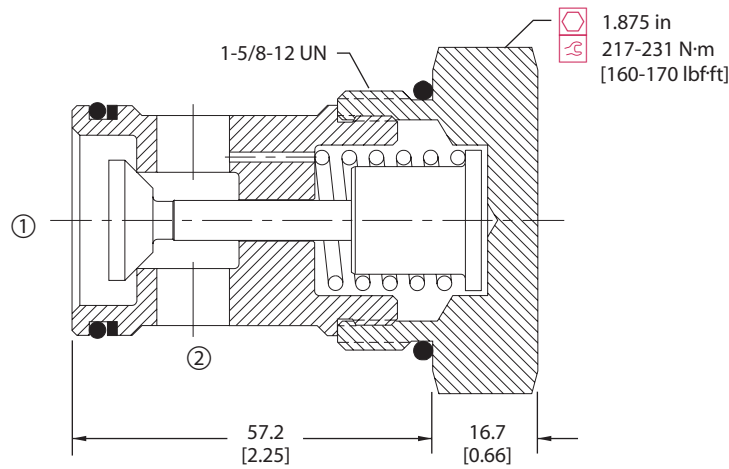
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	265 l/min [70 US gal/min]
Leakage	6 drops/min @ 207 bar [3000 psi]
Weight	0.54 kg [1.20 lb]
Cavity	SDC20-2

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP103-2-B-20S-005

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

Crack pressure

005 = 0.34 bar [5 psi]
 015 = 1.0 bar [15 psi]
 030 = 2.1 bar [30 psi]
 050 = 3.4 bar [50 psi]
 065 = 4.5 bar [65 psi]
 100 = 6.9 bar [100 psi]

Seals

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

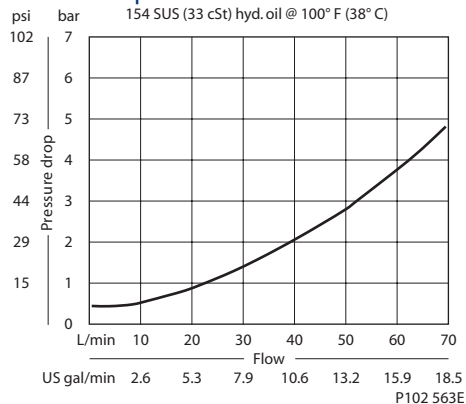
P102 142E

OPERATION

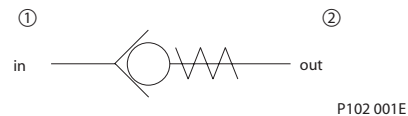
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



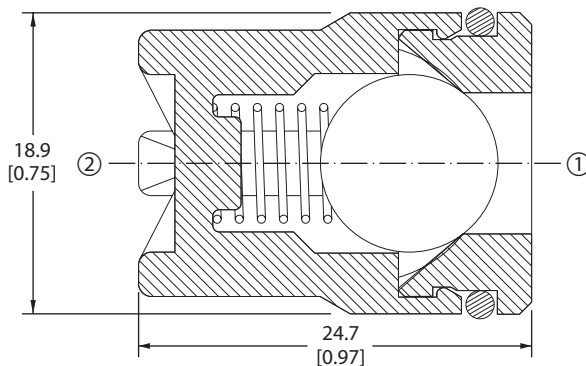
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	70 l/min [19 US gal/min]
Leakage	15 drops/min @ rated pressure
Weight	0.03 kg [0.07 lb]
Cavity	FC-144

DIMENSIONS

mm [in]

Cross-sectional view



P102 550

ORDERING INFORMATION

3C50-01-B-0-005

Crack pressure
 005 = 0.34 bar [5 psi]

Housing and ports
 0 = No Housing

Seals
 B = Buna-N
 V = Viton

Seal kit
 720399
 720420

P102 552E

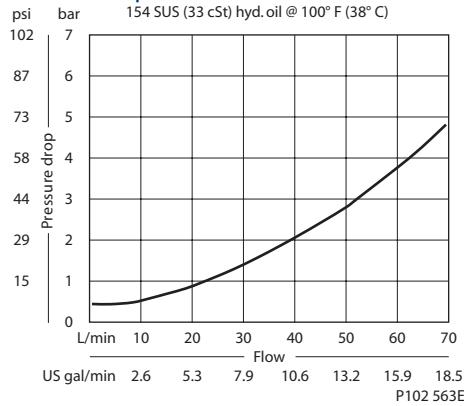
Cartridge Valves Technical Information
 Check Valves
 Slip-in
 3C60-01

OPERATION

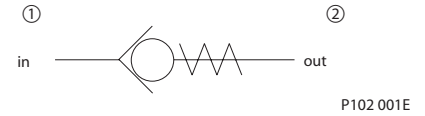
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1. Valve uses a Delrin® seat for low leakage

SPECIFICATIONS

Theoretical performance



Schematic



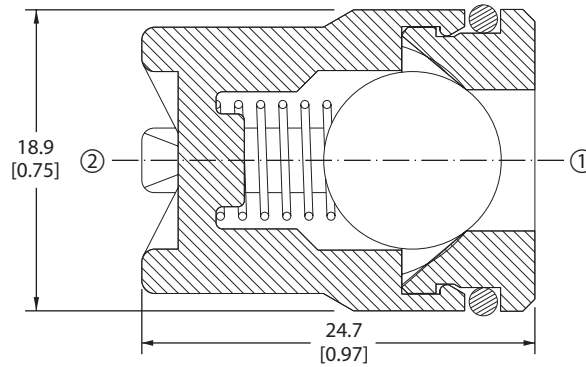
Specifications

Rated pressure	140 bar [2000 psi]
Rated flow at 7 bar [100 psi]	70 l/min [19 US gal/min]
Leakage	6 drops/min @ rated pressure
Weight	0.01 kg [0.02 lb]
Cavity	FC-144

DIMENSIONS

mm [in]

Cross-sectional view



P102 550

ORDERING INFORMATION

3C60-01-B-0-005

Crack pressure
 005 = 0.34 bar [5 psi]

Housing and ports
 0 = No Housing

Seals
 B = Buna-N
 V = Viton

Seal kit
 720399
 720420

P102 551E

Check valves
3C60-01

Cartridge Valves Technical Information

Check Valves

Slip-in

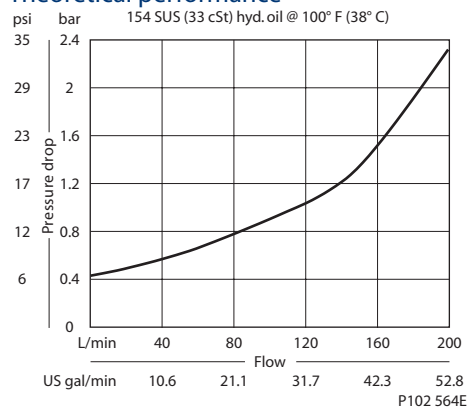
3C80-01

OPERATION

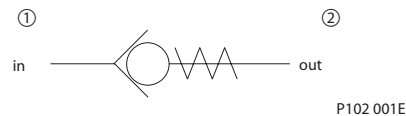
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1. Valve uses a Delrin® seat for low leakage.

SPECIFICATIONS

Theoretical performance



Schematic



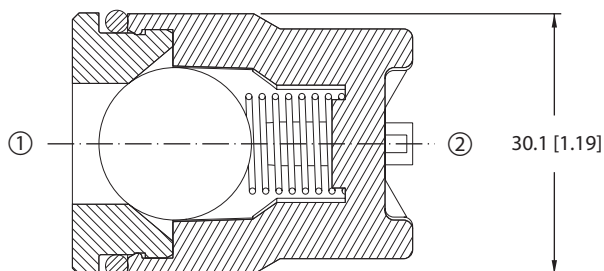
Specifications

Rated pressure	140 bar [2000 psi]
Rated flow at 7 bar [100 psi]	190 l/min [50 US gal/min]
Leakage	6 drops/min @ rated pressure
Weight	0.04 kg [0.09 lb]
Cavity	FC-304

DIMENSIONS

mm [in]

Cross-sectional view



P102 553E

ORDERING INFORMATION

3C80-01-B-0-005

Cracking pressure
 005 = 0.34 bar [5 psi]
 025 = 1.7 bar [25 psi]

Housing and ports
 00 = No Housing

Seals

B = Buna-N	Seal kit 720607
V = Viton	Seal kit 720601

P102 554E

Cartridge Valves Technical Information

Check Valves

Slip-in

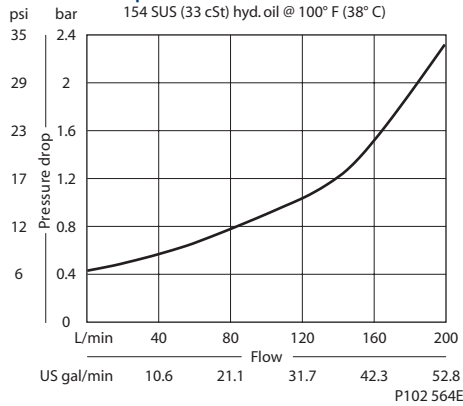
3C90-01

OPERATION

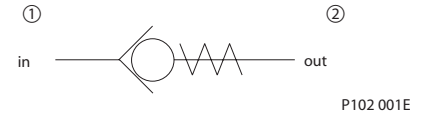
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



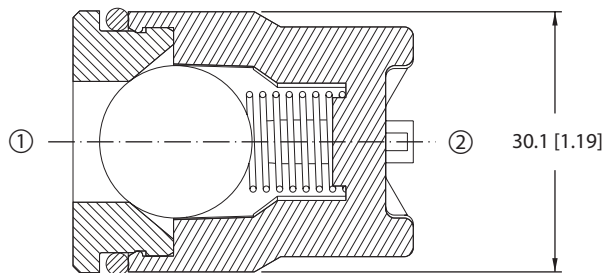
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	190 l/min [50 US gal/min]
Leakage	15 drops/min @ rated pressure
Weight	0.05 kg [0.11 lb]
Cavity	FC-304

DIMENSIONS

mm [in]

Cross-sectional view



P102 553E

ORDERING INFORMATION

3C90-01-B-0-005

Crack pressure
 005 = 0.34 bar [5 psi]

Housing and ports
 0 = No Housing

Seals

B = Buna-N	Seal kit 720607
V = Viton	Seal kit 720601

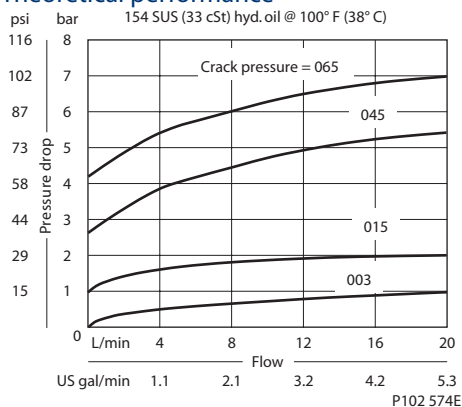
P102 555E

OPERATION

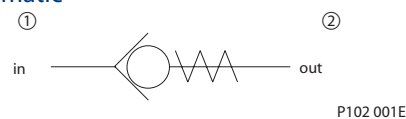
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



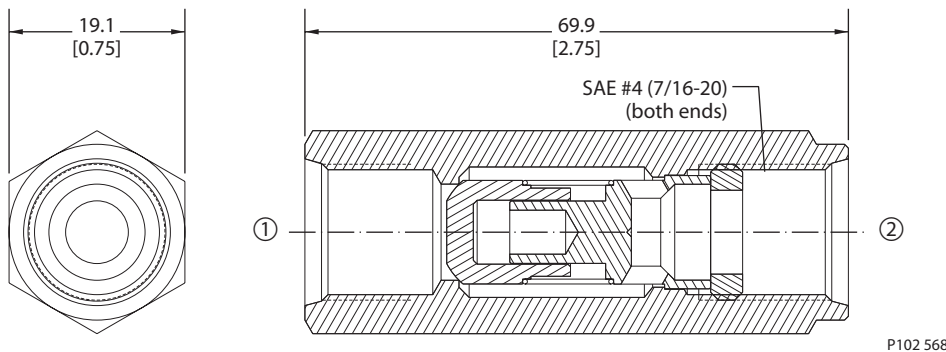
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	20 l/min [5 US gal/min]
Leakage	5 drops/min @ Rated pressure
Weight	0.11 kg [0.24 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

3C11-01-4S-65

Crack pressure
 3 = 0.2 bar [3 psi]
 15 = 1.0 bar [15 psi]
 45 = 3.1 bar [45 psi]
 65 = 4.5 bar [65 psi]

Port sizes
 4S = SAE #4

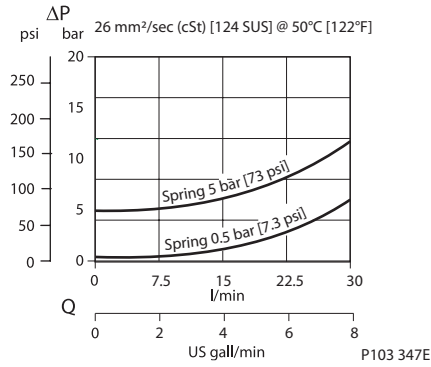
P102 580E

OPERATION

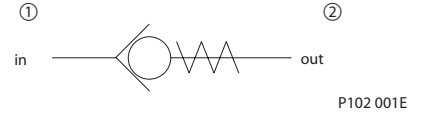
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



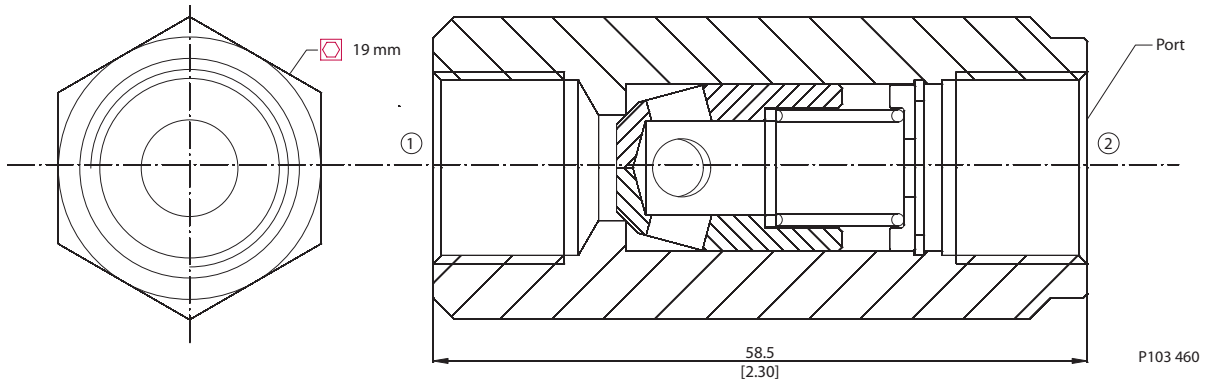
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	30 l/min [8 US gal/min]
Weight	0.08 kg [0.18 lb]
Cavity	none

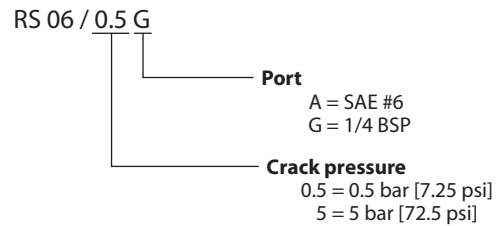
DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION



P103 348E

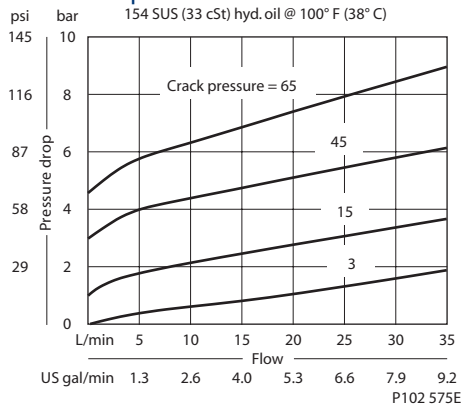
Check valves
RS 06

OPERATION

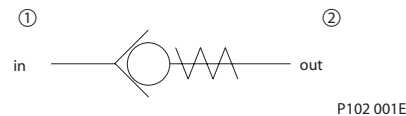
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



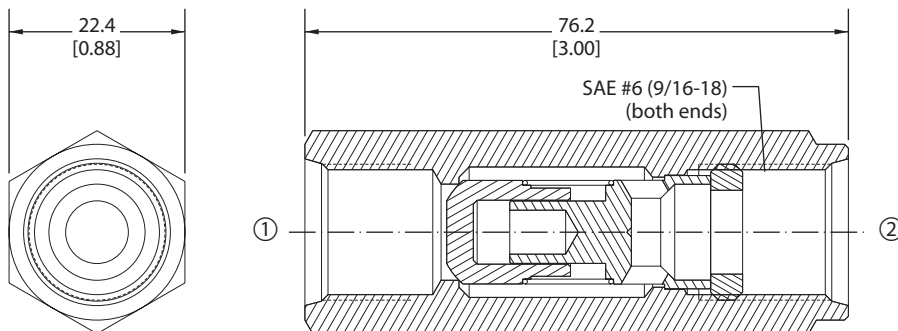
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	35 l/min [9 US gal/min]
Leakage	5 drops/min @ Rated pressure
Weight	0.17 kg [0.37 lb]
Cavity	none

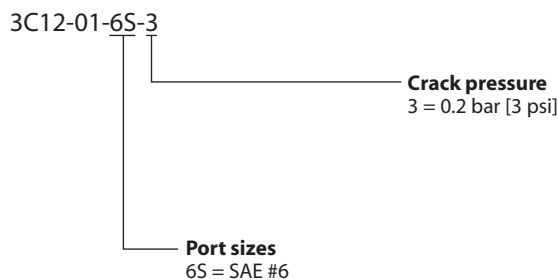
DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION



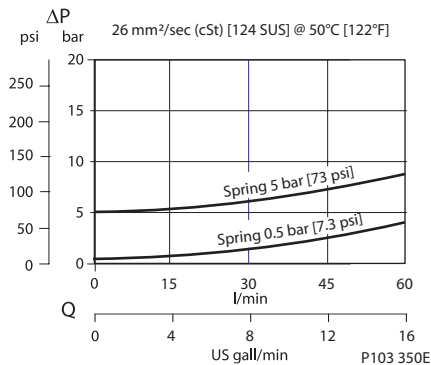
P102 581E

OPERATION

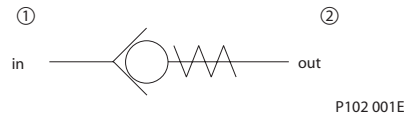
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



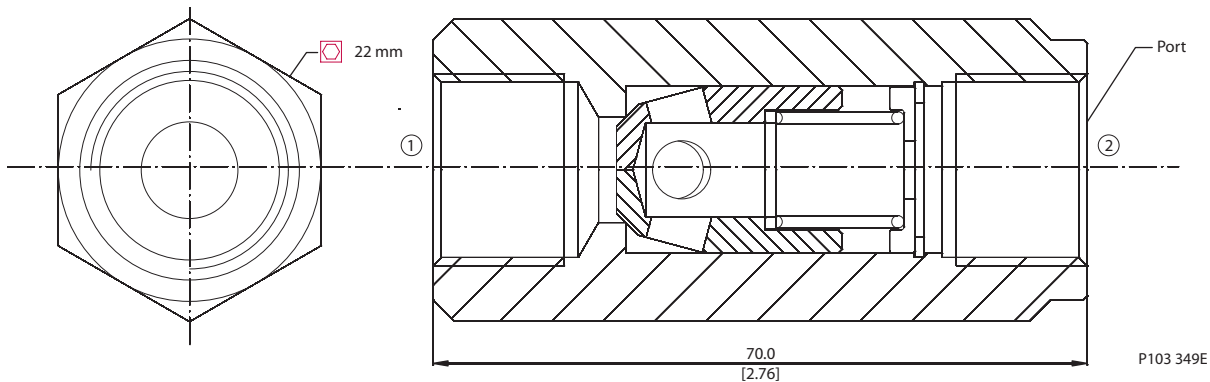
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	60 l/min [16 US gal/min]
Weight	0.13 kg [0.29 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

RS 10 / 5 - G

Port
 G = 3/8 BSP

Crack Pressure
 0.5 = 0.5 bar [7 psi]
 5 = 5 bar [73 psi]

P103 351E

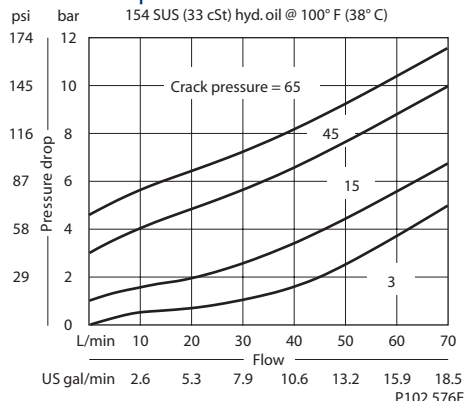
Check valves
RS 10

OPERATION

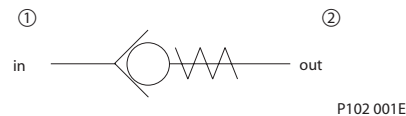
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



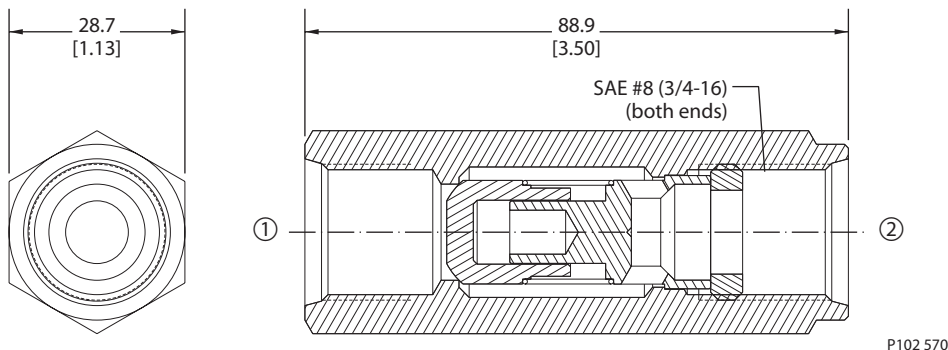
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	70 l/min [19 US gal/min]
Leakage	5 drops/min @ Rated pressure
Weight	0.31 kg [0.68 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

3C13-01-8S-3

Crack pressure
 3 = 0.2 bar [3 psi]
 15 = 1.0 bar [15 psi]
 45 = 3.1 bar [45 psi]
 65 = 4.5 bar [65 psi]

Port sizes
 8S = SAE #8

P102 582E

Check valves
 3C13-01

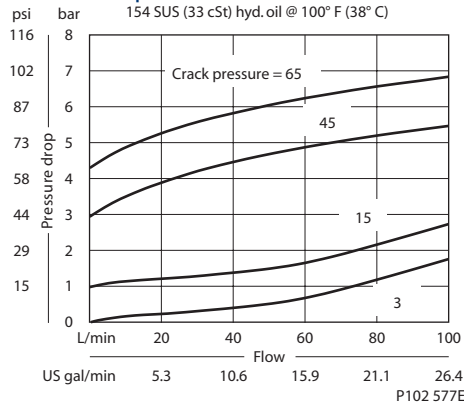
Cartridge Valves Technical Information
 Check Valves
 In-line
 3C14-01

OPERATION

This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



P102 001E

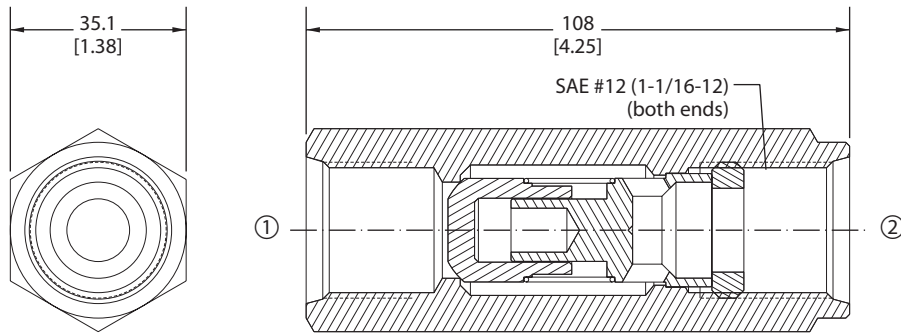
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	95 l/min [25 US gal/min]
Leakage	5 drops/min @ Rated pressure
Weight	0.54 kg [1.19 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



P102 571

ORDERING INFORMATION

3C14-01-12S-3

Crack pressure
 3 = 0.2 bar [3 psi]
 15 = 1.0 bar [15 psi]
 45 = 3.1 bar [45 psi]
 65 = 4.5 bar [65 psi]

Port sizes
 12S = SAE #12

P102 583E

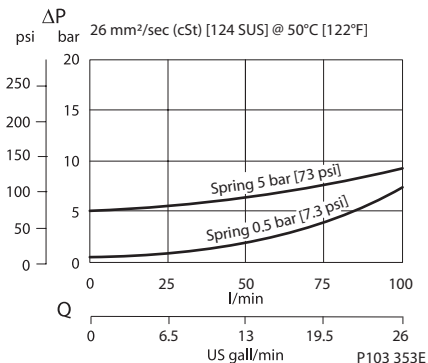
Check valves
3C14-01

OPERATION

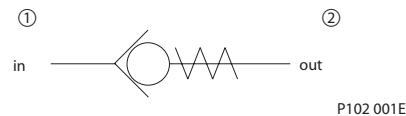
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



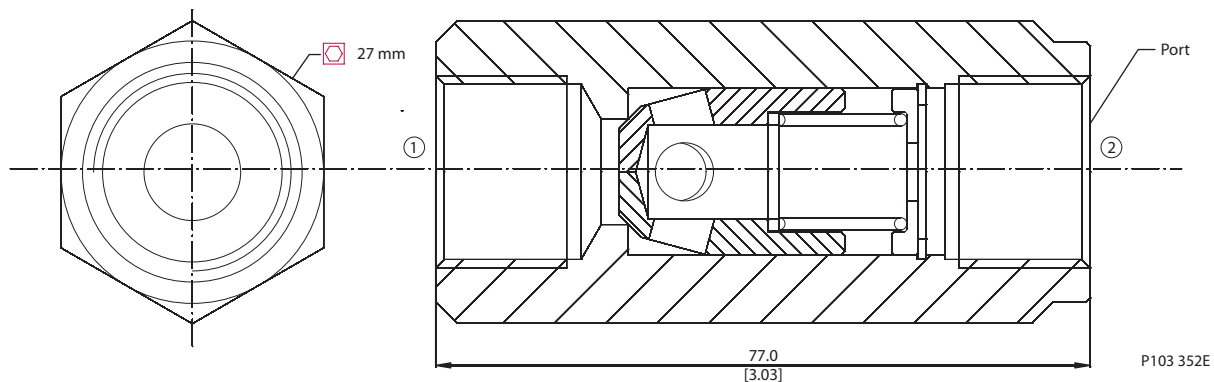
Specifications

Rated pressure	315 bar [4500 psi]
Rated flow at 7 bar [100 psi]	100 l/min [26 US gal/min]
Weight	0.21 kg [0.46 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

RS 13 / 0.5 - G

Ports
 G = ½ BSP

Crack Pressure
 0.5 = 0.5 bar [7 psi]
 5 = 5 bar [73 psi]

P103 354E

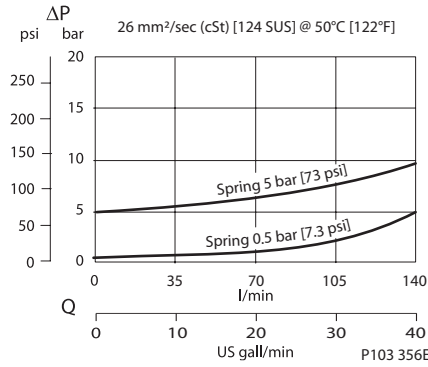
Check valves
RS 13

OPERATION

This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



P102 001E

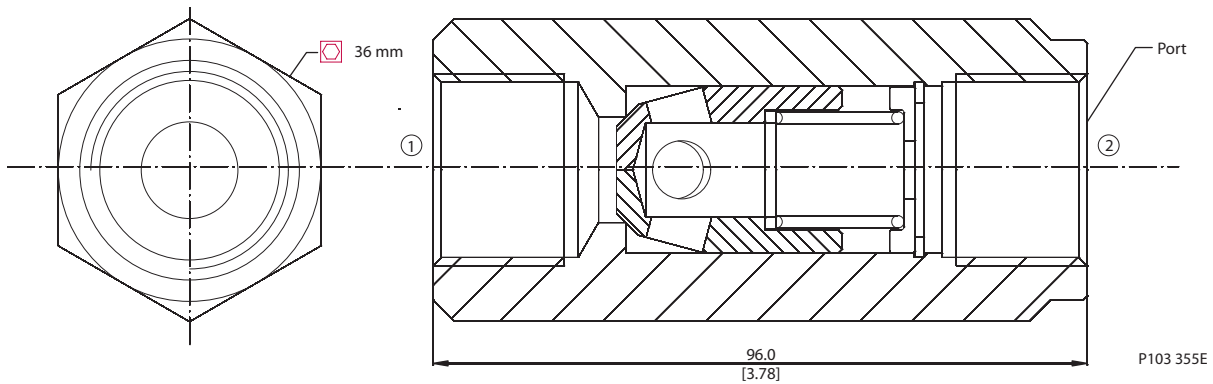
Specifications

Rated pressure	280 bar [4000 psi]
Rated flow at 7 bar [100 psi]	140 l/min [37 US gal/min]
Weight	0.43 kg [0.95 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

RS 19 / 0.5 - G

Ports

A = SAE #12
 G = 3/4 BSP

Crack Pressure

0.5 = 0.5 bar [7 psi]
 5 = 5 bar [73 psi]

P103 357E

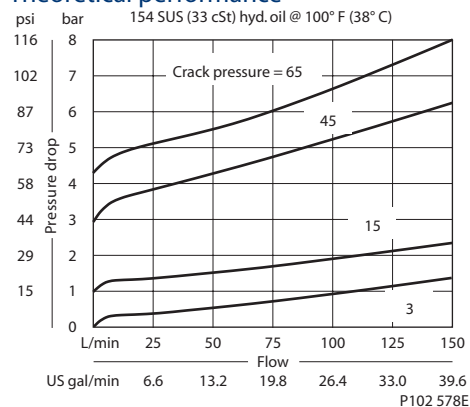
Check valves
RS 19

OPERATION

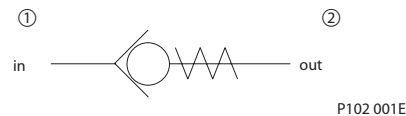
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



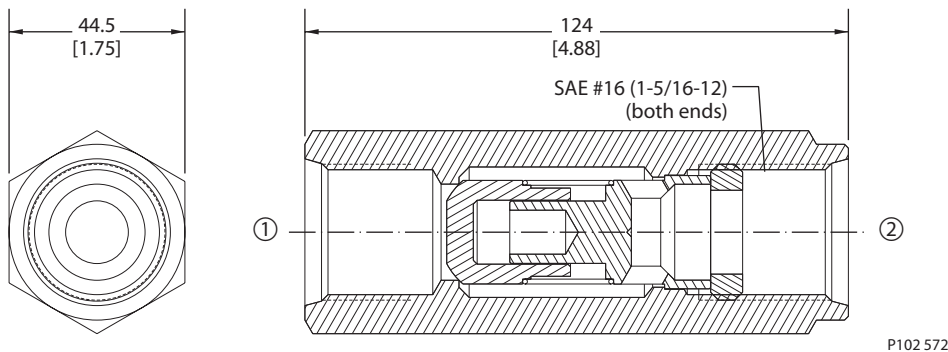
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	150 l/min [40 US gal/min]
Leakage	5 drops/min @ Rated pressure
Weight	1.00 kg [2.20 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

3C15-01-16S-45

Crack pressure
 3 = 0.2 bar [3 psi]
 15 = 1.0 bar [15 psi]
 45 = 3.1 bar [45 psi]
 65 = 4.5 bar [65 psi]

Port sizes
 16S = SAE #16

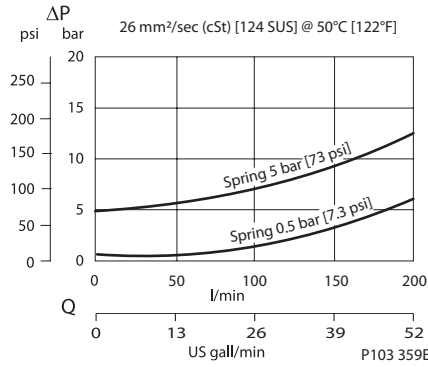
P102 584E

OPERATION

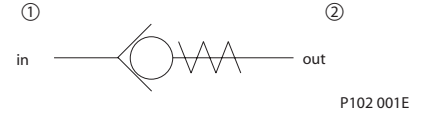
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



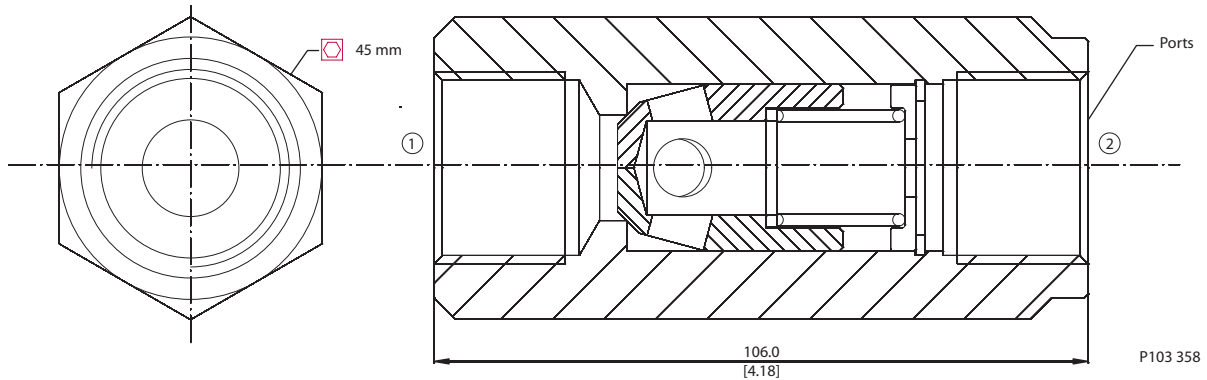
Specifications

Rated pressure	245 bar [3500 psi]
Rated flow at 7 bar [100 psi]	200 l/min [53 US gal/min]
Weight	0.88 kg [1.94 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

RS 25 / 0.5 - G

Ports
 A = SAE #16
 G=1 BSP

Crack Pressure
 0.5 = 0.5 bar [7 psi]
 5 = 5 bar [73 psi]

P103 360E

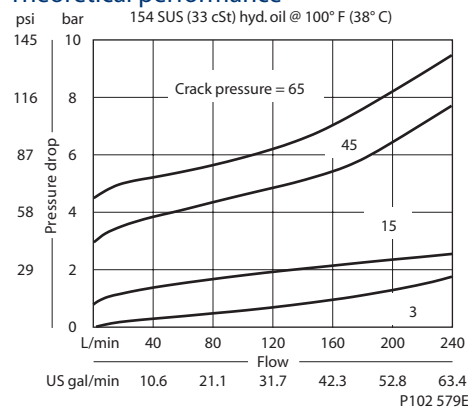
Check valves
RS 25

OPERATION

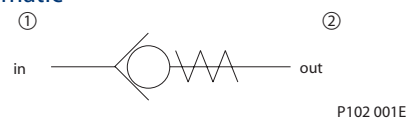
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



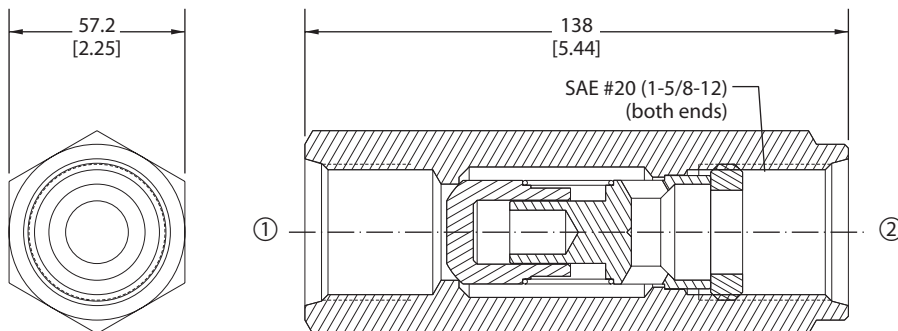
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	230 l/min [61 US gal/min]
Leakage	5 drops/min @ Rated pressure
Weight	1.91 kg [4.21 lb]
Cavity	none

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

3C16-01-20S-3

Crack pressure

- 3 = 0.2 bar [3 psi]
- 15 = 1.0 bar [15 psi]
- 45 = 3.1 bar [45 psi]
- 65 = 4.5 bar [65 psi]

Port sizes

20S = SAE #20

P102 585E

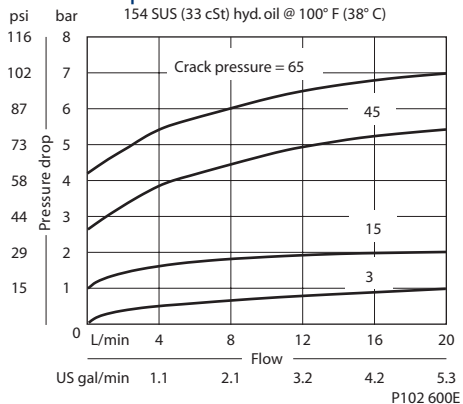
Check valves
 3C16-01

OPERATION

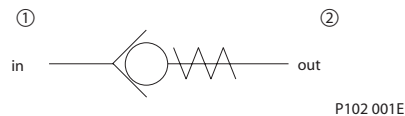
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



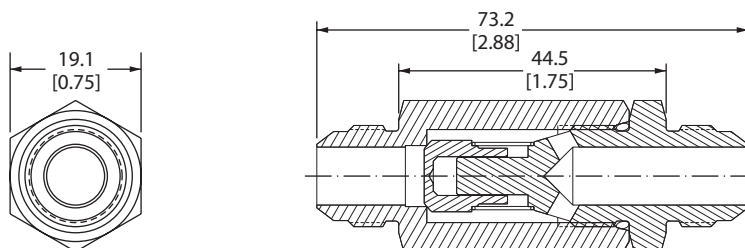
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	20 l/min [5 US gal/min]
Leakage	5 drops/min @ Rated pressure
Weight	0.09 kg [0.20 lb]
Cavity	none

DIMENSIONS

mm [in]

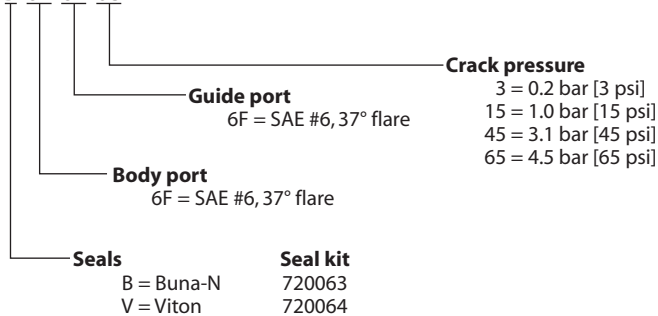
Cross-sectional view



P102 594

ORDERING INFORMATION

3CM11-01-B-6F-6F-03



P102 606E

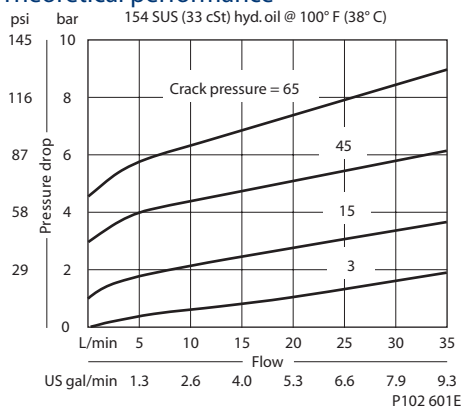
Check valves
3CM11-01

OPERATION

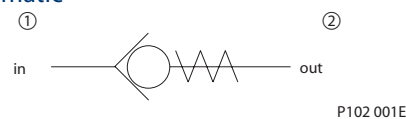
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



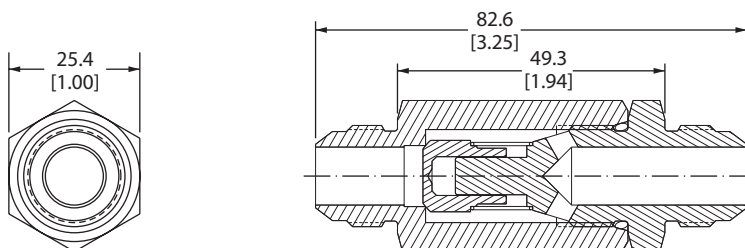
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	35 l/min [9 US gal/min]
Leakage	5 drops/min @ Rated pressure
Weight	0.23 kg [0.51 lb]
Cavity	none

DIMENSIONS

mm [in]

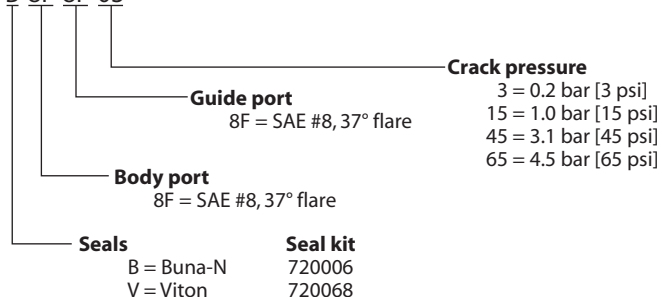
Cross-sectional view



P102 595

ORDERING INFORMATION

3CM12-01-B-8F-8F-03



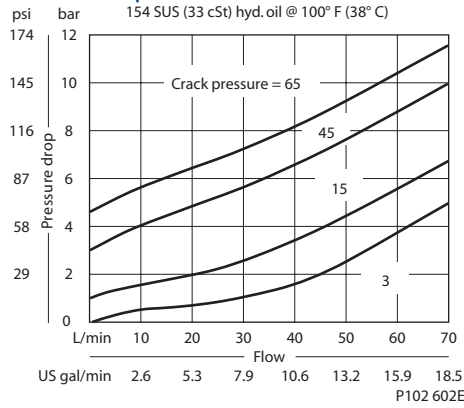
P102 607E

OPERATION

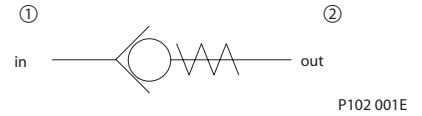
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



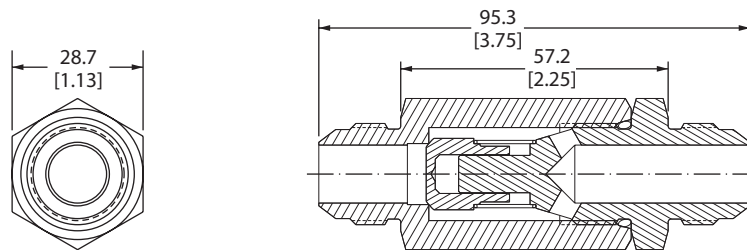
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	70 l/min [19 US gal/min]
Leakage	5 drops/min @ Rated pressure
Weight	0.28 kg [0.62 lb]
Cavity	none

DIMENSIONS

mm [in]

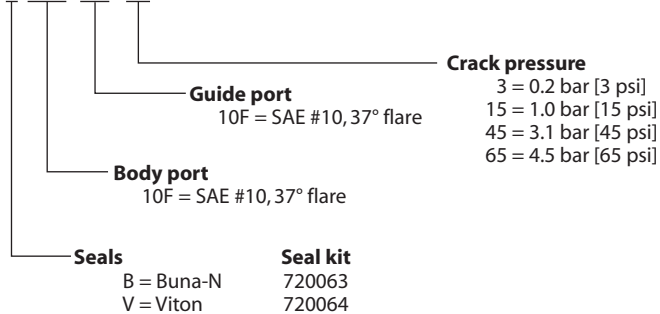
Cross-sectional view



P102 596

ORDERING INFORMATION

3CM13-01-B-10F-10F-03



P102 608E

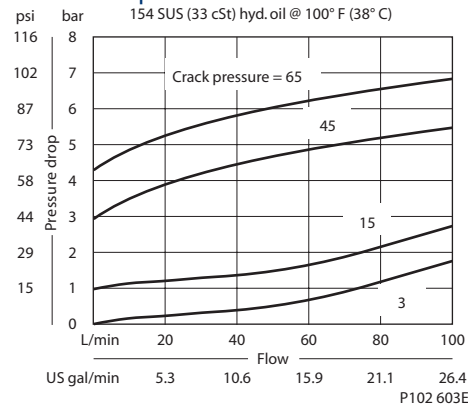
Check valves
 3CM13-01

OPERATION

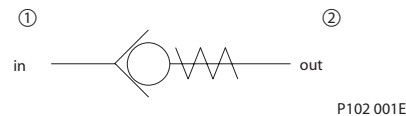
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



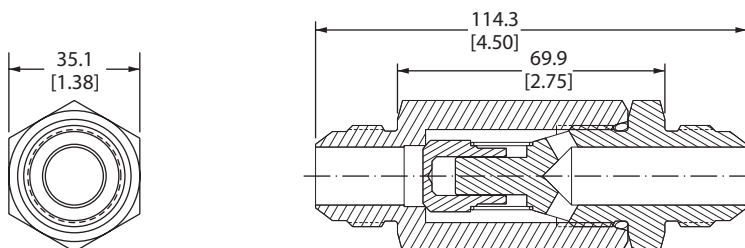
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	95 l/min [25 US gal/min]
Leakage	5 drops/min @ Rated pressure
Weight	0.51 kg [1.12 lb]
Cavity	none

DIMENSIONS

mm [in]

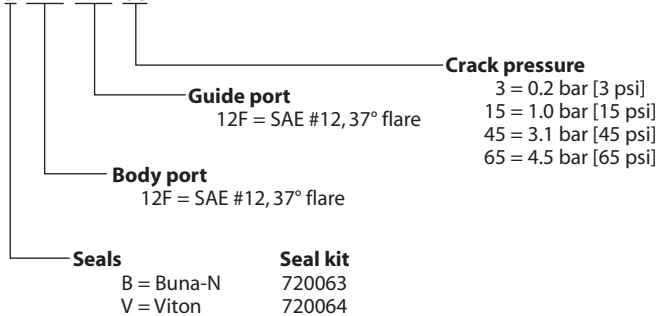
Cross-sectional view



P102 597

ORDERING INFORMATION

3CM14-01-B-12F-12F-03



P102 609E

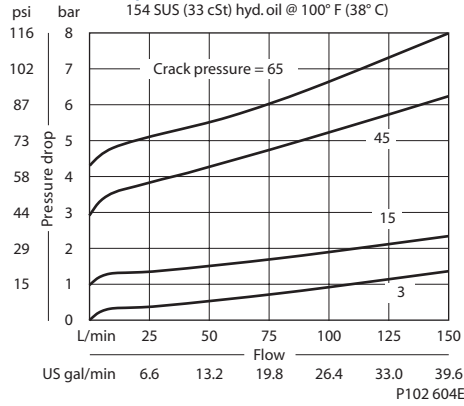
Cartridge Valves Technical Information
 Check Valves
 In-line
 3CM15-01

OPERATION

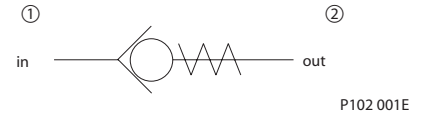
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



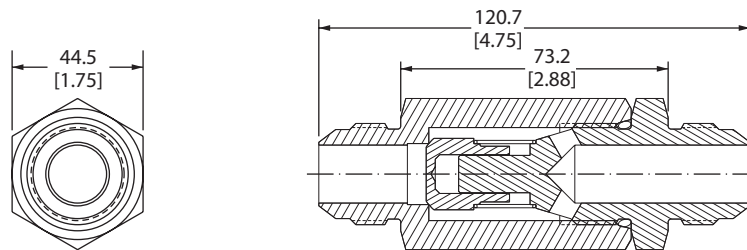
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	150 l/min [40 US gal/min]
Leakage	5 drops/min @ Rated pressure
Weight	0.85 kg [1.87 lb]
Cavity	none

DIMENSIONS

mm [in]

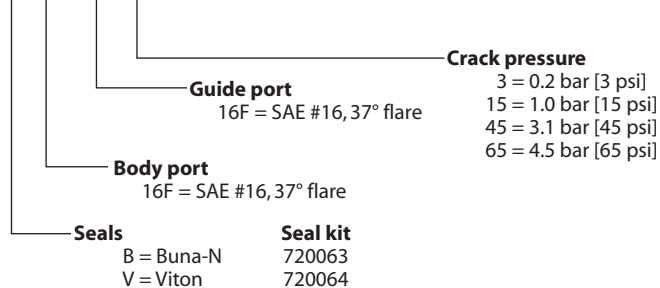
Cross-sectional view



P102 598

ORDERING INFORMATION

3CM15-01-B-16F-16F-03



P102 610E

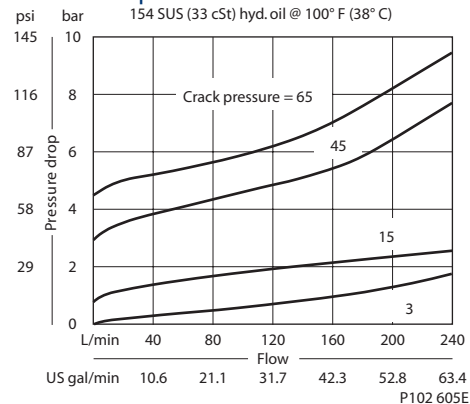
Check valves
3CM15-01

OPERATION

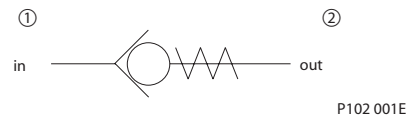
This valve allows free flow from 1 to 2 and blocks flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



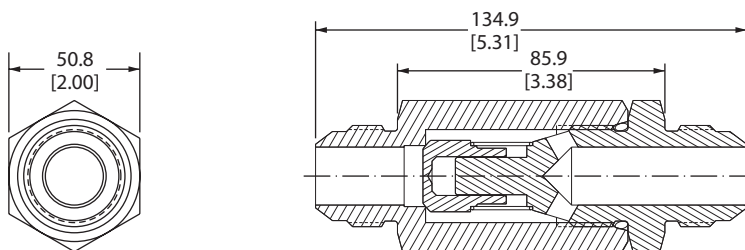
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	230 l/min [61 US gal/min]
Leakage	5 drops/min @ Rated pressure
Weight	1.47 kg [3.24 lb]
Cavity	none

DIMENSIONS

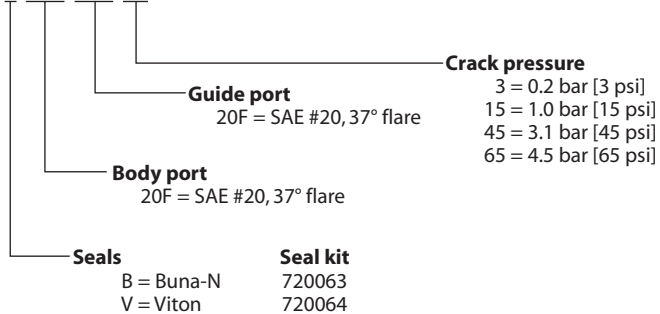
mm [in]

Cross-sectional view



ORDERING INFORMATION

3CM16-01-B-20F-20F-03



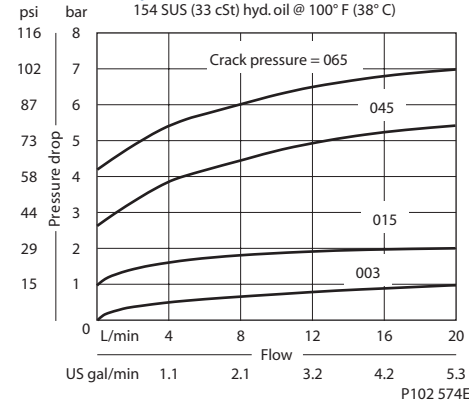
P102 611E

OPERATION

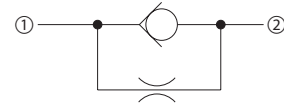
This valve allows free flow from 1 to 2 and restricted flow from 2 to 1.

SPECIFICATIONS

Theoretical performance



Schematic



P102 592

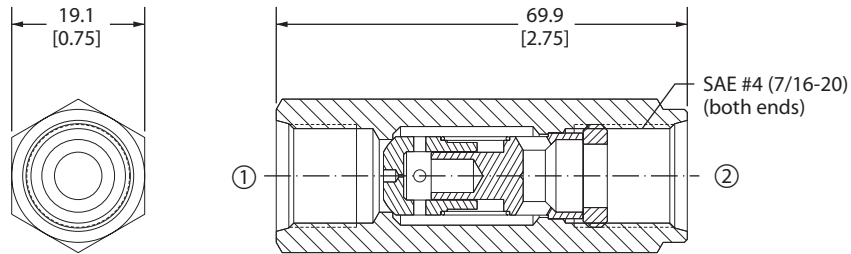
Specifications

Rated pressure	350 bar [5000 psi]
Rated flow at 7 bar [100 psi]	20 l/min [5 US gal/min]
Weight	0.11 kg [0.24 lb]
Cavity	none

DIMENSIONS

mm [in]

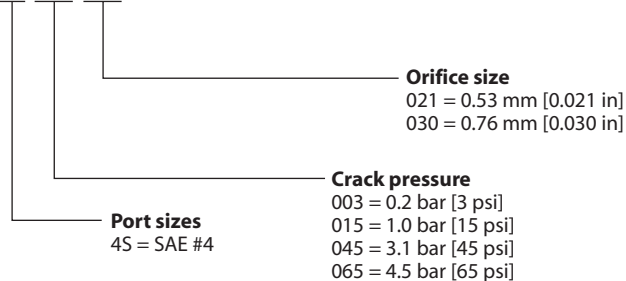
Cross-sectional view



P102 591E

ORDERING INFORMATION

2RN11-01-4S-003-021



P102 593E

Check valves
2RN11-01

