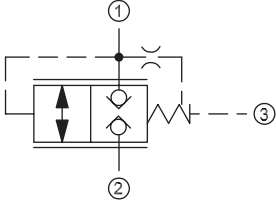
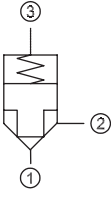
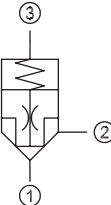
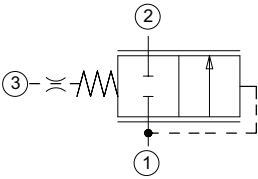
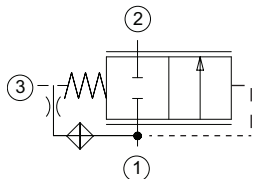


Logic Element, Poppet Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	VLP 12/P2	NCS12/3	Logic Element Poppet, Double Blocking Closed, Vent to Open	160 l/min [42 US gal/min]	315 bar [4500 psi]	13.10

Logic Element, Poppet Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	VLP 12/A5	NCS12/3	Logic Element Poppet, Normally Closed, Pilot to Close	160 l/min [42 US gal/min]	315 bar [4500 psi]	13.11

Logic Element, Poppet Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	VLP 12/C2	NCS12/3	Logic Element Poppet, Normally Closed, Vent to Open	160 l/min [42 US gal/min]	315 bar [4500 psi]	13.12

Logic Element, Spool Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP700-1	SDC10-3	Logic Element, Normally Closed, Pilot to Close	50 l/min [13 US gal/min]	210 bar [3000 psi]	13.13
	CP701-1	CP12-3S		150 l/min [40 US gal/min]	210 bar [3000 psi]	13.14
	CP702-1	SDC16-3S		190 l/min [50 US gal/min]	210 bar [3000 psi]	13.15
	LE20-CPC	CP20-3S		320 l/min [85 US gal/min]	207 bar [3000 psi]	13.16

Logic Element, Spool Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP700-2	SDC10-3	Logic Element, Normally Closed, Vent to Open	50 l/min [13 US gal/min]	210 bar [3000 psi]	13.17
	CP701-2	CP12-3S		150 l/min [40 US gal/min]	210 bar [3000 psi]	13.18
	CP702-2	SDC16-3S		190 l/min [50 US gal/min]	210 bar [3000 psi]	13.19
	CP703-2	CP20-3S		320 l/min [85 US gal/min]	210 bar [3000 psi]	13.20

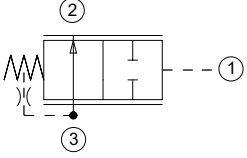
* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

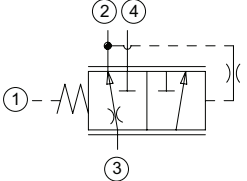
Logic Element, Spool Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP700-4	SDC10-3	Logic Element, Normally Open,	40 l/min [11 US gal/min]	210 bar [3000 psi]	13.21
	CP701-4	CP12-3S	Pilot to Open	75 l/min [20 US gal/min]	210 bar [3000 psi]	13.22
	CP702-4	SDC16-3S		114 l/min [30 US gal/min]	210 bar [3000 psi]	13.23
	CP703-4	CP20-3S		200 l/min [53 US gal/min]	210 bar [3000 psi]	13.24

Logic Element, Spool Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP700-3	SDC10-3	Logic Element, Normally Open,	40 l/min [11 US gal/min]	210 bar [3000 psi]	13.25
	CP701-3	CP12-3S	Vent to Close	80 l/min [21 US gal/min]	210 bar [3000 psi]	13.26
	CP702-3	SDC16-3S		115 l/min [30 US gal/min]	210 bar [3000 psi]	13.27

Pressure Compensator	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP310-4	SDC10-4	Pressure Compensator, Flow Control,	40 l/min [11 US gal/min]	210 bar [3000 psi]	13.28
	CP311-4	CP12-4	Priority	60 l/min [16 US gal/min]	210 bar [3000 psi]	13.29
	CP312-4	CP16-4		130 l/min [34 US gal/min]	210 bar [3000 psi]	13.30
	CP313-4	SDC20-4		340 l/min [90 US gal/min]	210 bar [3000 psi]	13.31

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

Pressure Compensator	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP300-4	SDC10-3	Pressure Compensator, Flow Control, Restrictive	40 l/min [11 US gal/min]	210 bar [3000 psi]	13.32
	CP301-4	CP12-3		90 l/min [24 US gal/min]	210 bar [3000 psi]	13.33
	CP302-4	SDC16-3		130 l/min [34 US gal/min]	210 bar [3000 psi]	13.34
	CP303-4	SDC20-3		284 l/min [75 US gal/min]	210 bar [3045 psi]	13.35

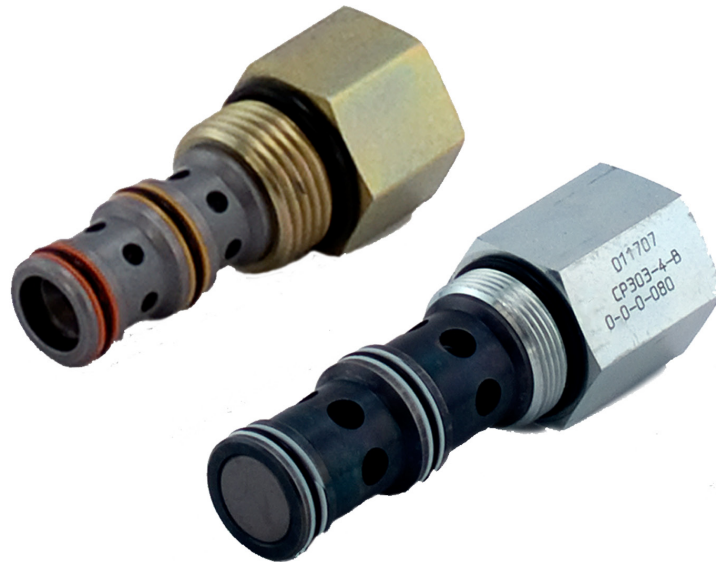
Pressure Compensator	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP310-6	SDC10-4	Pressure Compensator, Load Sense, Priority, Static	40 l/min [11 US gal/min]	210 bar [3000 psi]	13.36
	PC12-LPS	CP12-4		75 l/min [20 US gal/min]	207 bar [3000 psi]	13.39
	CP312-6	CP16-4		125 l/min [33 US gal/min]	210 bar [3000 psi]	13.37
	CP313-6	SDC20-4		200 l/min [53 US gal/min]	210 bar [3000 psi]	13.38

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

OVERVIEW

Logic elements are multi-purpose devices. These valves, when used with other cartridge valves, can create a wide variety of circuits for control of pressure, flow, and direction.

Differential sensing valves

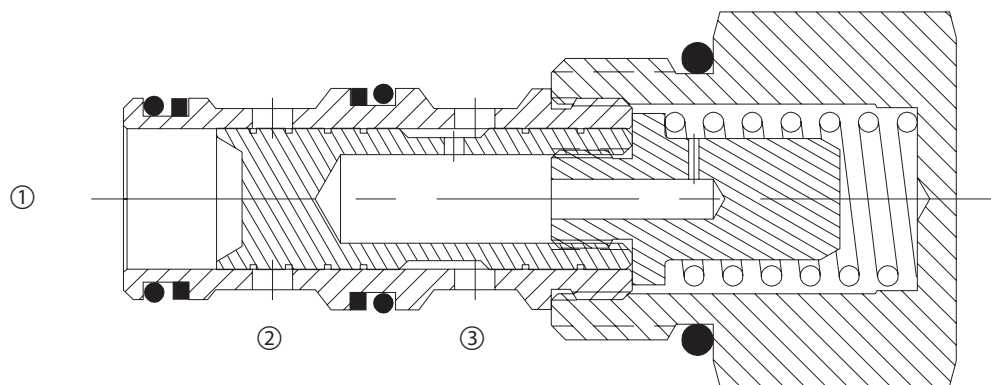


F102 006

**SPRING BIASED,
 NORMALLY CLOSED,
 DIFFERENTIAL SENSING
 VALVES**

Spring-biased, normally-closed differential sensing valves include: CP700-1, CP701-1, and CP702-1. These valves are normally closed and will modulate based on the spring control pressure, inlet pressure at port , and pilot pressure at port .

Spring biased, normally closed, differential sensing valve cross section



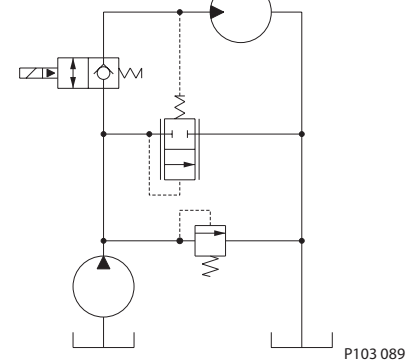
P103 088

**SPRING BIASED,
 NORMALLY CLOSED,
 DIFFERENTIAL SENSING
 VALVES
 (continued)**

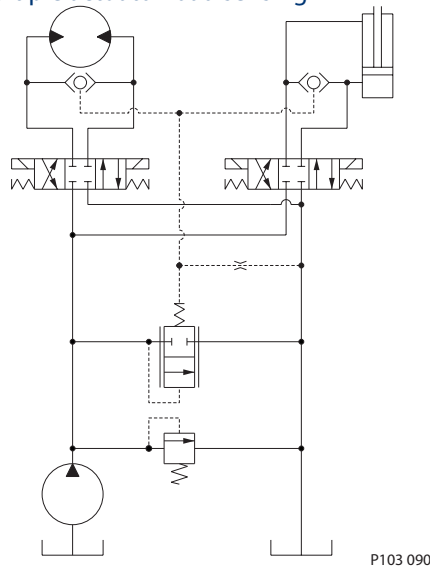
Common applications

- Load-sensing for a fixed-displacement pump with single or multiple actuators.
- Bypass-type pressure-compensated flow control.

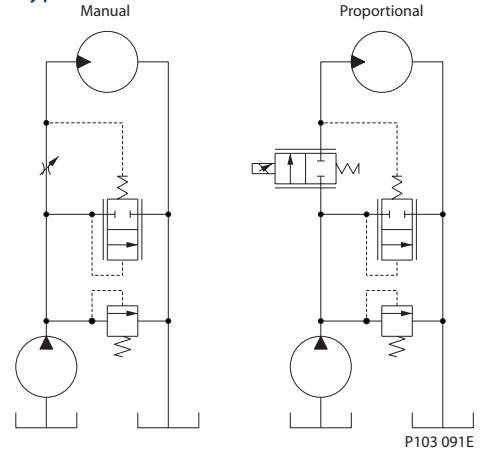
Single actuator load sensing



Multiple actuator load sensing



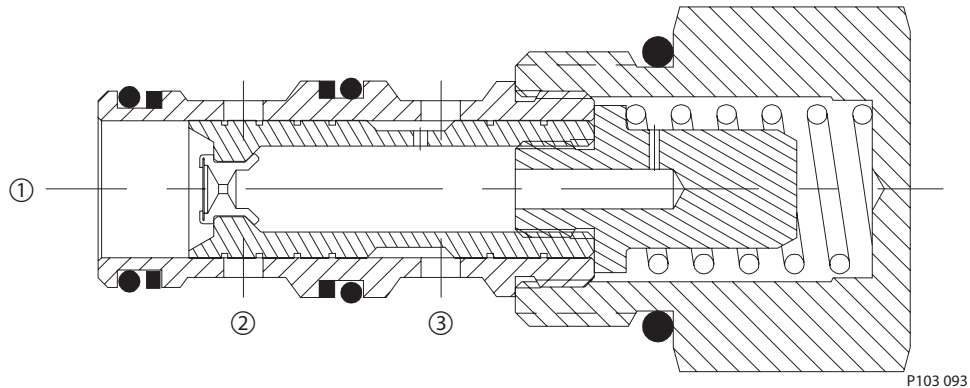
Bypass flow control



**SPRING BIASED,
 NORMALLY CLOSED,
 VENT TO OPEN
 DIFFERENTIAL SENSING
 VALVES**

Spring-biased, normally-closed, vent-to-open differential sensing valves include: CP700-2, CP701-2, and CP702-2. These valves are normally closed and will modulate based on the spring control pressure, inlet pressure at port , and pilot pressure at port .

Spring biased, normally closed, vent to open differential sensing valve

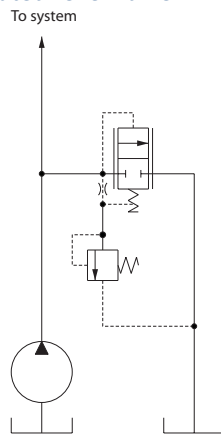


P103 093

Common applications include:

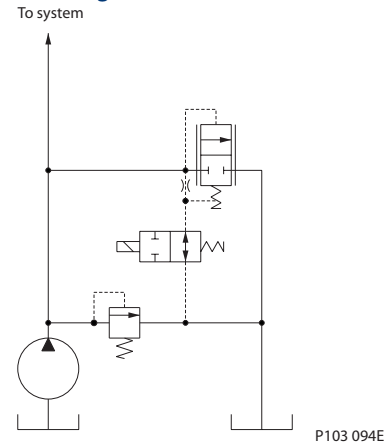
- Pump unloading.
- Pilot-operated relief valve.
- Sequence valve.
- Selector circuit.

Pilot-operated relief valve



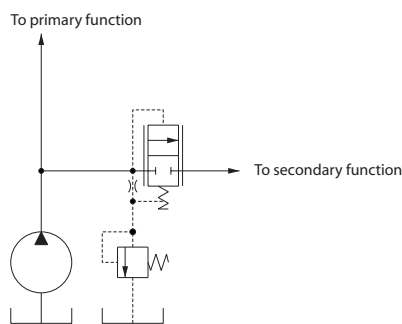
P103 095E

Pump unloading



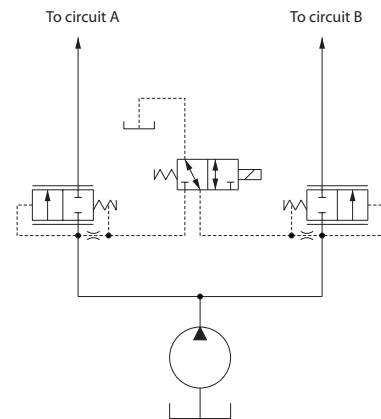
P103 094E

Pilot-operated sequence valve



P103 096E

Selector valve

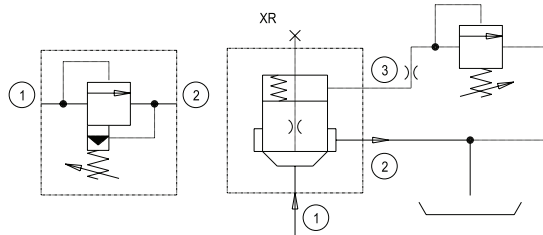


P103 097E

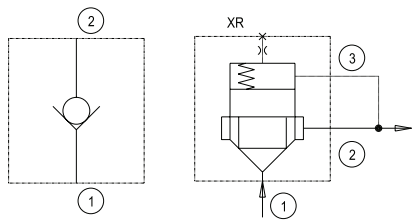
**LOGIC ELEMENT
 POPPET-TYPE
 CIRCUIT EXAMPLES**

Poppet-type logic elements provide a multitude of hydraulic circuit options, as illustrated in the circuit examples below. These poppet designs provide low-leakage and are commonly piloted, to provide the needed functionality, as a pressure relief, check valve, directional valve, or flow control.

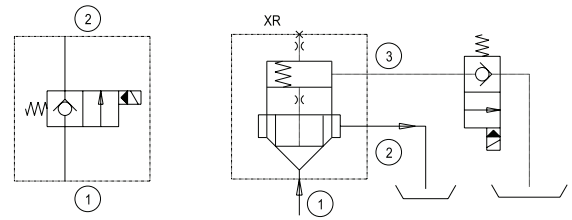
PRESSURE RELIEF VALVE VLP /P2



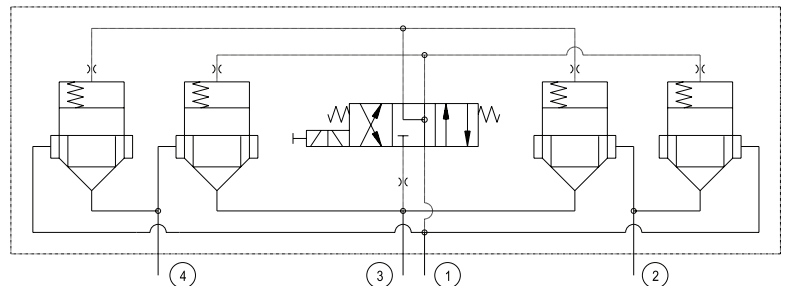
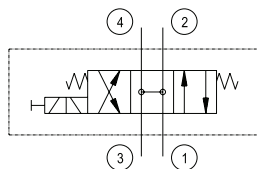
CHECK VALVE VLP /A5



DIRECTIONAL VALVE VLP /C2

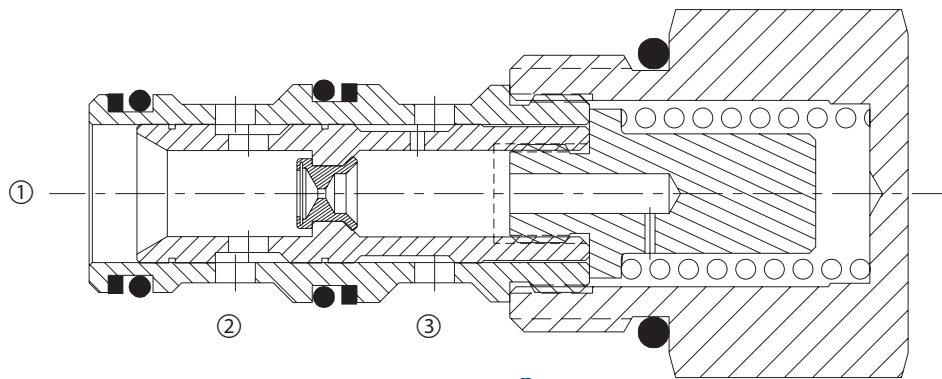
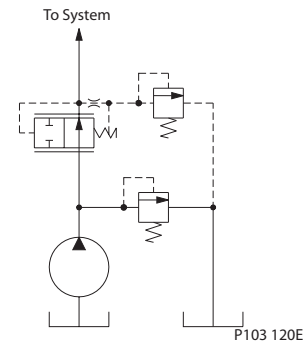


4-3 WAY ON-OFF VALVES VLP/A5



**SPRING BIASED,
 NORMALLY OPEN, VENT
 TO CLOSE, DIFFERENTIAL**

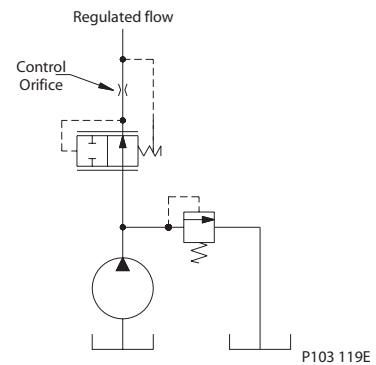
Spring-biased, normally-open, vent-to-close differential sensing valves include: CP700-3, CP701-3, and CP702-3. These valves are normally open and will modulate based on spring control pressure, outlet pressure at port , and pilot pressure at port . One application for this valve is to create a high-flow pressure reducing valve when using a small relief valve (like CP208-1), or a proportional relief valve (like CP558-20) as a pilot element.



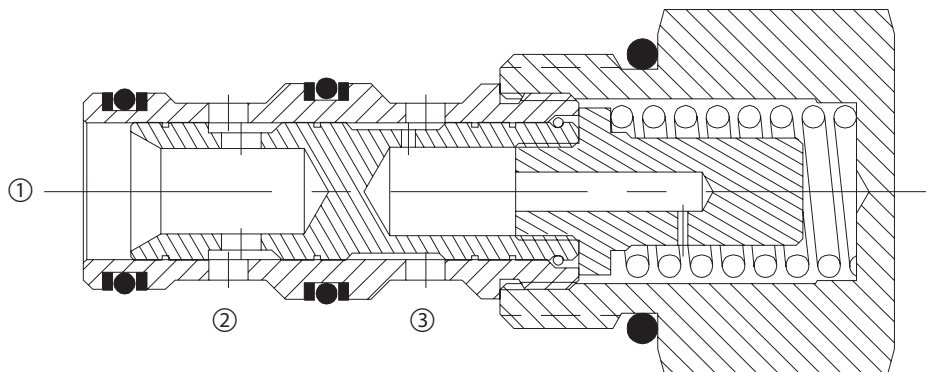
Pressure compensator P103 098

**SPRING BIASED,
 NORMALLY OPEN,
 DIFFERENTIAL SENSING
 VALVES**

Spring-biased, normally-open differential sensing valves include: CP700-4, CP701-4, and CP702-4. These valves are normally open and will modulate based on spring control pressure, outlet pressure at port , and pilot pressure at port . One application for this valve is as a pressure compensator when used with a fixed or adjustable orifice to create a pressure-compensated flow control.



Spring biased, normally open, differential sensing valve



P103 099

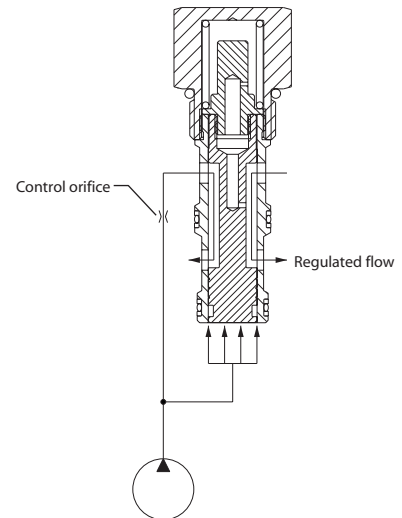
**PRESSURE
COMPENSATING,
DIFFERENTIAL SENSING
VALVES**

Pressure compensators offer the circuit designer capability to add pressure compensation to any fixed or variable orifice. This ensures that flow, and resulting actuator speed, are maintained regardless of system and working pressures. Note that a pressure compensator is required when using Comatrol direct-acting proportional flow controls; see *Proportional valve application notes* for more information.

Restrictive-type

Restrictive-type pressure compensators are three-ported valves that work in series with a fixed or variable control orifice. The pressure compensator is located downstream of the orifice and is spring-biased to an open position as shown. The spool “senses” the pressure on either side of the control orifice and will vary its restriction in order to maintain a constant pressure differential across the control orifice, hence maintaining a constant flow rate.

Restrictive-type pressure compensator operation

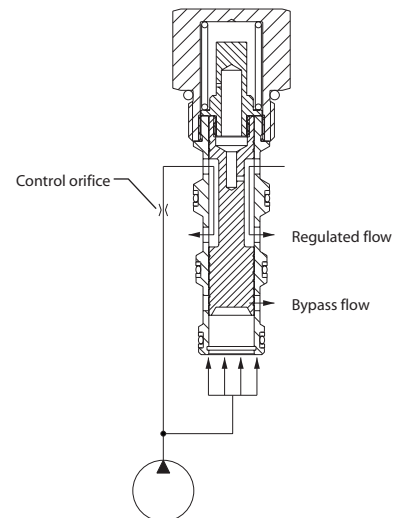


P103 100E

Priority-type

Priority-type pressure compensators are four-ported valves that work in series with a fixed or variable control orifice. As with the restrictive-type valves, these valves maintain a constant pressure differential across the control orifice. However, rather than restricting flow when the differential pressure becomes too high, the priority-type pressure compensators open a fourth bypass port for all flow in excess of that demanded by the control orifice. Note that if the bypass port is blocked, the valve will function as a restrictive-type pressure compensator.

Priority-type pressure compensator operation



P103 101E

SUMMARY

All of these circuits are particularly effective to control high flows while using small (e.g. 8 series) solenoid and relief valves as pilot elements. The above examples are typical circuits but are by no means the only applications for these valves. Effective use of differential sensing valves is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

Cartridge Valves Technical Information

Logic Elements

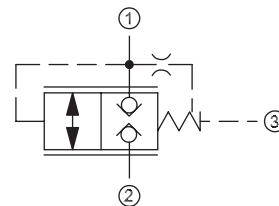
Logic Element, Poppet Type

VLP 12/P2

OPERATION

This is a poppet-type logic element with multi-function potential when used with other direction control devices.

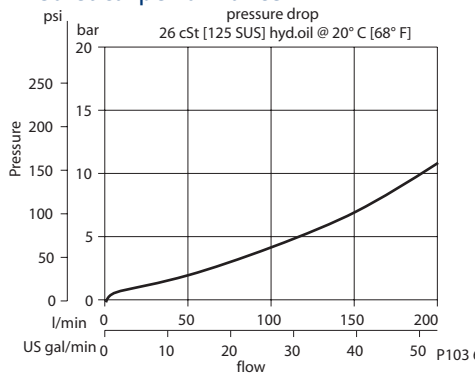
Schematic



P103 505

SPECIFICATIONS

Theoretical performance



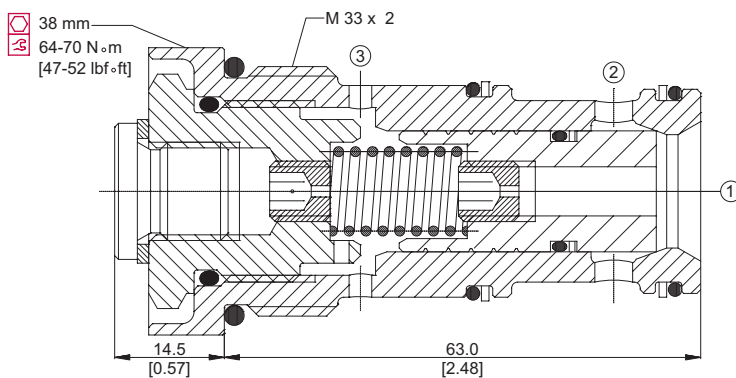
Specifications

Rated pressure	315 bar [4500 psi]
Rated flow at 7 bar [100 psi]	160 l/min [42 US gal/min]
Weight	0.30 kg [0.66 lb]
Cavity	NCS12/3
Bias spring	2 bar [29 psi]

DIMENSIONS

mm [in]

Cross-sectional view



P103 662

ORDERING INFORMATION

VLP 12/P2 - B - SE8S - V

Seals
V = Viton
Omit = Buna-N

Seal kit
230000360
230000130

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

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

P103 715E

Cartridge Valves Technical Information

Logic Elements

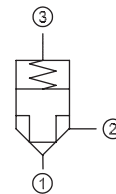
Logic Element, Poppet Type

VLP 12/A5

OPERATION

This is a poppet-type logic element with multi-function potential when used with other direction control devices.

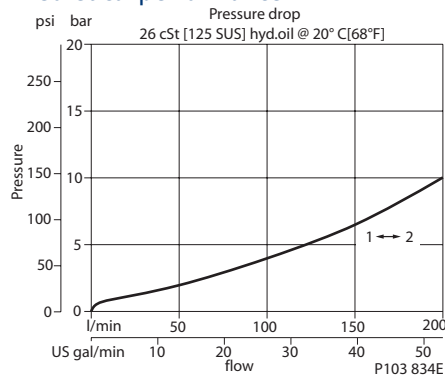
Schematic



P103 503

SPECIFICATIONS

Theoretical performance



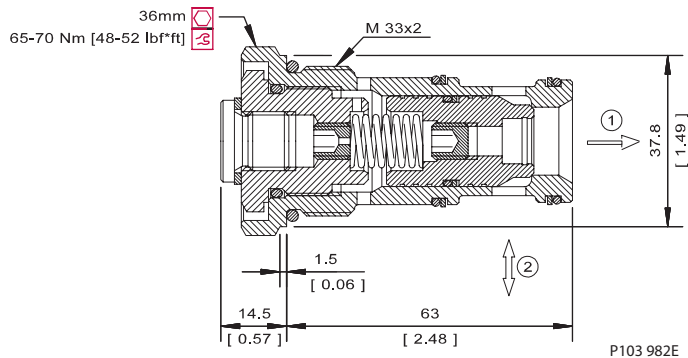
Specifications

Rated pressure	315 bar [4500 psi]
Rated flow at 7 bar [100 psi]	160 l/min [42 US gal/min]
Weight	0,30 kg [0.66 lb]
Cavity	NCS12/3
Bias spring	2 bar [29 psi]

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

VLP 12/A5 - B - SE8S - V

Seals
V = Viton
Omit = Buna-N

Seal kit
230000360
230000130

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

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

P103 835E

Logic elements
VLP 12/A5

Cartridge Valves Technical Information

Logic Elements

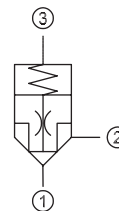
Logic Element, Poppet Type

VLP 12/C2

OPERATION

This is a poppet-type logic element with multi-function potential when used with other direction control devices.

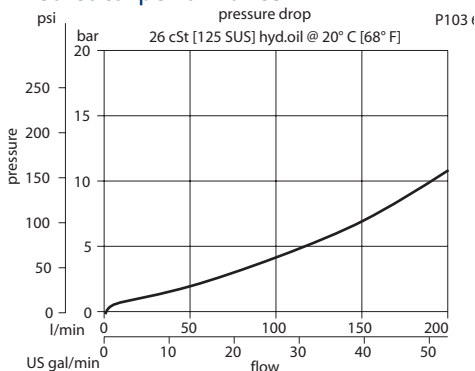
Schematic



P103 504

SPECIFICATIONS

Theoretical performance



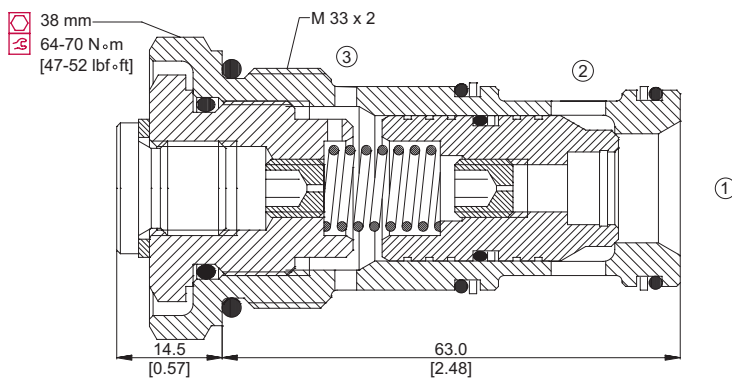
Specifications

Rated pressure	315 bar [4500 psi]
Rated flow at 7 bar [100 psi]	160 l/min [42 US gal/min]
Weight	0.30 kg [0.66 lb]
Cavity	NCS12/3
Bias spring	2 bar [29 psi]

DIMENSIONS

mm [in]

Cross-sectional view



P103 661

ORDERING INFORMATION

VLP 12/C2 - B - SE8S - V

Seals
 V = Viton
 Omit = Buna-N

Seal kit
 230000360
 230000130

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

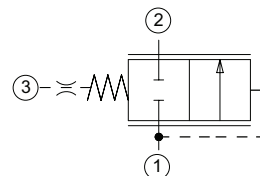
Housing P/N
 No Housing
 NCS12/3-SE-1/2
 NCS12/3-SE-3/4
 NCS12/3-SE-8S
 NCS12/3-SE-12S

P103 740E

OPERATION

This is a spool-type logic element with multi-function potential when used with other pressure, flow, or direction control devices.

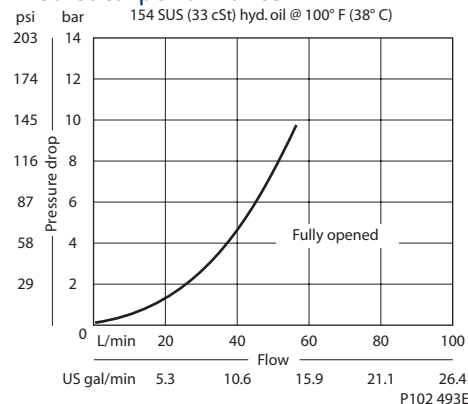
Schematic



P102 488E

SPECIFICATIONS

Theoretical performance



P102 493E

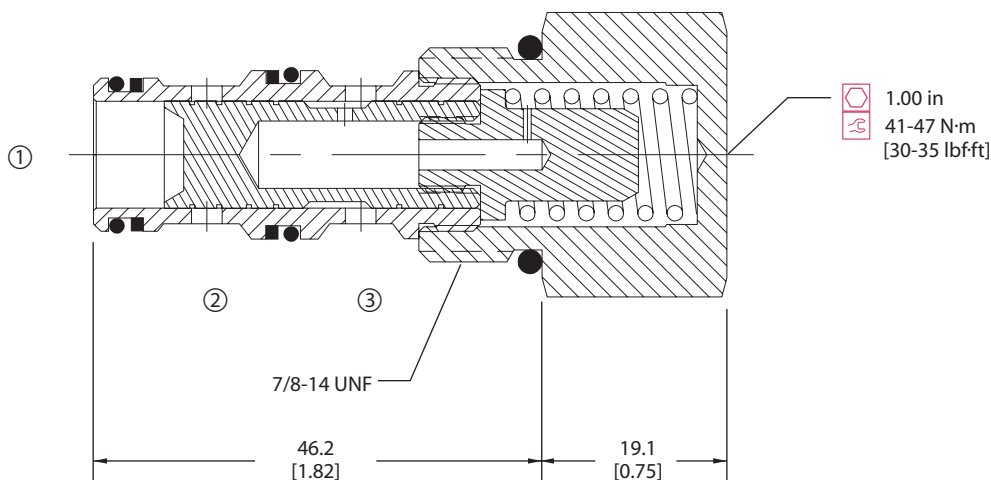
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	50 l/min [13 US gal/min]
Weight	0.12 kg [0.27 lb]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



P102 521E

ORDERING INFORMATION

CP700 - 1 - B - 8S - 080

Seals

- B = Buna-N
- V = Viton

- Seal kit 120027
- Seal kit 120028

Housing and ports

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

Housing P/N

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

Differential Control Pressure

bar	[psi]
040	= 2.8 [40]
080	= 5.5 [80]
110	= 7.6 [110]
150	= 10.3 [150]
190	= 13.1 [190]

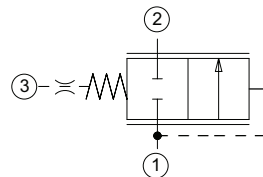
P102 025E

Logic elements
CP700-1

OPERATION

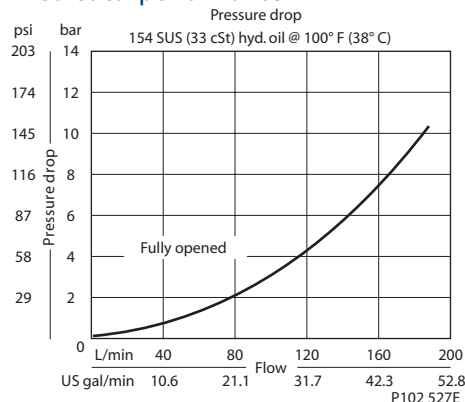
This is a spool-type logic element with multi-function potential when used with other pressure, flow, or direction control devices.

Schematic



SPECIFICATIONS

Theoretical performance



P102 488E

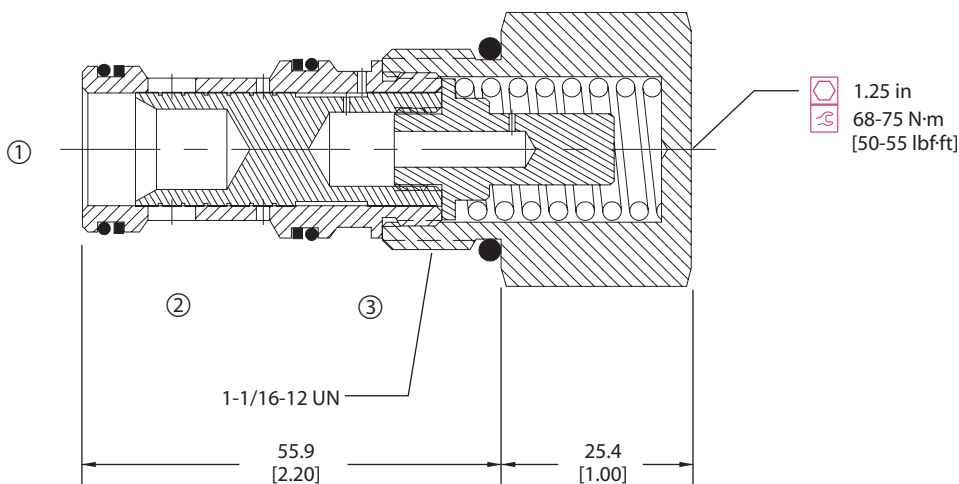
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	150 l/min [40 US gal/min]
Weight	0.26 kg [0.57 lb]
Cavity	CP12-3S

DIMENSIONS

mm [in]

Cross-sectional view



P102 513E

ORDERING INFORMATION

CP701 - 1 - B - 12S - 080

Seals

B = Buna-N
V = Viton

Seal kit
120335
120336

Housing and ports

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

Housing P/N

No housing
CP12-3S-4B/2B = 1/4 BSP
CP12-3S-6B/2B = 1/4 BSP
CP12-3S-10S/4S = #4 SAE
CP12-3S-12S/4S = #4 SAE

Pilot port

Differential Control Pressure

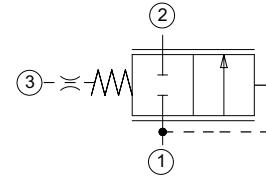
	bar	[psi]
030	= 2.1	[30]
050	= 3.5	[50]
080	= 5.5	[80]
100	= 6.9	[100]
150	= 10.3	[150]
170	= 11.7	[170]

P102 042E

OPERATION

This is a spool-type logic element with multi-function potential when used with other pressure, flow, or direction control devices.

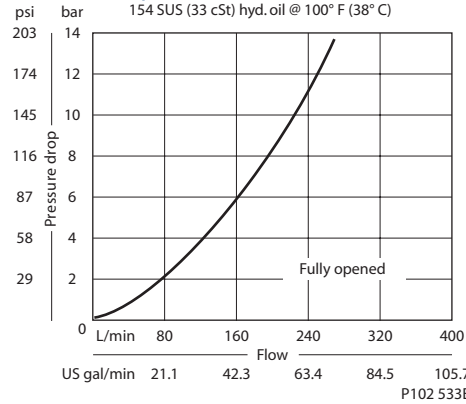
Schematic



P102 488E

SPECIFICATIONS

Theoretical performance



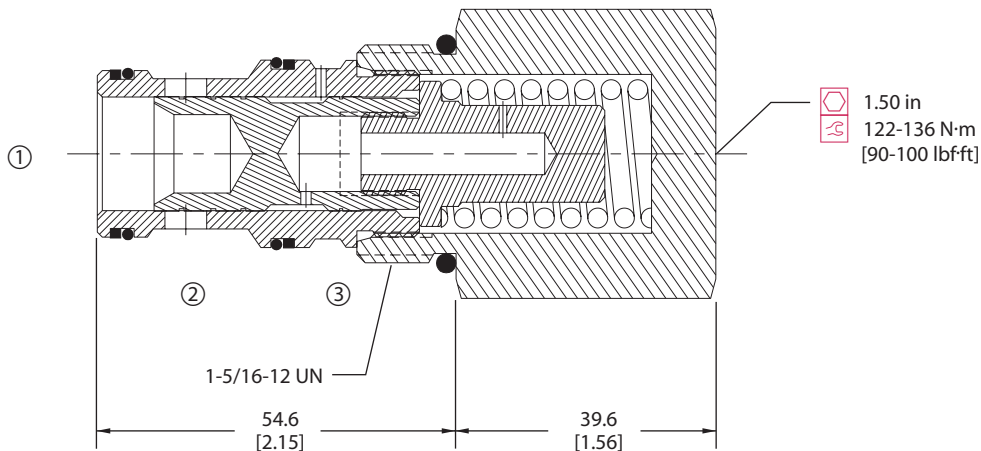
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	190 l/min [50 US gal/min]
Weight	0.38 kg [0.83 lb]
Cavity	SDC16-3S

DIMENSIONS

mm [in]

Cross-sectional view



P102 507E

ORDERING INFORMATION

CP702 - 1 - B - 16S - 080

Seals

B = Buna-N
 V = Viton

Seal kit
 120033
 120034

Housing and ports

0 = No housing
 6B = AL, 3/4 BSP
 8B = AL, 1 BSP
 12S = AL, #12 SAE
 16S = AL, #16 SAE
 Other housings available

Housing P/N Pilot port
 No housing
 CP16-3S-6B/2B = 1/4 BSP
 CP16-3S-8B/2B = 1/4 BSP
 CP16-3S-12S/4S = #4 SAE
 CP16-3S-12S/4S = #4 SAE

Differential Control Pressure

bar	[psi]
040	= 2.8 [40]
080	= 5.5 [80]
110	= 7.6 [110]
150	= 10.3 [150]
170	= 11.7 [170]

P102 054E

Cartridge Valves Technical Information

Logic Elements

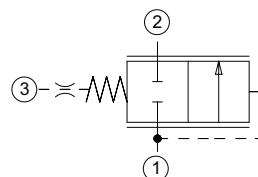
Logic Element, Spool Type

LE20-CPC

OPERATION

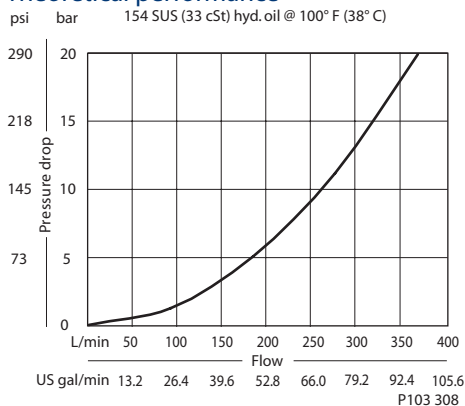
This is a spool-type logic element with multi-function potential when used with other pressure, flow, or direction control devices.

Schematic



SPECIFICATIONS

Theoretical performance



P102 488E

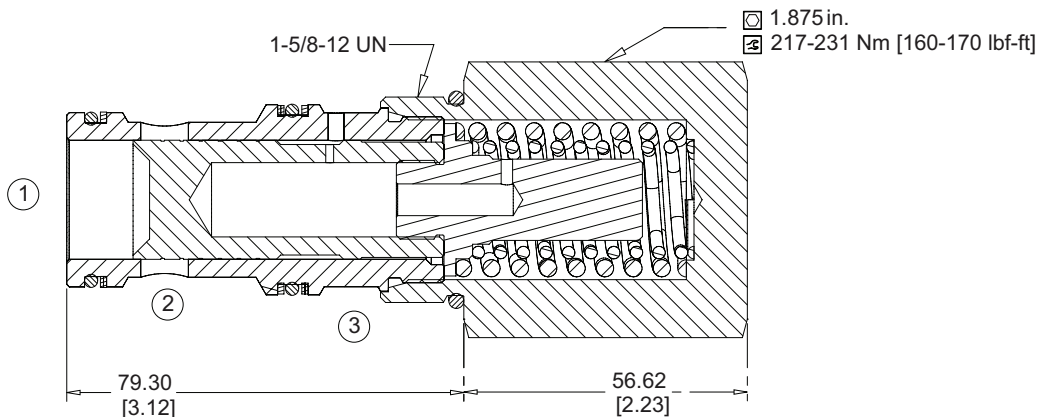
Specifications

Rated pressure	207 bar [3000 psi]
Rated flow at 7 bar [100 psi]	320 l/min [85 US gal/min]
Weight	1.19 kg [2.62 lb]
Cavity	CP20-3S

DIMENSIONS

mm [in]

Cross-sectional view



P108 372E

ORDERING INFORMATION

LE20-CPC-5.5-B-00

Differential Control Pressure
 5.5 = 5.5 bar [80 psi]
 7.0 = 7 bar [100 psi]
 10.0 = 10.0 bar [150 psi]

Housing and ports
 00 = No Housing
 8B = Al, 1 BSP
 10B = Al, 1-1/4 BSP
 16S = Al, #16 SAE
 20S = Al, #20 SAE

Housing Part # Pilot Port
 No Housing
 CP20-3S-8B/2B 1/4 BSP
 CP20-3S-10B/2B 1/4 BSP
 CP20-3S-16S/4S #4 SAE
 CP20-3S-20S/4S #4 SAE

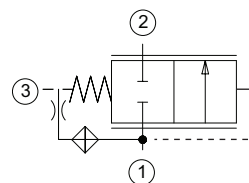
Seals Seal Kit
 B = Buna-N 120380
 V = Viton 120381

P108 371E

OPERATION

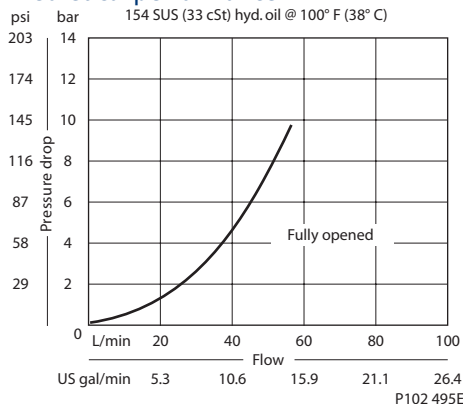
This is a spool-type logic element with multi-function potential when used with other pressure, flow, or direction control devices.

Schematic



SPECIFICATIONS

Theoretical performance



P102 487E

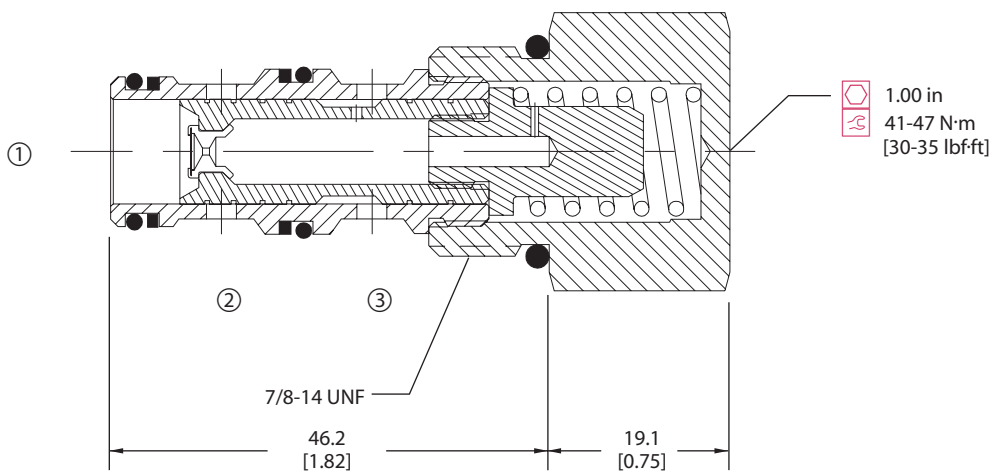
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	50 l/min [13 US gal/min]
Weight	0.13 kg [0.28 lb]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



P102 519E

ORDERING INFORMATION

CP700 - 2 - B - 8S - 080

Seals

B = Buna-N
V = Viton

Housing and ports

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

Housing P/N

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

Differential Control Pressure

bar	[psi]
040	= 2.8 [40]
080	= 5.5 [80]
110	= 7.6 [110]
150	= 10.3 [150]
190	= 11.7 [190]

P102 029E

Logic elements
CP700-2

Cartridge Valves Technical Information

Logic Elements

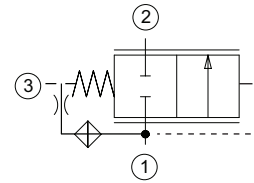
Logic Element, Spool Type

CP701-2

OPERATION

This is a spool-type logic element with multi-function potential when used with other pressure, flow, or direction control devices.

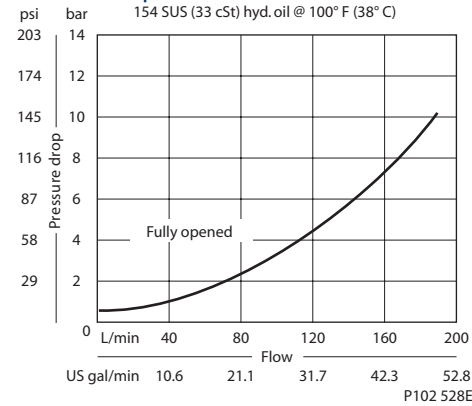
Schematic



P102 487E

SPECIFICATIONS

Theoretical performance



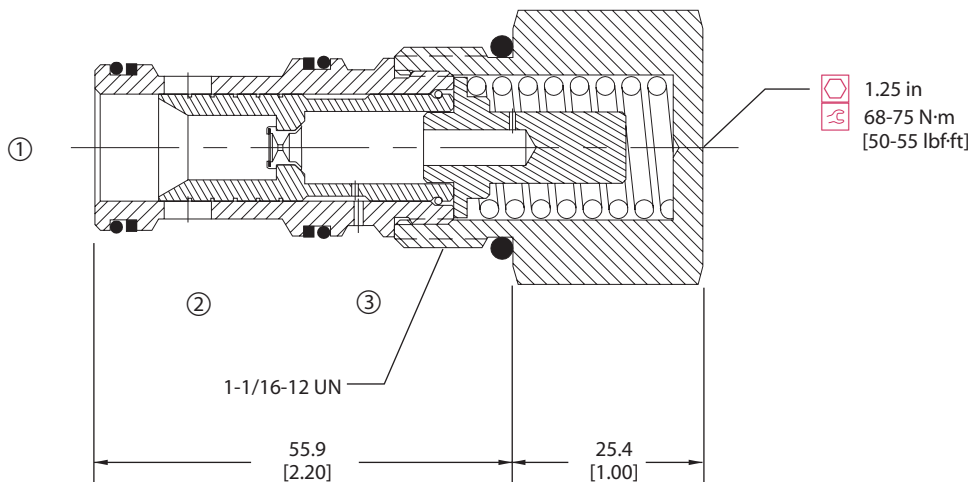
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	150 l/min [40 US gal/min]
Weight	0.26 kg [0.57 lb]
Cavity	CP12-3S

DIMENSIONS

mm [in]

Cross-sectional view



P102 512E

ORDERING INFORMATION

CP701 - 2 - B - 12S - 080

Seals

B = Buna-N
V = Viton

Seal kit
120335
120336

Housing and ports

0 = No housing
4B = AL, 1/2 BSP
6B = AL, 3/4 BSP
10S = AL, #10 SAE
12S = AL, #12 SAE
other housings available

Housing P/N

No housing
CP12-3S-4B/2B = 1/4 BSP
CP12-3S-6B/2B = 1/4 BSP
CP12-3S-10S/4S = #4 SAE
CP12-3S-12S/4S = #4 SAE

Pilot port

Differential Control Pressure

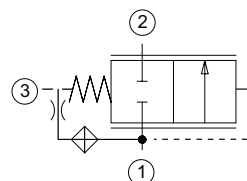
bar	[psi]
030	= 2.1 [30]
050	= 3.5 [50]
080	= 5.5 [80]
100	= 6.9 [100]
150	= 10.3 [150]

P102 043E

OPERATION

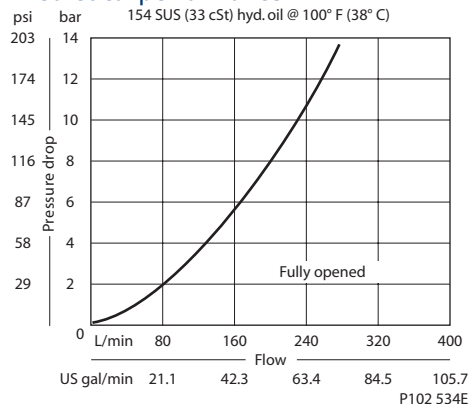
This is a spool-type logic element with multi-function potential when used with other pressure, flow, or direction control devices.

Schematic



SPECIFICATIONS

Theoretical performance



P102 487E

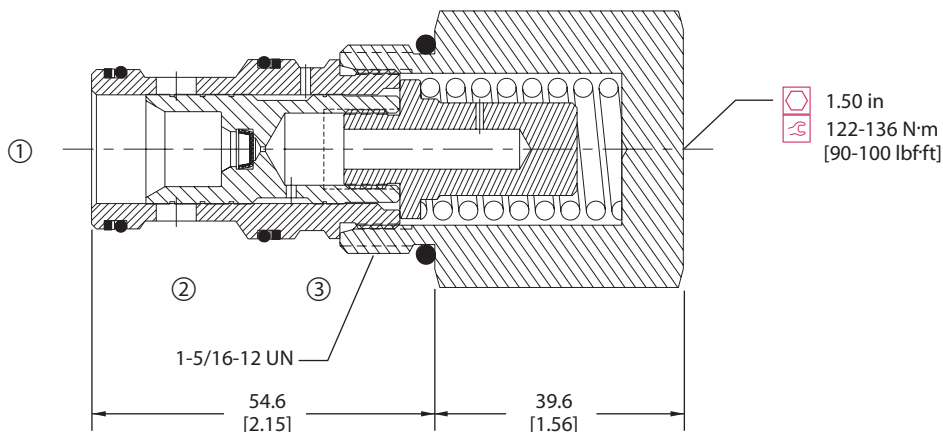
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	190 l/min [50 US gal/min]
Weight	0.38 kg [0.83 lb]
Cavity	SDC16-3S

DIMENSIONS

mm [in]

Cross-sectional view



P102 506E

ORDERING INFORMATION

CP702 - 2 - B - 16S - 080

Seals

B = Buna-N
V = Viton

Seal kit
120033
120034

Housing and ports

0 = No housing
6B = AL, 3/4 BSP
8B = AL, 1 BSP
12S = AL, #12 SAE
16S = AL, #16 SAE
Other housings available

Housing P/N Pilot port
No housing
CP16-3S-6B/2B = 1/4 BSP
CP16-3S-8B/2B = 1/4 BSP
CP16-3S-12S/4S = #4 SAE
CP16-3S-12S/4S = #4 SAE

Differential Control Pressure

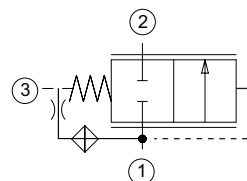
bar	[psi]
040	= 2.8 [40]
080	= 5.5 [80]
110	= 7.6 [110]
150	= 10.3 [150]
170	= 11.7 [170]

P102 055E

OPERATION

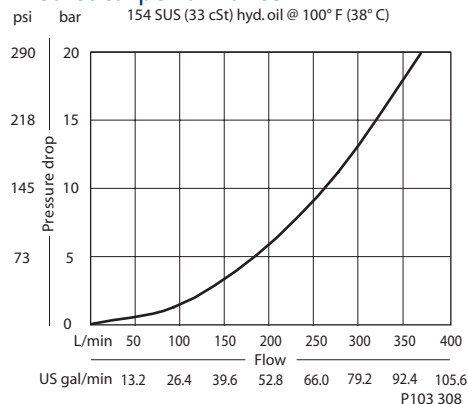
This is a spool-type logic element with multi-function potential when used with other pressure, flow, or direction control devices.

Schematic



SPECIFICATIONS

Theoretical performance



P102 487E

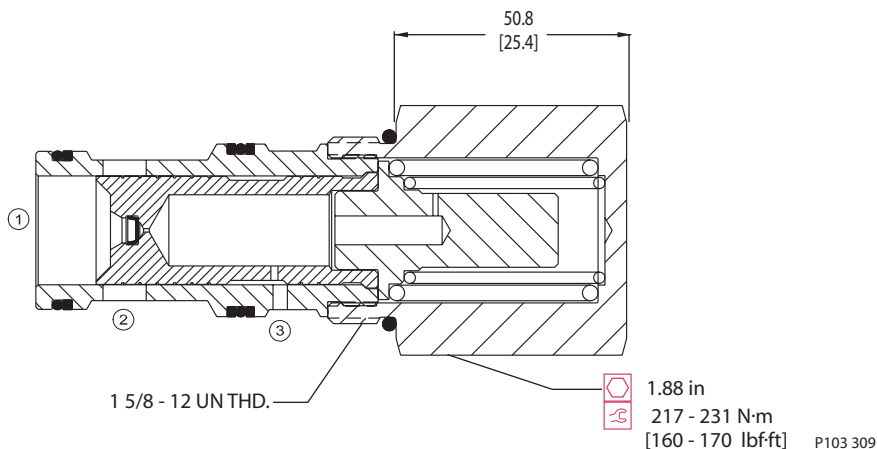
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	320 l/min [85 US gal/min]
Weight	1.18 kg [2.60 lb]
Cavity	CP20-3S

DIMENSIONS

mm [in]

Cross-sectional view



P103 309

ORDERING INFORMATION

CP703 - 2 - B - 16S - 080

Seals

B = Buna-N
V = Viton

Seal kit
120380
120381

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
CP20-3S-8B/2B = 1/4 BSP
CP20-3S-10B/2B = 1/4 BSP
CP20-3S-16S/4S = #4 SAE
CP20-3S-20S/4S = #4 SAE

Pilot port

Differential control pressure

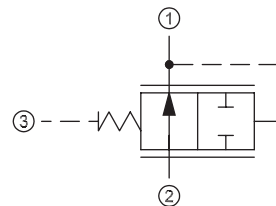
bar	[psi]
050	3.4 [50]
080	5.5 [80]
100	6.9 [100]
130	9.0 [130]
150	10.3 [150]

P103 307

OPERATION

This is a spool-type logic element with multi-function potential when used with other pressure, flow, or direction control devices.

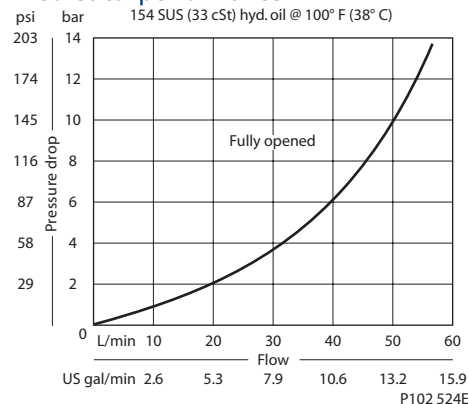
Schematic



P102 429E

SPECIFICATIONS

Theoretical performance



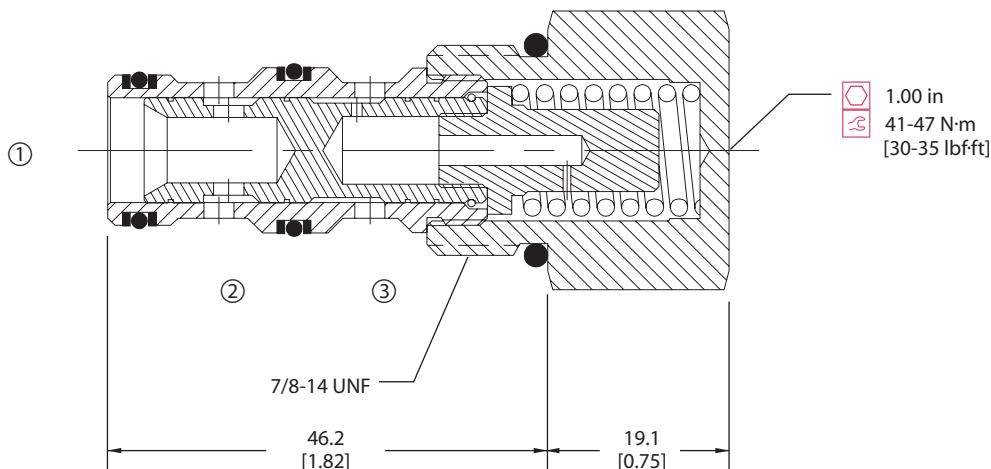
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	40 l/min [11 US gal/min]
Weight	0.13 kg [0.28 lb]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



P102 516E

ORDERING INFORMATION

CP700 - 4 - B - 8S - 080

Seals

B = Buna-N
V = Viton

Seal kit
120009
120010

Housing and ports

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

Housing P/N

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

Differential Control Pressure

bar	[psi]
040	2.8 [40]
080	5.5 [80]
110	7.6 [110]
150	10.3 [150]
200	13.8 [200]

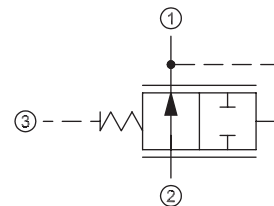
Logic elements
CP700-4

P102 034E

OPERATION

This is a spool-type logic element with multi-function potential when used with other pressure, flow, or direction control devices.

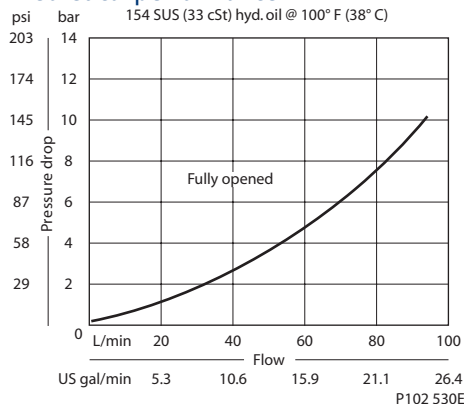
Schematic



P102 429E

SPECIFICATIONS

Theoretical performance



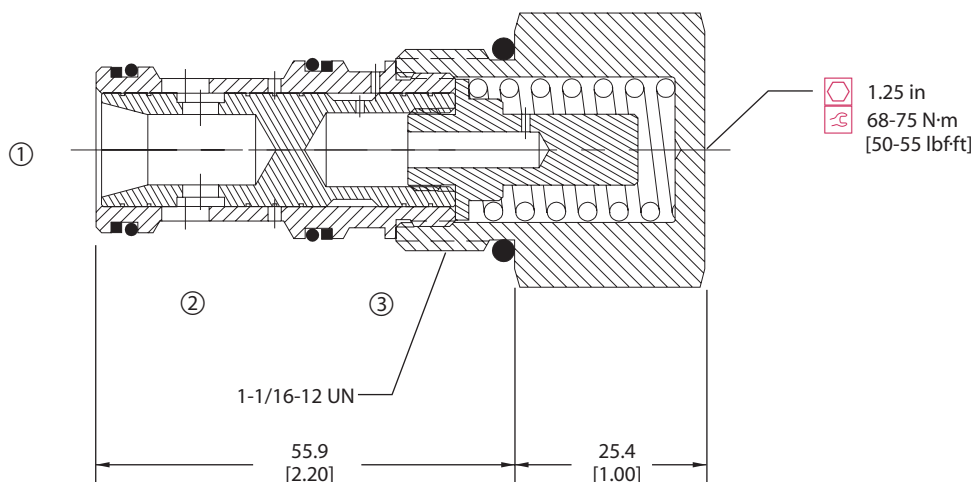
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	75 l/min [20 US gal/min]
Weight	0.26 kg [0.57 lb]
Cavity	CP12-3S

DIMENSIONS

mm [in]

Cross-sectional view



P102 510E

ORDERING INFORMATION

CP701 - 4 - B - 12S - 080

Seals

B = Buna-N
V = Viton

Seal kit
120335
120336

Housing and ports

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

Housing P/N

No housing
CP12-3S-4B/2B = 1/4 BSP
CP12-3S-6B/2B = 1/4 BSP
CP12-3S-10S/4S = #4 SAE
CP12-3S-12S/4S = #4 SAE

Pilot port

Differential Control Pressure

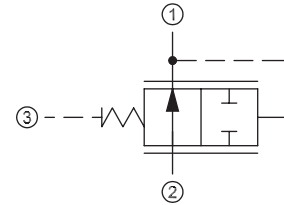
bar	[psi]
030	= 2.1 [30]
050	= 3.5 [50]
080	= 5.5 [80]
100	= 6.9 [100]
150	= 10.3 [150]

Logic Element, Spool Type
CP702-4

OPERATION

This is a spool-type logic element with multi-function potential when used with other pressure, flow, or direction control devices.

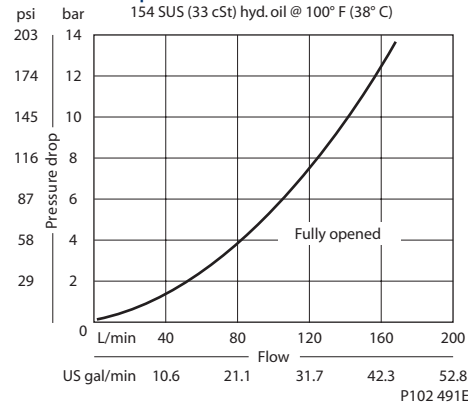
Schematic



P102 429E

SPECIFICATIONS

Theoretical performance



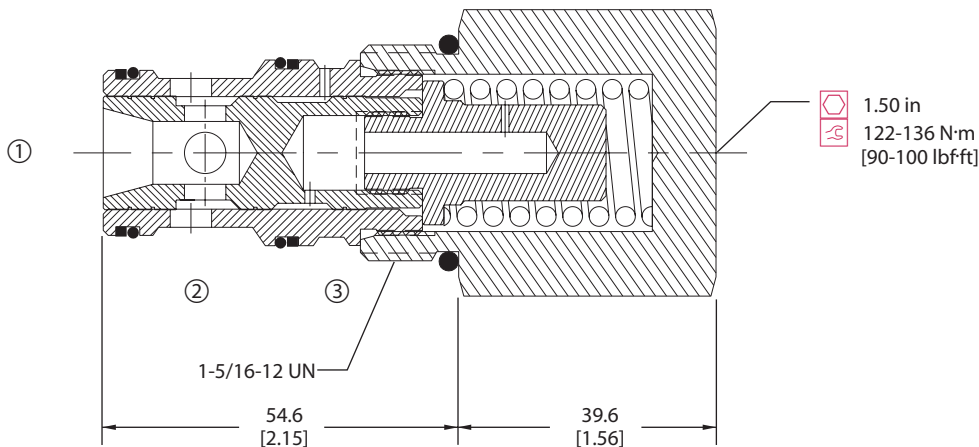
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	114 l/min [30 US gal/min]
Weight	0.38 kg [0.83 lb]
Cavity	SDC16-3S

DIMENSIONS

mm [in]

Cross-sectional view



P102 523E

ORDERING INFORMATION

CP702 - 4 - B - 16S - 080

Seals

B = Buna-N
V = Viton

Seal kit
120033
120034

Housing and ports

0 = No housing
6B = AL, 3/4 BSP
8B = AL, 1 BSP
12S = AL, #12 SAE
16S = AL, #16 SAE
Other housings available

Housing P/N Pilot port
No housing
CP16-3S-6B/2B = 1/4 BSP
CP16-3S-8B/2B = 1/4 BSP
CP16-3S-12S/4S = #4 SAE
CP16-3S-12S/4S = #4 SAE

Differential Control Pressure

bar	[psi]
040	= 2.8 [40]
080	= 5.5 [80]
110	= 7.6 [110]
150	= 10.3 [150]
190	= 13.1 [190]

P102 020E

Cartridge Valves Technical Information

Logic Elements

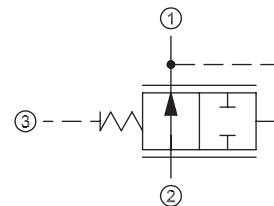
Logic Element, Spool Type

CP703-4

OPERATION

This is a spool-type logic element with multi-function potential when used with other pressure, flow, or direction control devices.

Schematic

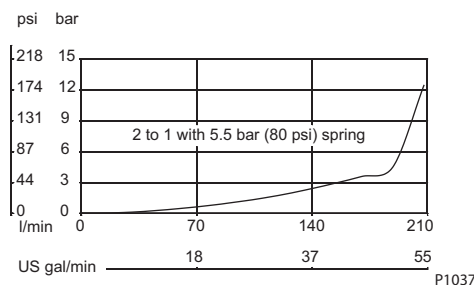


P102 429E

Theoretical performance

Pressure Drop

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



P1037

SPECIFICATIONS

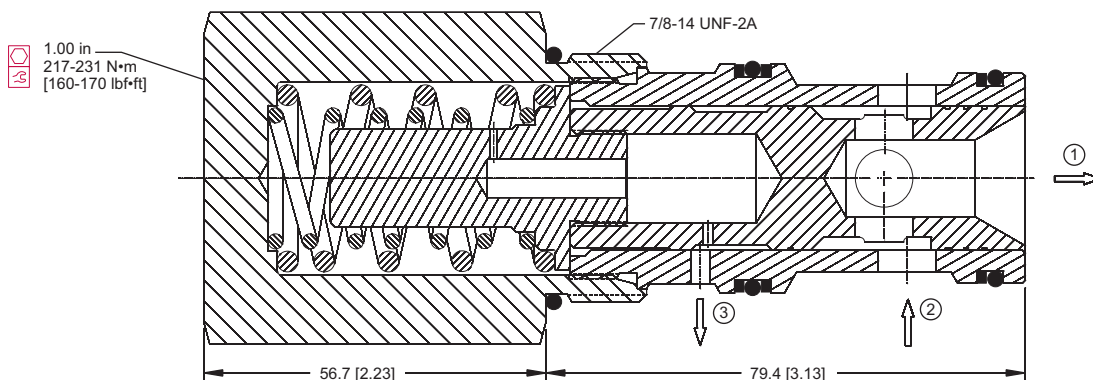
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	200 l/min [53 US gal/min]
Weight	1.18 kg [2.60 lb]
Cavity	CP20-3S

DIMENSIONS

mm [in]

Cross-sectional view



P103 749

ORDERING INFORMATION

CP703-4-B-8B-050

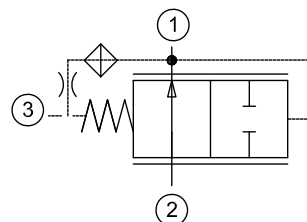
Seals		Differential Control Pressure
B = Buna-N	Seal kit 120380	050 = 3.5 [50]
V = Viton	Seal kit 120381	080 = 5.5 [80]
Housing and ports	Housing P/N	100 = 6.9 [100]
0 = No housing	No housing	130 = 9.0 [130]
8B = AL, 1 BSP	CP20-3S-8B/2B = 1/4 BSP	150 = 10.3 [150]
10B = AL, 1-1/4 BSP	CP20-3S-10B/2B = 1/4 BSP	
16S = AL, #16 SAE	CP20-3S-16S/4S = #4 SAE	
20S = AL, #20 SAE	CP20-3S-20S/4S = #4 SAE	
other housings available		

P103 763E

OPERATION

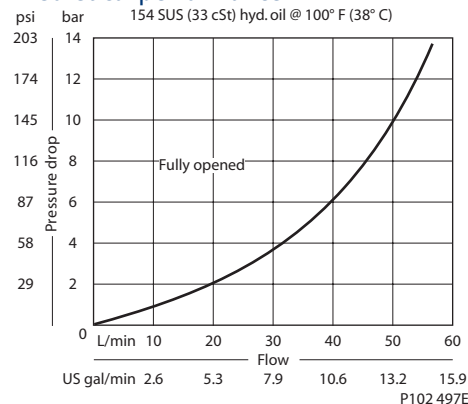
This is a spool-type logic element with multi-function potential when used with other pressure, flow, or direction control devices.

Schematic



SPECIFICATIONS

Theoretical performance



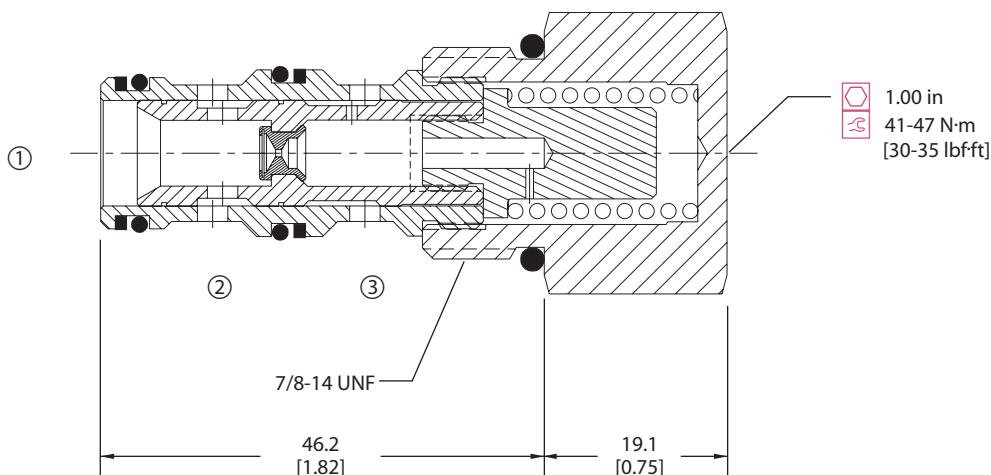
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	40 l/min [11 US gal/min]
Weight	0.13 kg [0.28 lb]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



P102 517E

ORDERING INFORMATION

CP700 - 3 - B - 8S - 080

Seals

B = Buna-N
V = Viton

Seal kit
120027
120028

Housing and ports

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

Housing P/N

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

Differential Control Pressure

	bar	[psi]
040	2.8	[40]
080	5.5	[80]
110	7.6	[110]
150	10.3	[150]
200	13.8	[200]

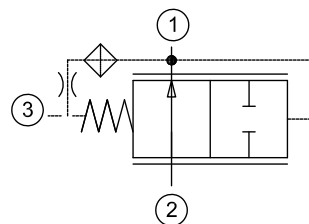
P102 033E

Logic elements
CP700-3

OPERATION

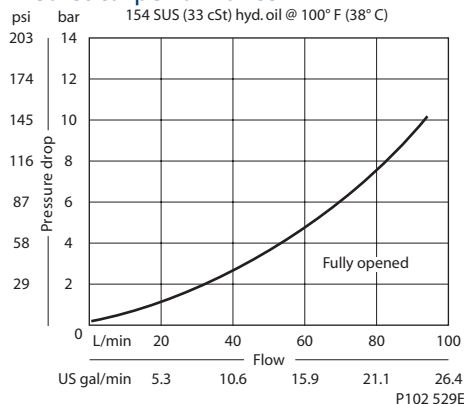
This is a spool-type logic element with multi-function potential when used with other pressure, flow, or direction control devices.

Schematic



SPECIFICATIONS

Theoretical performance



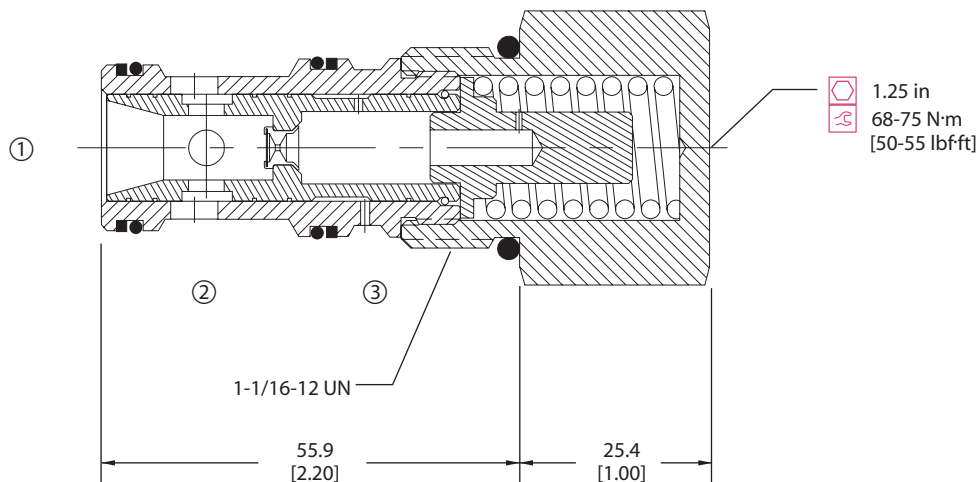
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	80 l/min [21 US gal/min]
Weight	0.26 kg [0.57 lb]
Cavity	CP12-3S

DIMENSIONS

mm [in]

Cross-sectional view



P102 511E

ORDERING INFORMATION

CP701 - 3 - B - 12S - 080

Seals

B = Buna-N
V = Viton

Seal kit
120335
120336

Housing and ports

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

Housing P/N

No housing
CP12-3S-4B/2B = 1/4 BSP
CP12-3S-6B/2B = 1/4 BSP
CP12-3S-10S/4S = #4 SAE
CP12-3S-12S/4S = #4 SAE

Pilot port

Differential Control Pressure

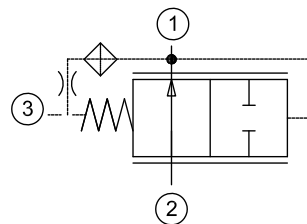
bar	[psi]
030	= 2.1 [30]
050	= 3.5 [50]
080	= 5.5 [80]
100	= 6.9 [100]
150	= 10.3 [150]

P102 046E

OPERATION

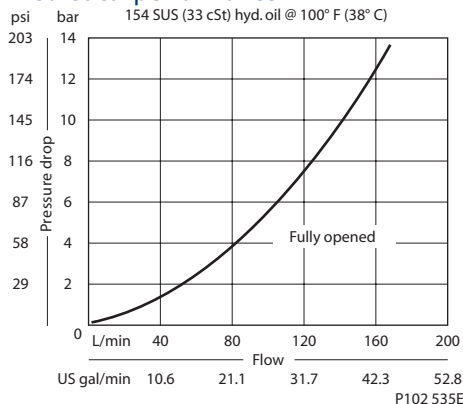
This is a spool-type logic element with multi-function potential when used with other pressure, flow, or direction control devices.

Schematic



SPECIFICATIONS

Theoretical performance



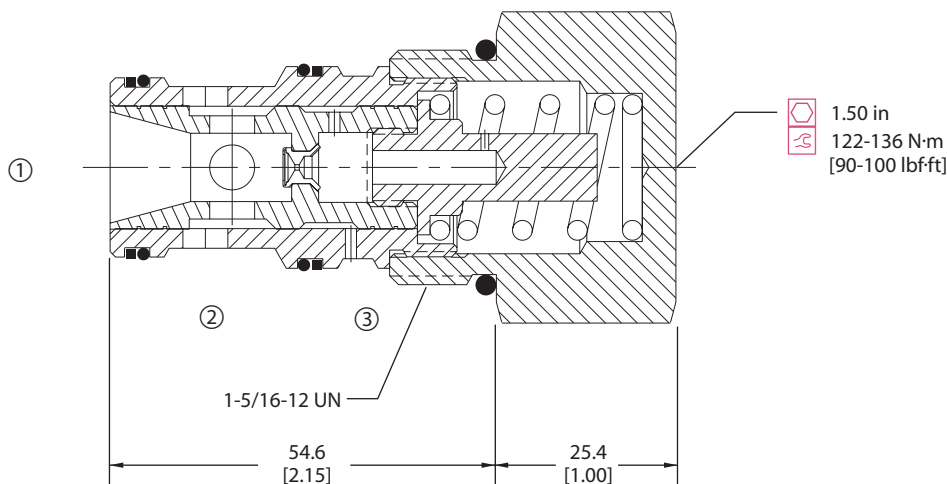
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	115 l/min [30 US gal/min]
Weight	0.38 kg [0.83 lb]
Cavity	SDC16-3S

DIMENSIONS

mm [in]

Cross-sectional view



P102 505E

ORDERING INFORMATION

CP702 - 3 - B - 16S - 080

Seals

B = Buna-N
V = Viton

Seal kit
120033
120034

Housing and ports

0 = No housing
6B = AL, 3/4 BSP
8B = AL, 1 BSP
12S = AL, #12 SAE
16S = AL, #16 SAE
Other housings available

Housing P/N Pilot port
No housing
CP16-3S-6B/2B = 1/4 BSP
CP16-3S-8B/2B = 1/4 BSP
CP16-3S-12S/4S = #4 SAE
CP16-3S-12S/4S = #4 SAE

Differential Control Pressure

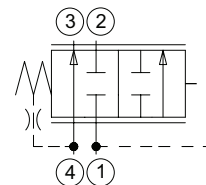
bar	[psi]
040	2.8 [40]
080	5.5 [80]
110	7.6 [110]
150	10.3 [150]
190	13.1 [190]

P102 059E

OPERATION

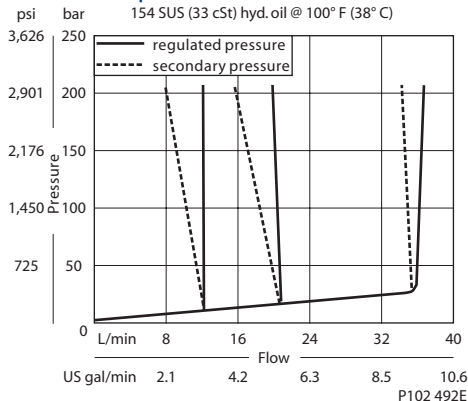
This valve is a priority type pressure compensator.

Schematic



SPECIFICATIONS

Theoretical performance



P102 489E

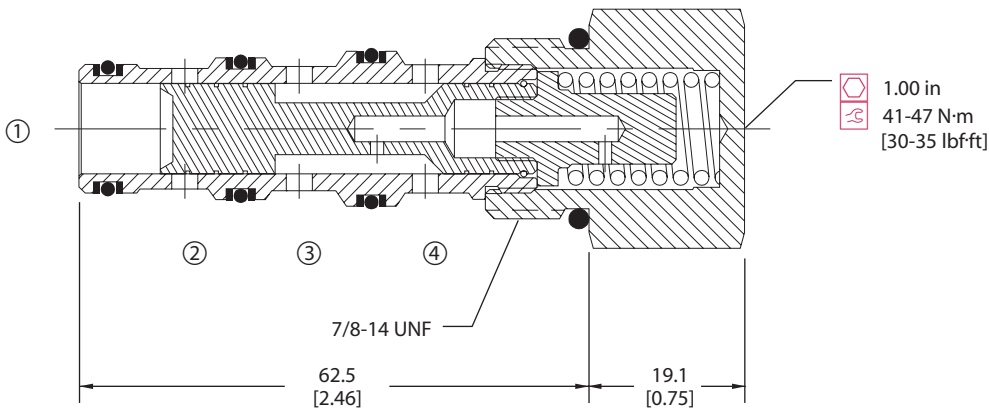
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	40 l/min [11 US gal/min]
Weight	0.15 kg [0.32 lb]
Cavity	SDC10-4

DIMENSIONS

mm [in]

Cross-sectional view



P102 522E

ORDERING INFORMATION

CP310 - 4 - B - 8S - 080

Seals

B = Buna-N
V = Viton

Seal kit
120023
120024

Housing and ports

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

Housing P/N

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

Differential Control Pressure

	bar	[psi]
040	= 2.8	[40]
080	= 5.5	[80]
110	= 7.6	[110]
150	= 10.3	[150]
190	= 13.1	[190]

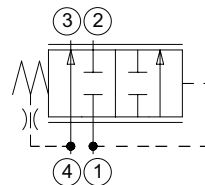
P102 022E

Logic elements
CP310-4

OPERATION

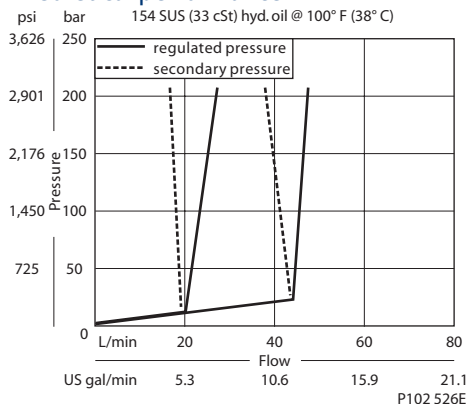
This valve is a priority type pressure compensator.

Schematic



SPECIFICATIONS

Theoretical performance



P102 489E

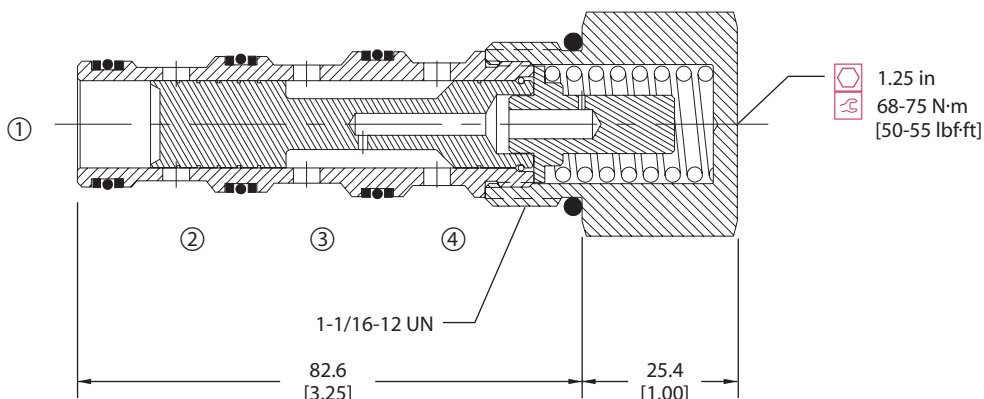
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	60 l/min [16 US gal/min]
Weight	0.31 kg [0.69 lb]
Cavity	CP12-4

DIMENSIONS

mm [in]

Cross-sectional view



P102 514E

ORDERING INFORMATION

CP311 - 4 - B - 10S - 080

Seals

- B = Buna-N
- V = Viton

- Seal kit 120262
- 120263

Housing and ports

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

Housing P/N

- No housing CP12-4-10S
- CP12-4-12S
- CP12-4-3B
- CP12-4-4B

Differential Control Pressure

- 050 = 3.5 [50]
- 080 = 5.5 [80]
- 100 = 6.9 [100]
- 150 = 10.3 [150]

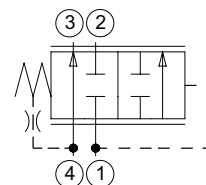
P102 039E

Logic elements
CP311-4

OPERATION

This valve is a priority type pressure compensator.

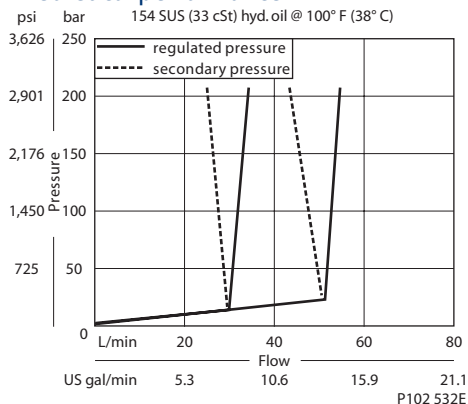
Schematic



P102 489E

SPECIFICATIONS

Theoretical performance



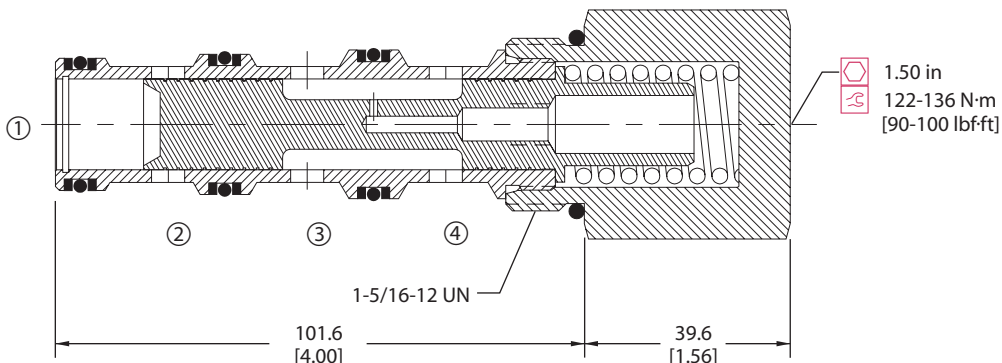
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	130 l/min [34 US gal/min]
Weight	0.60 kg [1.32 lb]
Cavity	CP16-4

DIMENSIONS

mm [in]

Cross-sectional view



P102 508E

ORDERING INFORMATION

CP312 - 4 - B - 16S - 080

Seals

B = Buna-N
V = Viton

Seal kit
120025
120026

Housing and ports

0 = No housing
6B = AL, 3/4 BSP
8B = AL, 1 BSP
12S = AL, #12 SAE
16S = AL, #16 SAE
Other housings available

Housing P/N

No housing
CP16-4-6B
CP16-4-8B
CP16-4-12S
CP16-4-16S

Differential Control Pressure

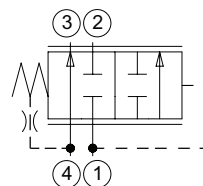
bar	[psi]
040	= 2.8 [40]
080	= 5.5 [80]
110	= 7.6 [110]
150	= 10.3 [150]

P102 051E

OPERATION

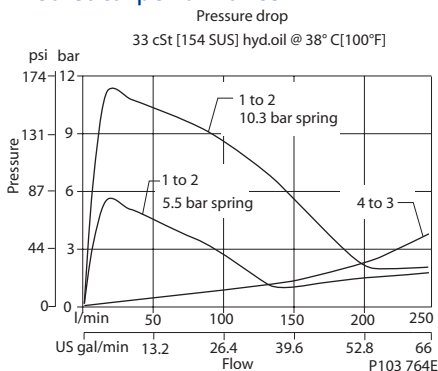
This valve is a priority type pressure compensator.

Schematic



SPECIFICATIONS

Theoretical performance



P102 489E

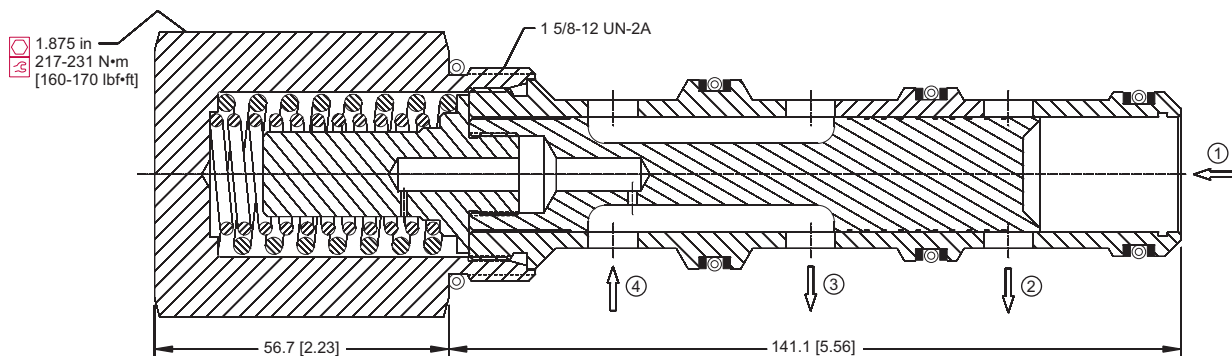
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	340 l/min [90 US gal/min]
Weight	1.30 kg [2.80 lb]
Cavity	SDC20-4

DIMENSIONS

mm [in]

Cross-sectional view



P103 750

ORDERING INFORMATION

CP313-4-B-16S-130

Seals		Seal kits		Differential control pressure	
B = Buna-N		120181		050 = 3.4	50
V = Viton		120182		080 = 5.5	80
Housing and ports		Housing P/N		100 = 6.9	100
0 = No Housing		No Housing		130 = 9.0	130
8B = AL, 1 BSP		CP20-4-8B		150 = 10.3	150
10B = AL, 1-1/4 BSP		CP20-4-10B			
16S = AL, #16 SAE		CP20-4-16S			
20S = AL, #20 SAE		CP20-4-20S			
Other housings available					

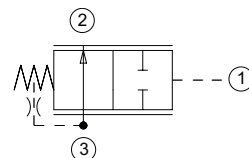
P103 765E

Logic elements
CP313-4

OPERATION

This valve is a restrictive type pressure compensator.

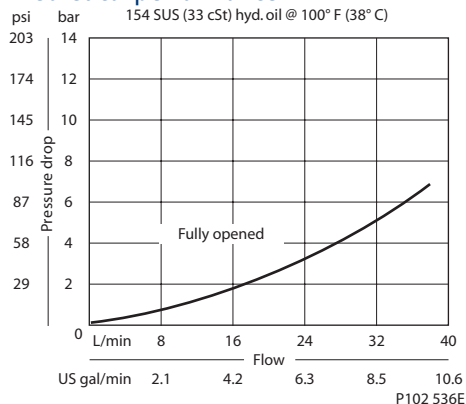
Schematic



P102 490E

SPECIFICATIONS

Theoretical performance



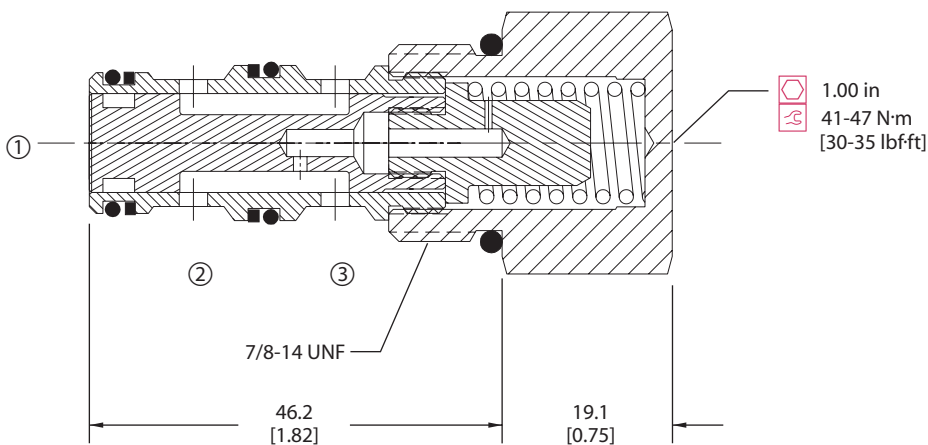
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	40 l/min [11 US gal/min]
Weight	0.13 kg [0.29 lb]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



P102 504E

ORDERING INFORMATION

CP300 - 4 - B - 8S - 0 - 080

Seals

B = Buna-N
V = Viton

Seal kit
120027
120028

Housing and ports

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

Housing P/N

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

Differential Control Pressure

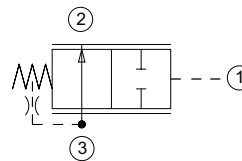
bar	[psi]
040	2.8 [40]
080	5.5 [80]
110	7.6 [110]
150	10.3 [150]
190	13.1 [190]

P102 060E

OPERATION

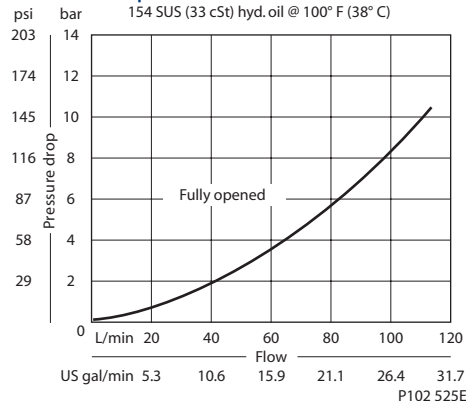
This valve is a restrictive type pressure compensator.

Schematic



SPECIFICATIONS

Theoretical performance



P102 490E

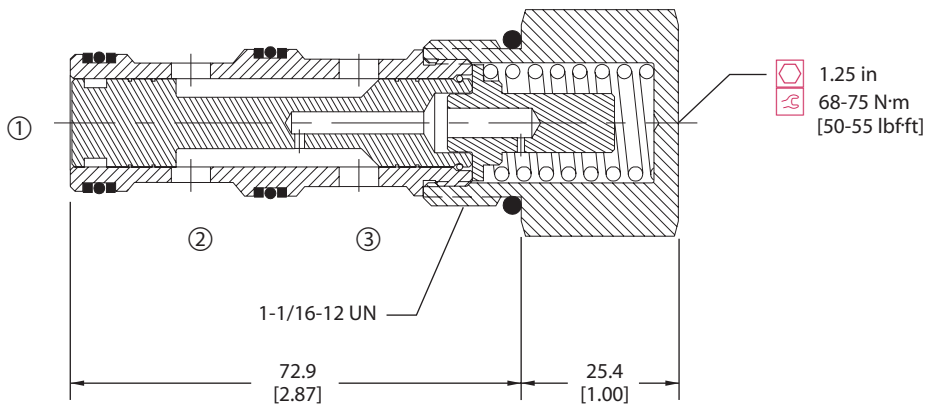
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	90 l/min [24 US gal/min]
Weight	0.30 kg [0.67 lb]
Cavity	CP12-3

DIMENSIONS

mm [in]

Cross-sectional view



P102 515E

ORDERING INFORMATION

CP301 - 4 - B - 12S - 0 - 080

Seals

B = Buna-N
V = Viton

Seal kit
120053
120052

Housing and ports

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

Housing P/N

No housing
CP12-3-10S
CP12-3-12S
CP12-3-4B
CP12-3-6B

Differential Control Pressure

	bar	[psi]
050	= 3.5	[50]
080	= 5.5	[80]
100	= 6.9	[100]
150	= 10.3	[150]
190	= 13.1	[190]

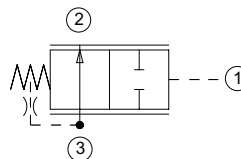
P102 038E

Logic elements
CP301-4

OPERATION

This valve is a restrictive type pressure compensator.

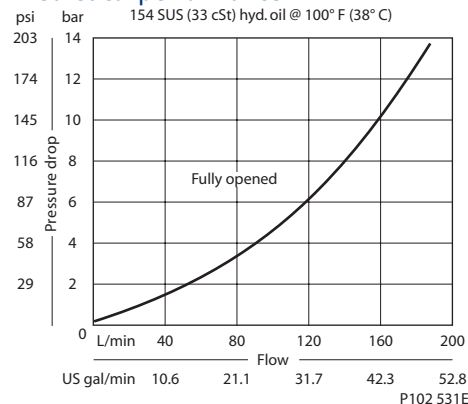
Schematic



P102 490E

SPECIFICATIONS

Theoretical performance



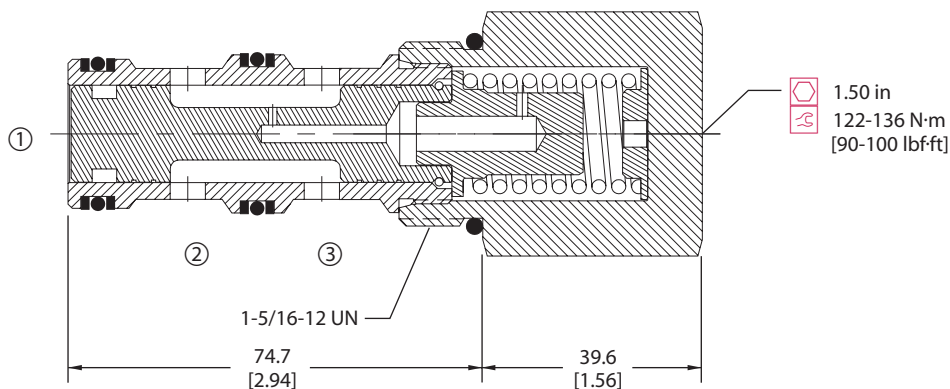
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	130 l/min [34 US gal/min]
Weight	0.56 kg [1.24 lb]
Cavity	SDC16-3

DIMENSIONS

mm [in]

Cross-sectional view



P102 509E

ORDERING INFORMATION

CP302 - 4 - B - 16S - 0 - 080

Seals

B = Buna-N
V = Viton

Seal kit
120202
120203

Housing and ports

0 = No housing
SE6B = AL, 3/4 BSP
SE8B = AL, 1 BSP
12S = AL, #12 SAE
16S = AL, #16 SAE
Other housings available

Housing P/N
No housing
SDC16-3-SE-6B
SDC16-3-SE-8B
CP16-3-12S
CP16-3-16S

Differential Control Pressure

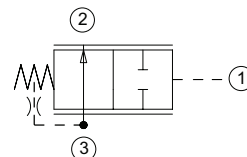
bar	[psi]
040	= 2.8 [40]
080	= 5.5 [80]
100	= 6.9 [100]
150	= 10.3 [150]
230	= 15.9 [230]

P102 050E

OPERATION

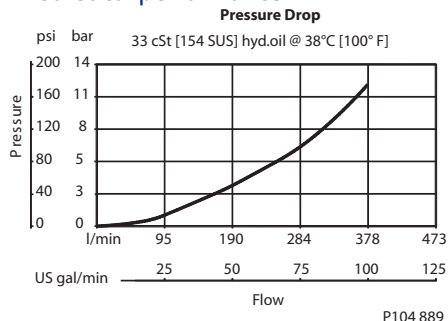
This is a restrictive-type pressure-compensator.

Schematic



SPECIFICATIONS

Theoretical performance



P102 490E

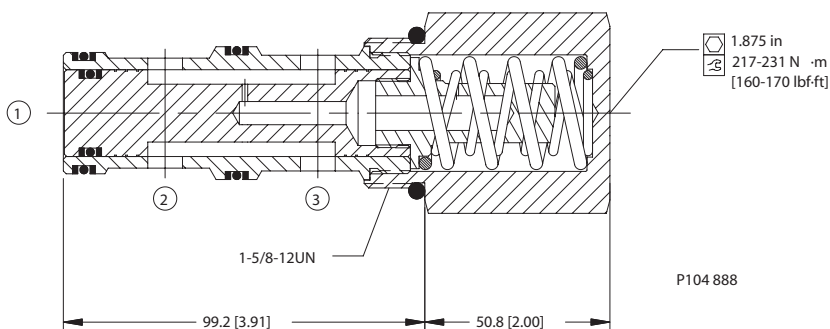
Specifications

Rated pressure	210 bar [3045 psi]
Rated flow at 7 bar [100 psi]	284 l/min [75 US gal/min]
Weight	1.11 kg [2.45 lb]
Cavity	SDC20-3

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP303-4-B-16S-0-150

Seals	Seal kit	Differential Control Pressure
B = BUNA-N V = VITON	120200 120201	bar [psi]
Housing and ports	Housing P/N	050 = 3.4 [50]
0 = Cartridge only 16S = AL, #16 SAE 20S = AL, #20 SAE 8B = AL, 1 BSP 10B = AL, 1-1/4 BSP other housings available	No Body CP20-3-16S CP20-3-20S CP20-3-3B CP20-3-4B	080 = 5.5 [80] 100 = 6.9 [100] 130 = 9.0 [130] 150 = 10.3 [150]

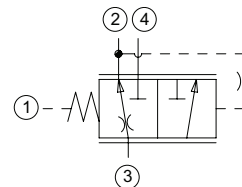
P104 890

Logic elements
CP303-4CA

OPERATION

This is a static load sense priority valve.

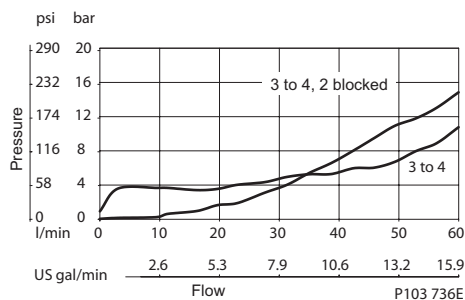
Schematic



Theoretical performance

Pressure Drop

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



SPECIFICATIONS

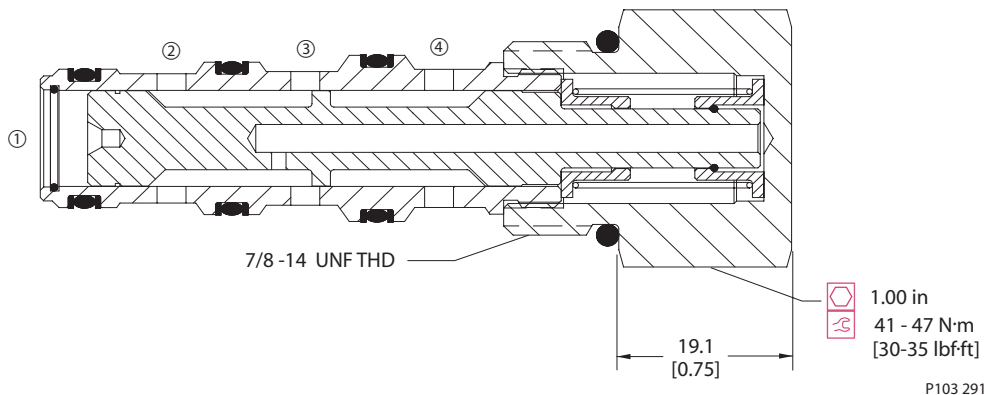
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	40 l/min [11 US gal/min]
Weight	0.15 kg [0.33 lb]
Cavity	SDC10-4

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP310 - 6 - B - 8S - 080

Seals

B = Buna-N
V = Viton

Seal kit
120023
120024

Housing and ports

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

Housing P/N

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

Compensator Spring

bar [psi]
080 = 5.5 [80]

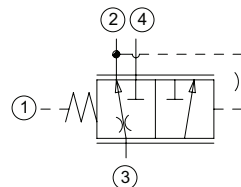
P103 295

Logic elements
CP310-6

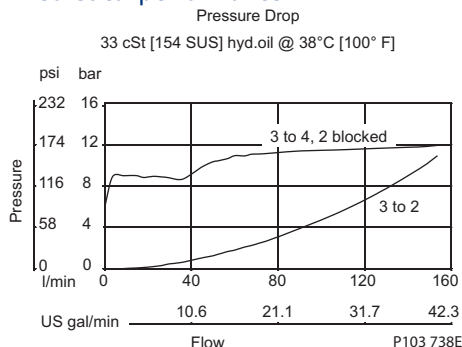
OPERATION

This is a static load sense priority valve.

Schematic



Theoretical performance



SPECIFICATIONS

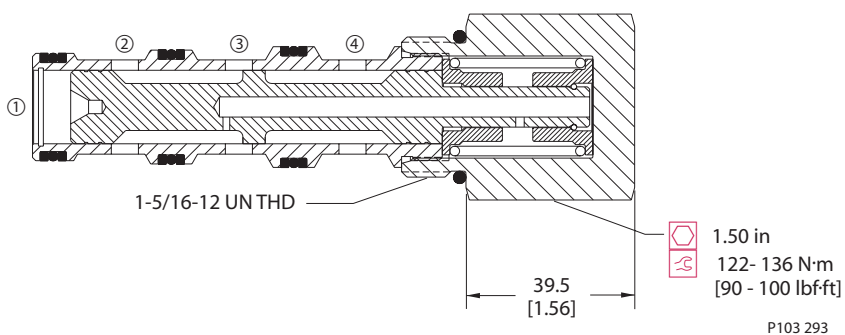
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	125 l/min [33 US gal/min]
Weight	0.63 kg [1.39 lb]
Cavity	CP16-4

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP312 - 6 - B - 12S - 080

Seals

- B = Buna-N
- V = Viton

Seal kit
120025
120026

Housing and ports

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

Housing P/N

- No housing
- CP16-4-6B
- CP16-4-8B
- CP16-4-12S
- CP16-4-16S

Compensator Spring

- 080 = 5.5 [80]

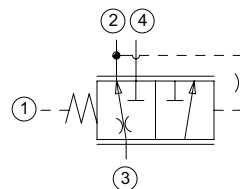
Logic elements
CP312-6

P103 298

OPERATION

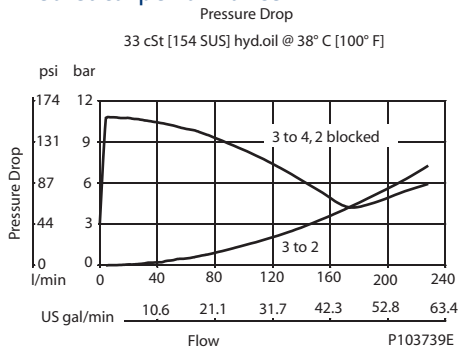
This is a static load sense priority valve.

Schematic



SPECIFICATIONS

Theoretical performance



P103 495

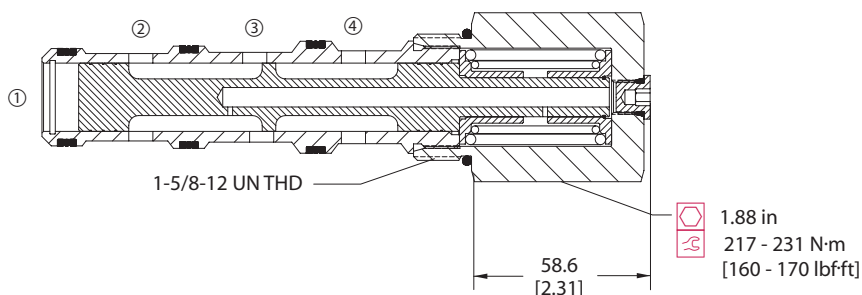
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	200 l/min [53 US gal/min]
Weight	1.33 kg [2.93 lb]
Cavity	SDC20-4

DIMENSIONS

mm [in]

Cross-sectional view



P103 294

ORDERING INFORMATION

CP313 - 6 - B - 16S - 080

Seals

B = Buna-N
V = Viton

Seal kit
120181
120182

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
CP20-4-8B
CP20-4-10B
CP20-4-16S
CP20-4-20S

Compensator Spring

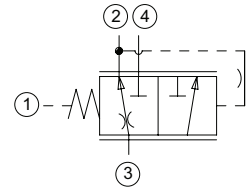
	bar	[psi]
050	= 3.4	[50]
080	= 5.5	[80]
100	= 6.9	[100]
130	= 9.0	[130]
150	= 10.3	[150]

P103 297

OPERATION

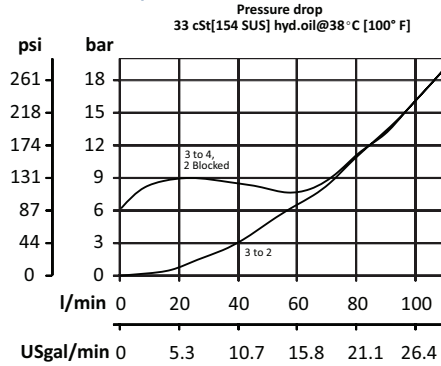
This is a static load sense priority valve.

Schematic



SPECIFICATIONS

Theoretical performance



P103 495

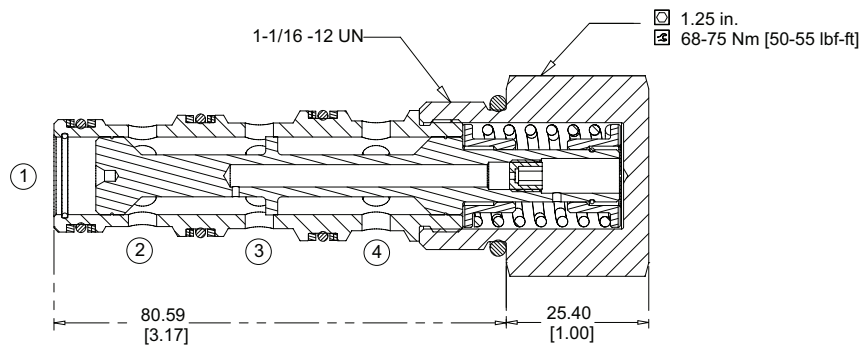
Specifications

Rated pressure	207 bar [3000 psi]
Rated flow at 7 bar [100 psi]	75 l/min [20 US gal/min]
Weight	0.31 kg [0.68 lb]
Cavity	CP12-4

DIMENSIONS

mm [in]

Cross-sectional view



P108 373E

ORDERING INFORMATION

PC12-LPS-5.5-B-00

Differential Control Pressure
5.5 = 5.5 bar [80 psi]
7.0 = 7 bar [100 psi]
10.0 = 10.0 bar [150 psi]

Housing and ports
00 = No Housing
3B = Al, 1/2 BSP
4B = Al, 3/4 BSP
10S = Al, #10 SAE
12S = Al, #12 SAE

Housing Part #
No Housing
CP12-4-3B
CP12-4-4B
CP12-4-10S
CP12-4-12S

Seals
B = Buna-N
V = Viton

Seal Kit
120262
120263

P108 375E

