

Comatrol

RESPONSIVENESS IN MOTION

Member of the Danfoss Group



Logic Elements

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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]	LE - 12

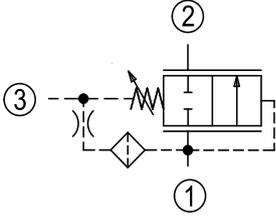
Logic Element, Poppet Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	VLP 12/A5	NCS12/3	Logic Element Poppet, Normally Closed, Pilot to Close	160 l/min [42 US gal/min]	315 bar [4500 psi]	LE - 14

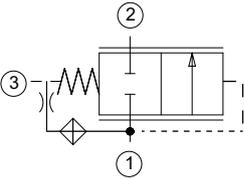
Logic Element, Poppet Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	VLP 12/C2	NCS12/3	Logic Element Poppet, Normally Closed, Vent to Open	160 l/min [42 US gal/min]	315 bar [4500 psi]	LE - 16

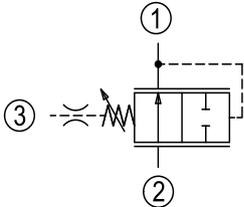
Logic Element, Spool Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	HLEA10-CPC	SDC10-3S	Logic Element, Normally Closed, Pilot to Close	80 l/min [21 US gal/min]	350 bar [5075 psi]	LE - 18

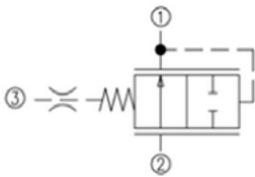
Logic Element, Spool Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP700-1	SDC10-3	Logic Element, Normally Closed, Pilot to Close	50 l/min [13 US gal/min]	210 bar [3045 psi]	LE - 20
	HLE10-CPC	SDC10-3S		80 l/min [21.1 US gal/min]	350 bar [5075 psi]	LE - 22
	CP701-1	CP12-3S		150 l/min [40 US gal/min]	210 bar [3045 psi]	LE - 24
	CP702-1	SDC16-3S		190 l/min [50 US gal/min]]	210 bar [3045 psi]	LE - 26
	LE20-CPC	CP20-3S		320 l/min [90 US gal/min]	207 bar [3000 psi]	LE - 28

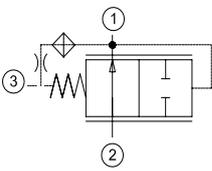
* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

Logic Element, Spool Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	HLEA10-CVO	SDC10-3S	Logic Element, Normally Closed, Vent to Open	80 l/min [21 US gal/min]	350 bar [5075 psi]	LE - 30

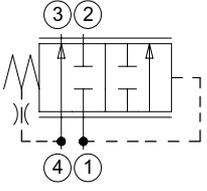
Logic Element, Spool Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP700-2	SDC10-3	Logic Element, Normally Closed, Vent to Open	50 l/min [13 US gal/min]	210 bar [3045 psi]	LE - 32
	HLE10-CVO	SDC10-3S		80 l/min [21.1 US gal/min]	350 bar [5075 psi]	LE - 34
	CP701-2	CP12-3S		150 l/min [40 US gal/min]	210 bar [3045psi]	LE - 36
	CP702-2	SDC16-3S		190 l/min [50 US gal/min]	210 bar [3045psi]	LE - 38
	CP703-2	CP20-3S		320 l/min [85 US gal/min]	210 bar [3045psi]	LE - 40

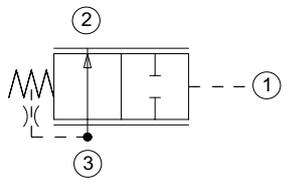
Logic Element, Spool Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	HLEA10-OPO	SDC10-3S	Logic Element, Normally Open, Pilot to Open	60 l/min [16 US gal/min]	350 bar [5075 psi]	LE - 42

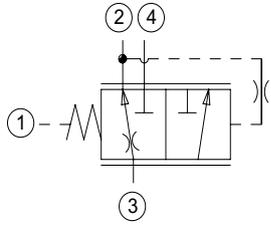
Logic Element, Spool Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP700-4	SDC10-3	Logic Element, Normally Open, Pilot to Open	40 l/min [11 US gal/min]	210 bar [3045 psi]	LE - 44
	HLE10-OPO	SDC10-3S		60 l/min [15.8 US gal/min]	350bar [5075 psi]	LE - 46
	CP701-4	CP12-3S		75 l/min [20 US gal/min]	210 bar [3045 psi]	LE - 48
	CP702-4	SDC16-3S		114 l/min [30 US gal/min]	210 bar [3045 psi]	LE - 50
	CP703-4	CP20-3S		200 l/min [53 US gal/min]	210 bar [3045 psi]	LE - 52

Logic Element, Spool Type	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP700-3	SDC10-3	Logic Element, Normally Open, Vent to Close	40 l/min [11 US gal/min]	210 bar [3045 psi]	LE - 54
	CP701-3	CP12-3S		80 l/min [21 US gal/min]	210 bar [3045 psi]	LE - 56
	CP702-3	SDC16-3S		115 l/min [30 US gal/min]	210 bar [3045 psi]	LE - 58

* 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
	CP310-4	SDC10-4	Pressure Compensator, Flow Control, Priority	40 l/min [11 US gal/min]	210 bar [3045 psi]	LE - 60
	CP311-4	CP12-4		60 l/min [16 US gal/min]	210 bar [3045 psi]	LE - 62
	CP312-4	CP16-4		130 l/min [34 US gal/min]	210 bar [3045 psi]	LE - 64
	CP313-4	SDC20-4		340 l/min [90 US gal/min]	210 bar [3045 psi]	LE - 66

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 [3045 psi]	LE - 68
	CP301-4	CP12-3		90 l/min [24 US gal/min]	210 bar [3045 psi]	LE - 70
	CP302-4	SDC16-3		130 l/min [34 US gal/min]	210 bar [3045 psi]	LE - 72
	CP303-4	SDC20-3		284 l/min [75 US gal/min]	210 bar [3045 psi]	LE - 74

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 [3045 psi]	LE - 76
	PC12-LPS	CP12-4		114 l/min [30 US gal/min]	210 bar [3045 psi]	LE - 78
	PC16-LPS	CP16-4		125 l/min [30 US gal/min]	210 bar [3045 psi]	LE - 80
	CP313-6	SDC20-4		200 l/min [53 US gal/min]	210 bar [3045 psi]	LE - 82

* 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.

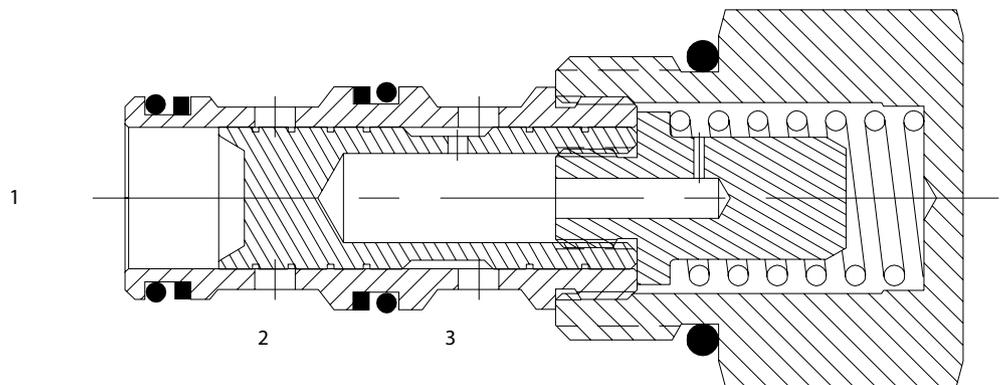
Differential sensing valves



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

Spring-biased, normally-closed differential sensing valves include: CP700-1, HLE10-CPC, HLEA10-CPC, CP701-1, and CP702-1. These valves are normally closed and will modulate based on the spring control pressure, inlet pressure at port 1, and pilot pressure at port 3.

Spring biased, normally closed, differential sensing valve cross section



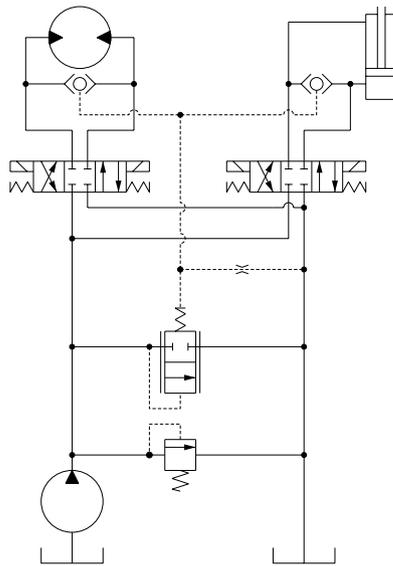
**SPRING BIASED,
 NORMALLY CLOSED,
 DIFFERENTIAL SENSING
 VALVES**

(continued)

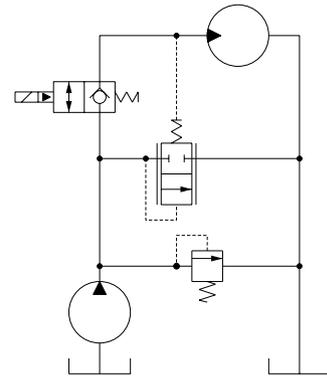
Common applications

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

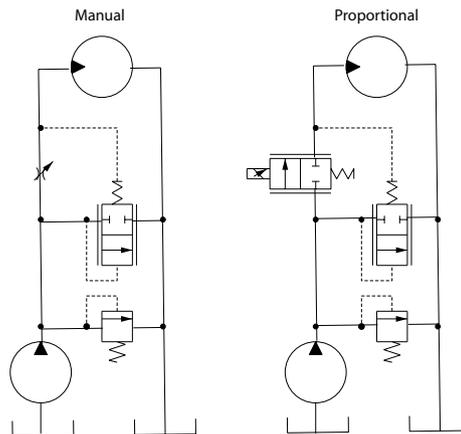
Multiple actuator load sensing



Single actuator load sensing



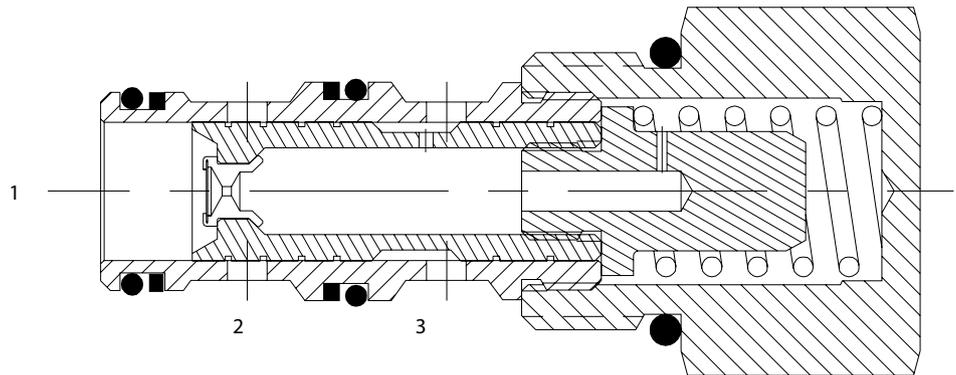
Bypass flow control



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

Spring-biased, normally-closed, vent-to-open differential sensing valves include: CP700-2, HLE10-CVO, HLEA10-CVO, CP701-2, and CP702-2. These valves are normally closed and will modulate based on the spring control pressure, inlet pressure at port 1, and pilot pressure at port 3.

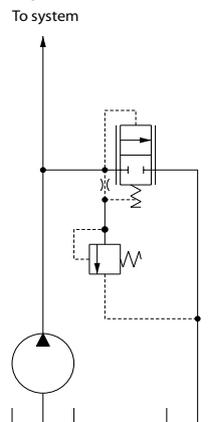
Spring biased, normally closed, vent to open differential sensing valve



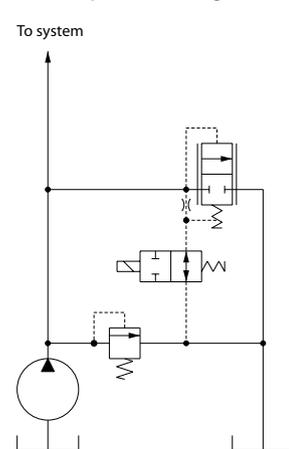
Common applications include:

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

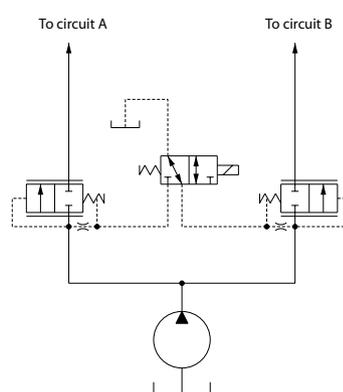
Pilot-operated relief valve



Pump unloading



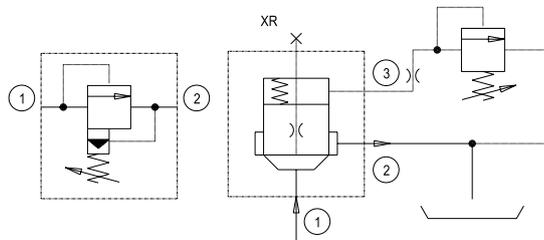
Selector valve



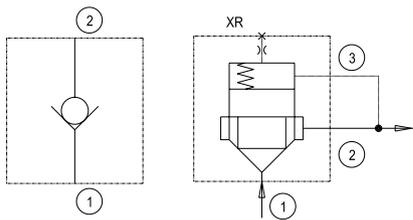
**LOGIC ELEMENT
 POPPET-TYPE
 CIRCUIT EXAMPLES**

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.

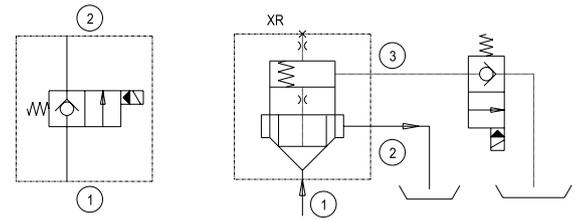
PRESSURE RELIEF VALVE VLP /P2



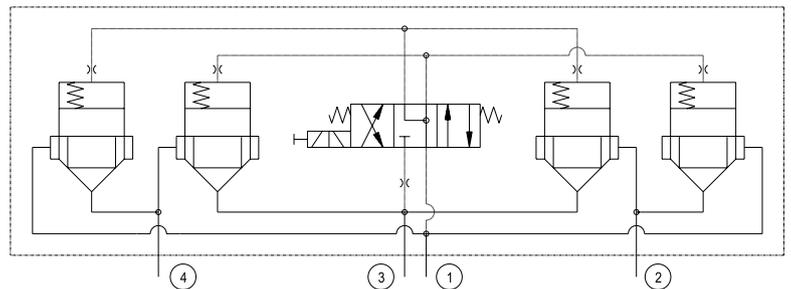
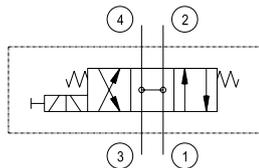
CHECK VALVE VLP /A5



DIRECTIONAL VALVE VLP /C2



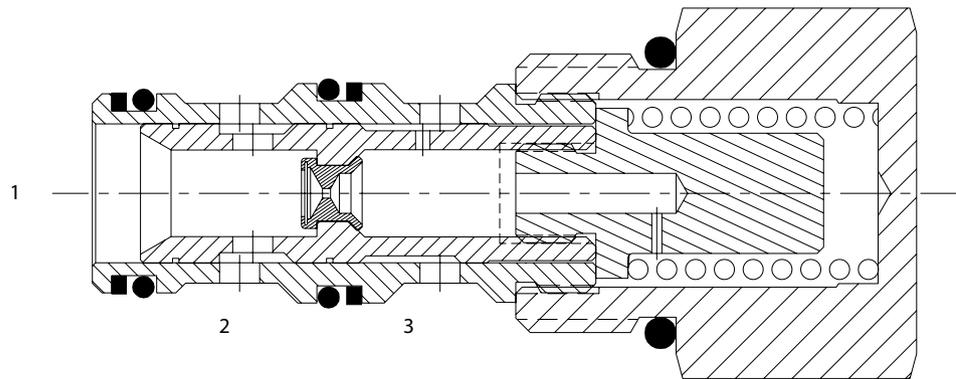
4-3 WAY ON-OFF VALVES VLP/A5



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

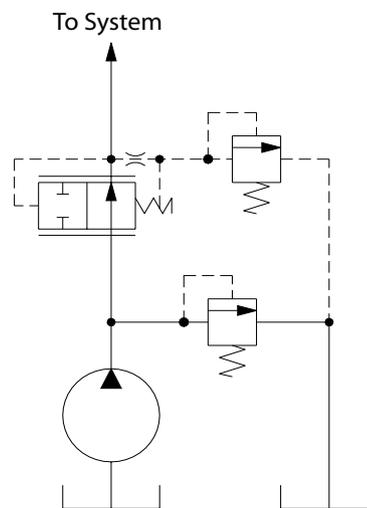
Spring-biased, normally-open, vent-to-close differential sensing valves include: CP700-3, CP701-3, and CP702-3. These valves are normally open and will modulate based on spring control pressure, outlet pressure at port 1, and pilot pressure at port 3. One application for this valve is to create a high-flow pressure reducing valve when using a small relief valve (like CP208-1), or a proportional relief valve (like PRV08-DAC) as a pilot element.

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



Common applications:

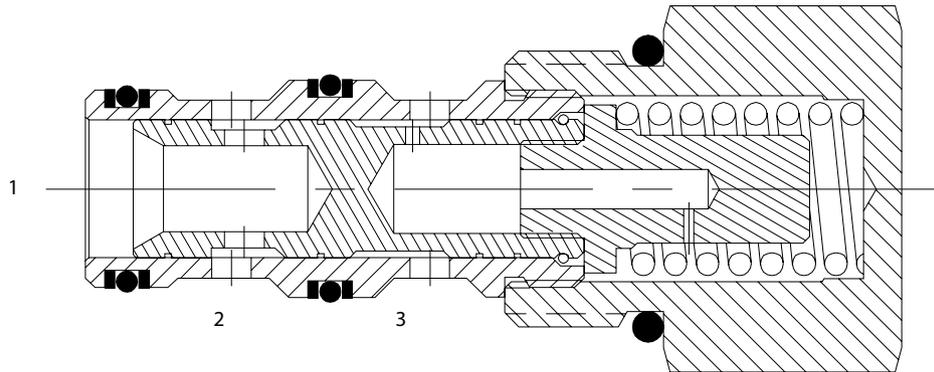
Pilot-operated pressure reducing valve



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

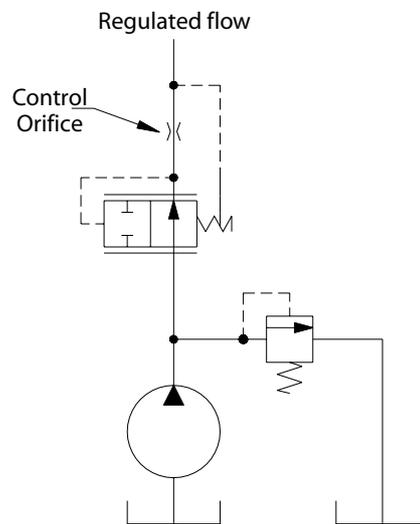
Spring-biased, normally-open differential sensing valves include: CP700-4, CP701-4, HLE10-OPO, HLEA10-OPO and CP702-4. These valves are normally open and will modulate based on spring control pressure, outlet pressure at port 1, and pilot pressure at port 3. One application for this valve is as a pressure compensator when used with a fixed or adjustable orifice to create a pressure-compensated flow control.

Spring biased, normally open, differential sensing valve



Common applications:

Pressure compensator



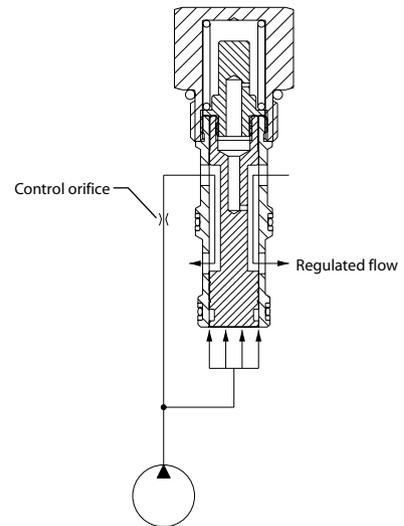
**PRESSURE
 COMPENSATING,
 DIFFERENTIAL SENSING
 VALVES**

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.

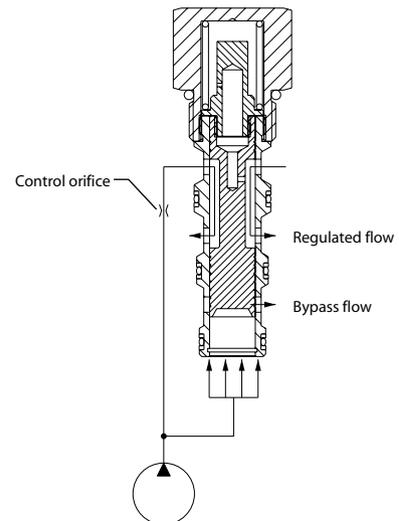
Restrictive-type pressure compensator operation



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



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.

OPERATION

The VLP 12/P2 is a metric 12-size, normally-closed, vent-to-open, poppet-type, double-blocking, spring biased differential-sensing logic element. It will provide on/off flow control from 1 to 2 based on the spring control pressure, inlet pressure at port 1, and pilot pressure at port 3.

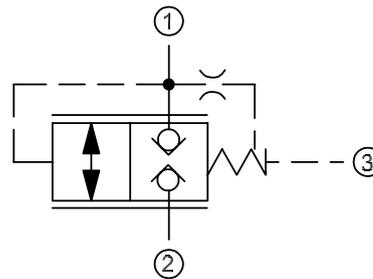
APPLICATION

The valve provides on/off, leakage-free control in both directions, suitable for use as a high flow relief valve when used with a relief valve to pilot. Common applications include: pump unloading, pilot-operated relief valve, sequence valve and selector circuit. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

SPECIFICATION

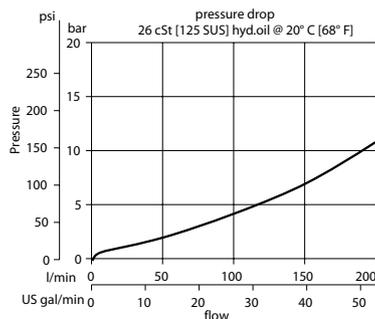
Rated pressure	315 bar [4500 psi]
Rated flow at 7 bar [100 psi]	160 l/min [42 US gal/min]
Weight	0.30 kg [0.66 lb]
Cavity	NCS12/3
Bias spring	2 bar [29 psi]

SCHEMATIC



PERFORMANCE CURVE

Theoretical performance

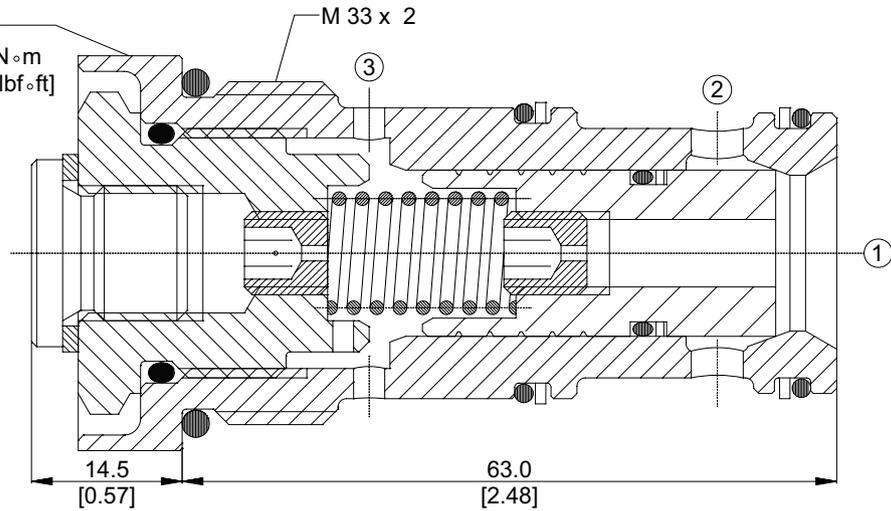


DIMENSION

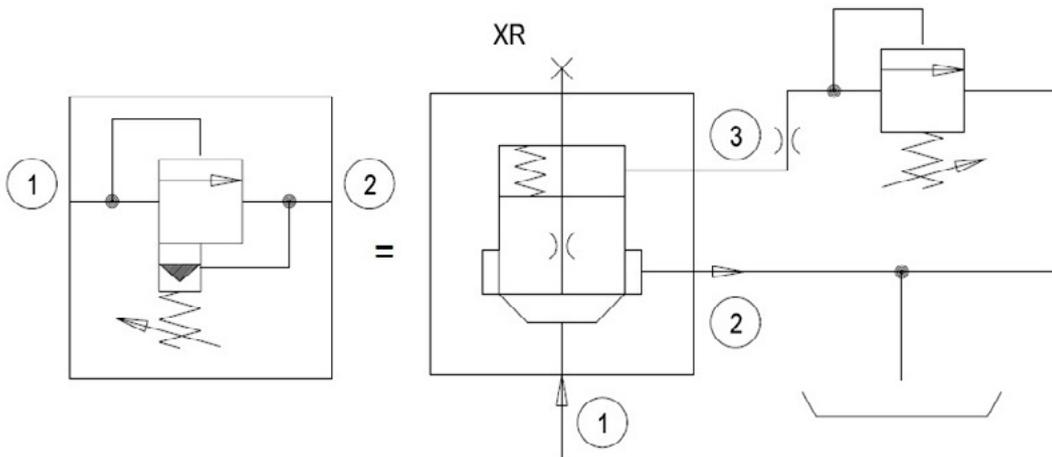
mm [in]

-  38 mm
-  64-70 N·m
[47-52 lbf·ft]

Cross-sectional view



EXAMPLE CIRCUITS



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

OPERATION

The VLP 12/A5 is a metric 12-size, normally-closed, pilot-to-close, poppet-type, spring biased differential-sensing logic element. It will provide on/off flow control from 1 to 2 based on the spring control pressure, inlet pressure at port 1, and pilot pressure at port 3.

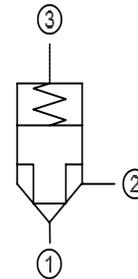
APPLICATION

The valve provides on/off, leakage-free control, suitable for use as a high flow check valve when piloted with a small check valve; or a high flow directional valve when piloted with a directional solenoid valve, using four VLP 12/A5 valves. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

SPECIFICATION

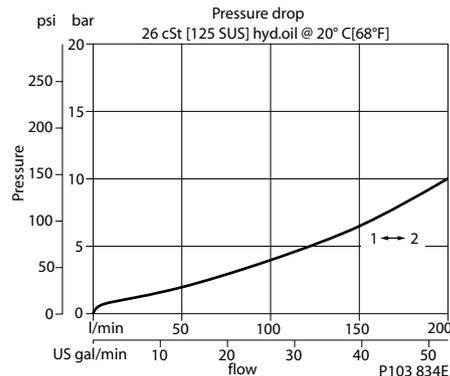
Rated pressure	315 bar [4500 psi]
Rated flow at 7 bar [100 psi]	160 l/min [42 US gal/min]
Weight	0.30 kg [0.66 lb]
Cavity	NCS12/3
Bias spring	2 bar [29 psi]

SCHEMATIC



PERFORMANCE CURVE

Theoretical performance



LE - Logic Elements
 VLP 12/A5

OPERATION

The VLP 12/C1 is a metric 12-size, normally-closed, vent-to-open, poppet-type, spring biased differential-sensing logic element. It will provide on/off flow control from 1 to 2 based on the spring control pressure, inlet pressure at port 1, and pilot pressure at port 3.

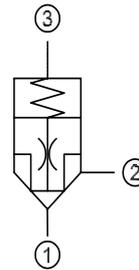
APPLICATION

The valve provides on/off, leakage-free control, suitable for use as a high flow relief valve when piloted with a relief valve or a high flow unloading solenoid when piloted with a small solenoid valve. Common applications include: pump unloading, pilot-operated relief valve, sequence valve and selector circuit. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

SPECIFICATION

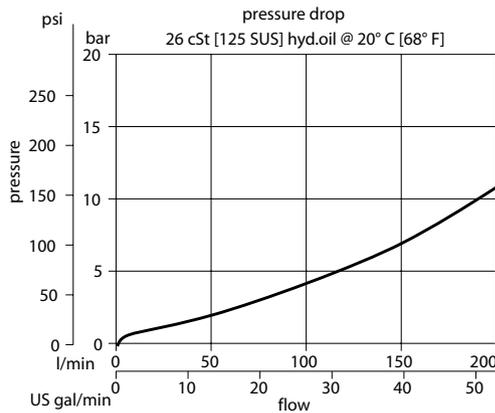
Rated pressure	315 bar [4500 psi]
Rated flow at 7 bar [100 psi]	160 l/min [42 US gal/min]
Weight	0.30 kg [0.66 lb]
Cavity	NCS12/3
Bias spring	2 bar [29 psi]

SCHEMATIC



PERFORMANCE CURVE

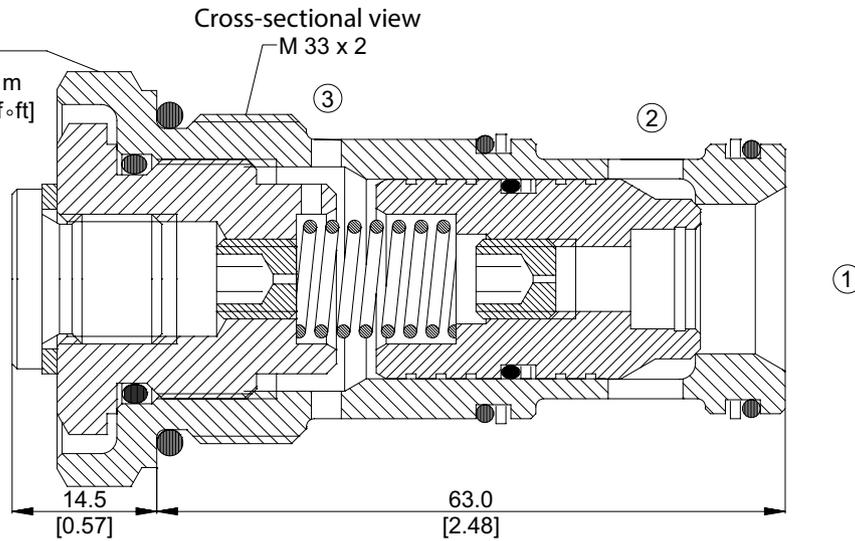
Theoretical performance



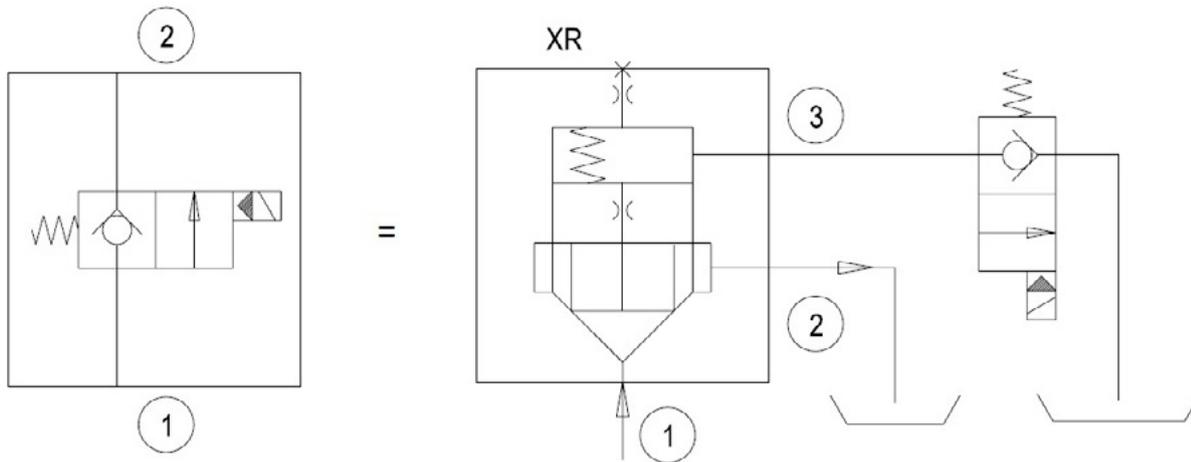
DIMENSION

mm [in]

-  38 mm
-  64-70 N·m [47-52 lbf·ft]



EXAMPLE CIRCUITS



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



OPERATION

The HLEA10-CPC is a 10-size, high pressure, normally-closed, pilot-to-close, spring biased differential-sensing logic element that includes an adjustable compensator feature. It will modulate flow from 1 to 2 based on the spring control pressure, inlet pressure at port 1, and pilot pressure at port 3.

APPLICATION

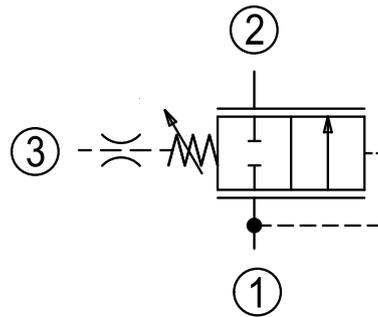
Common applications include load-sensing bypass compensator for a fixed displacement pump with single or multiple actuators as well as bypass-type pressure-compensated flow control. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

SPECIFICATION

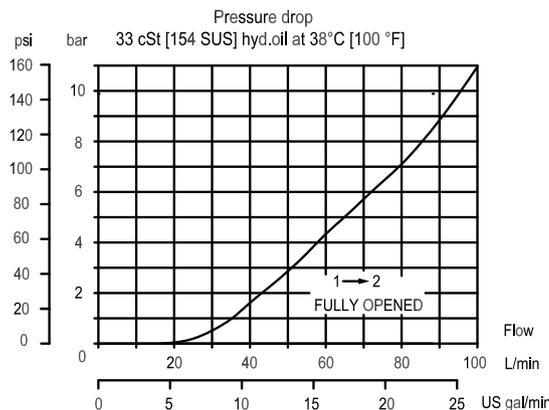
Rated Pressure*	350 bar [5075 psi]
Rated Flow at 7 bar [100 psi]	80 l/min [21.1 US gal/min]
Weight	0.29 kg [0.64 lbs]
Cavity	SDC10-3S

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

SCHEMATIC

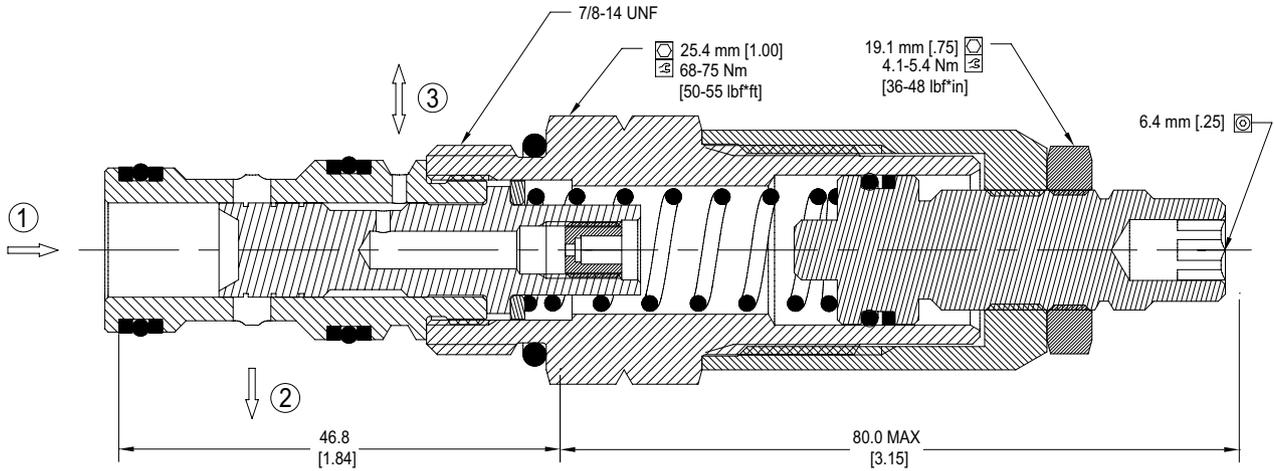


PERFORMANCE CURVE

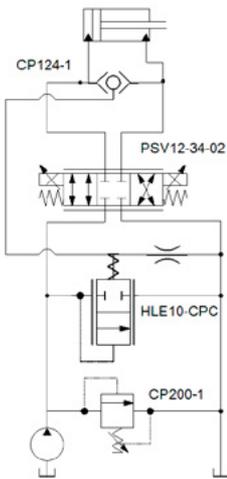


* INCLUDES SDC10-3S CAVITY WITH SAE #8 PORTS

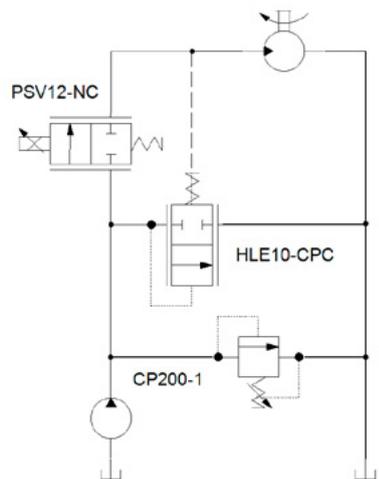
DIMENSION



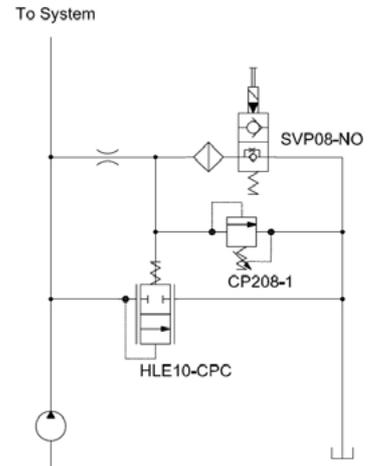
EXAMPLE CIRCUITS



Double Acting Cylinder with Proportional Speed Control, Unloading Valve and Circuit Relief



Proportional Bypass Flow Control



Dump and Relief Valve for a Fixed Pump

ORDERING INFORMATION

HLEA10:
High flow, high pressure logic element, adjustable 10-size

CPC:
Normally closed, pilot to close

Adjustment Option:
E = External

Differential Pressure Control Setting:
7.5 = 7.5 bar [110 psi]
XXX = STD SETTING (without stamping)
Range 2.75 to 15.0 bar [40 psi to 220 psi]

HLEA10 - CPC - E - 7.5 - B - 00

Housings & Ports	Housing P/N
00: Cartridge Only	No Body
3B: AL, 3/8 BSP	SDC10-3S-3B
4B: AL, 1/2 BSP	SDC10-3S-4B
6S: AL #6 SAE	SDC10-3S-6S
8S: AL #8 SAE	SDC10-3S-8S

Code	Seal Material	Seal kit
B	Buna	11126248
V	Viton	11126249

OPERATION

The CP700-1 is a 10-size, normally-closed, pilot-to-close, spool-type, spring biased differential-sensing logic element. It will modulate flow from 1 to 2 based on the spring control pressure, inlet pressure at port 1, and pilot pressure at port 3.

APPLICATION

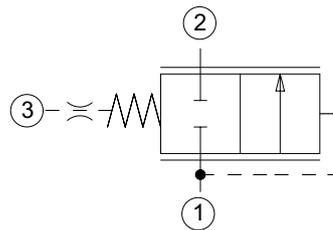
Common applications include load-sensing bypass compensator for a fixed displacement pump with single or multiple actuators as well as bypass-type pressure-compensated flow control. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.



SPECIFICATION

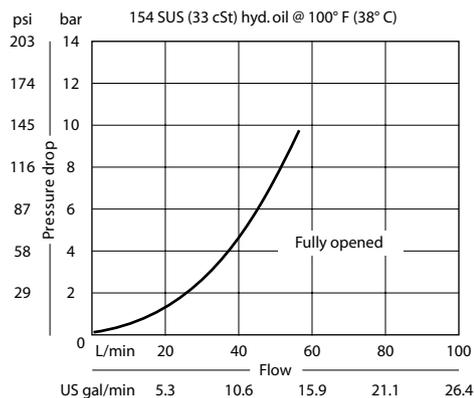
Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	50 l/min [13 US gal/min]
Weight	0.12 kg [0.27 lb]
Cavity	SDC10-3

SCHEMATIC



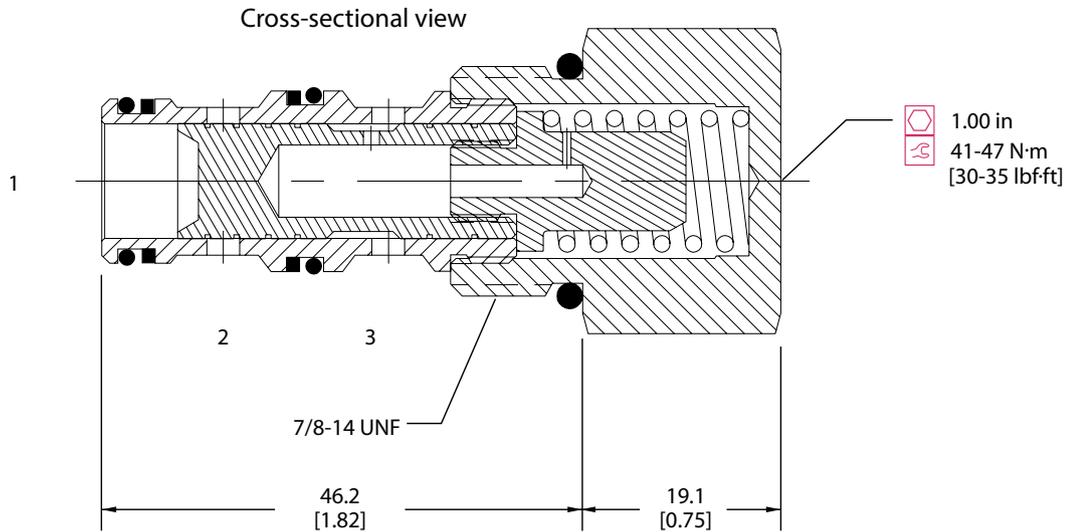
PERFORMANCE CURVE

Theoretical performance

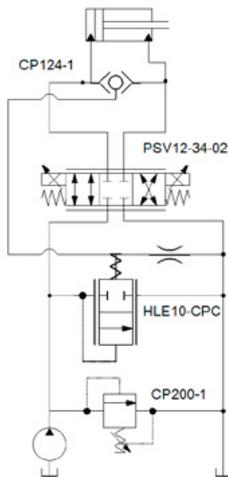


LE - Logic Elements
 CP700-1

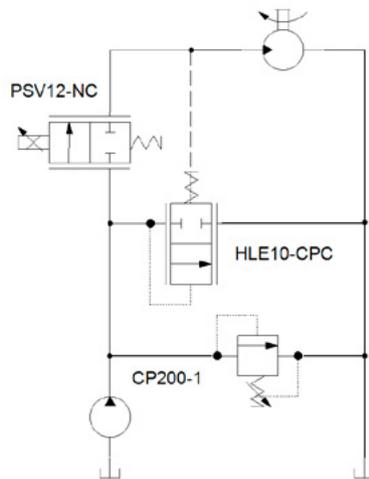
DIMENSION
mm [in]



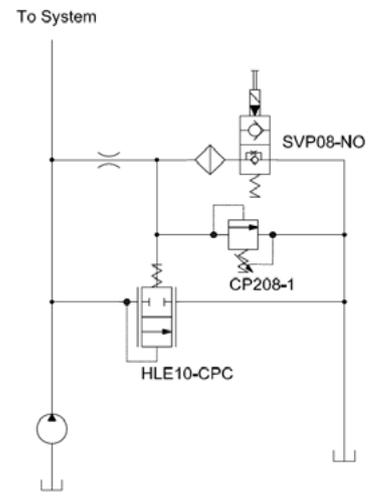
EXAMPLE CIRCUITS



Double Acting Cylinder with Proportional Speed Control, Unloading Valve and Circuit Relief



Proportional Bypass Flow Control



Dump and Relief Valve for a Fixed Pump

ORDERING INFORMATION

CP700 - 1 - 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]
190	13.1	[190]

OPERATION

The HLE10-CPC is a 10-size, high pressure, normally-closed, pilot-to-close, spool-type, spring biased differential-sensing logic element. It will modulate flow from 1 to 2 based on the spring control pressure, inlet pressure at port 1, and pilot pressure at port 3.



APPLICATION

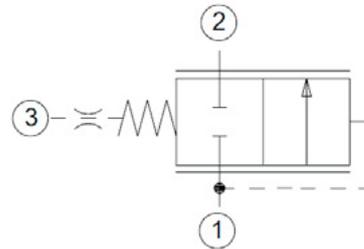
Common applications include load-sensing bypass compensator for a fixed displacement pump with single or multiple actuators as well as bypass-type pressure-compensated flow control. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer

SPECIFICATION

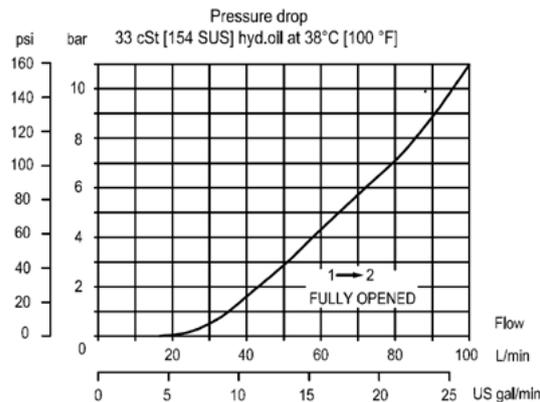
Rated Pressure*	350 bar [5075 psi]
Rated Flow at 7 bar [100 psi]	80 l/min [21.1 US gal/min]
Weight	0.14 kg [0.31 lbs]
Cavity	SDC10-3S

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

SCHEMATIC

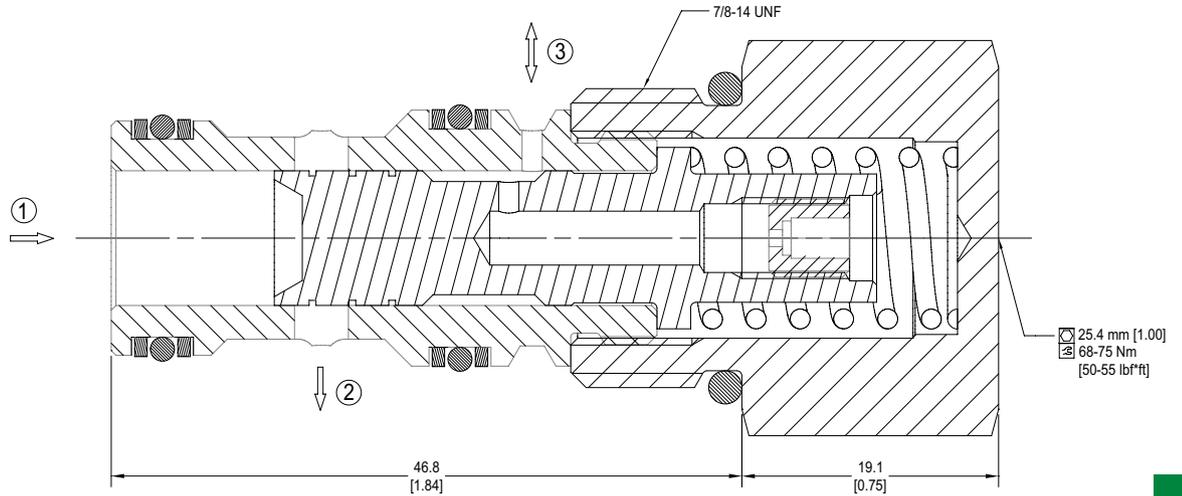


PERFORMANCE CURVE

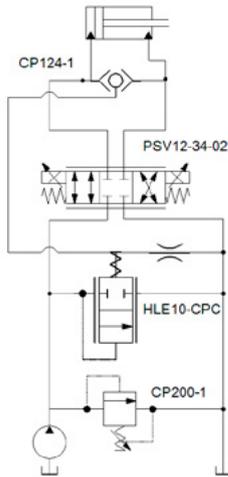


LE - Logic Elements
 HLE10-CPC

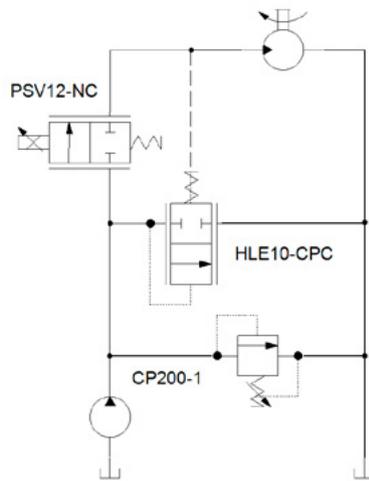
DIMENSION



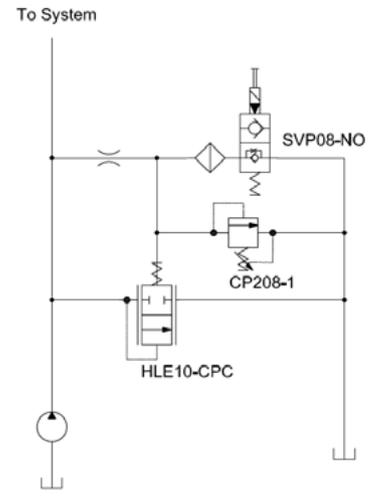
EXAMPLE CIRCUITS



Double Acting Cylinder with Proportional Speed Control, Unloading Valve and Circuit Relief



Proportional Bypass Flow Control



Dump and Relief Valve for a Fixed Pump

ORDERING INFORMATION

HLE10: High flow, high pressure, logic element, 10-size
CPC: Normally closed, pilot to close

HLE10 - CPC - 2.75 - B - 00

Differential Pressure Control

Code	Description
2.75	2.75 bar [40 psi]
5.5	5.5 bar [80 psi]
7.5	7.5 bar [110 psi]
10.0	10.0 bar [150 psi]
13.0	13.0 bar [190 psi]
15.0	15.0 bar [220 psi]

Housings & Ports	Housing P/N
00: Cartridge Only	No Body
3B: AL, 3/8 BSP	SDC10-3S-3B
4B: AL, 1/2 BSP	SDC10-3S-4B
6S: AL #6 SAE	SDC10-3S-6S
8S: AL #8 SAE	SDC10-3S-8S

Code	Seal Material	Seal kit
B	Buna	11126248
V	Viton	11126249

LE - Logic Elements
HLE10-CPC

OPERATION

The CP701-1 is a 12-size, normally-closed, pilot-to-close, spool-type,, spring biased differential-sensing logic element. It will modulate flow from 1 to 2 based on the spring control pressure, inlet pressure at port 1, and pilot pressure at port 3.

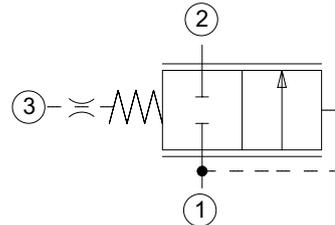
APPLICATION

Common applications include load-sensing bypass compensator for a fixed displacement pump with single or multiple actuators as well as bypass-type pressure-compensated flow control. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

SPECIFICATION

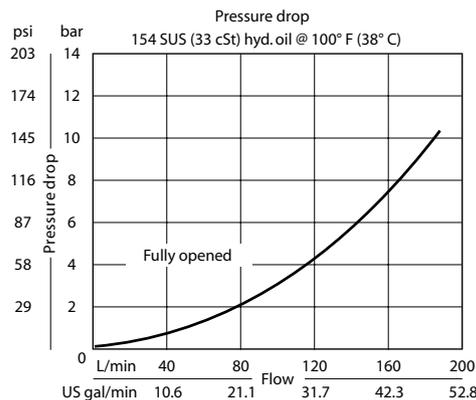
Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	150 l/min [40 US gal/min]
Weight	0.26 kg [0.57 lb]
Cavity	CP12-3S

SCHEMATIC

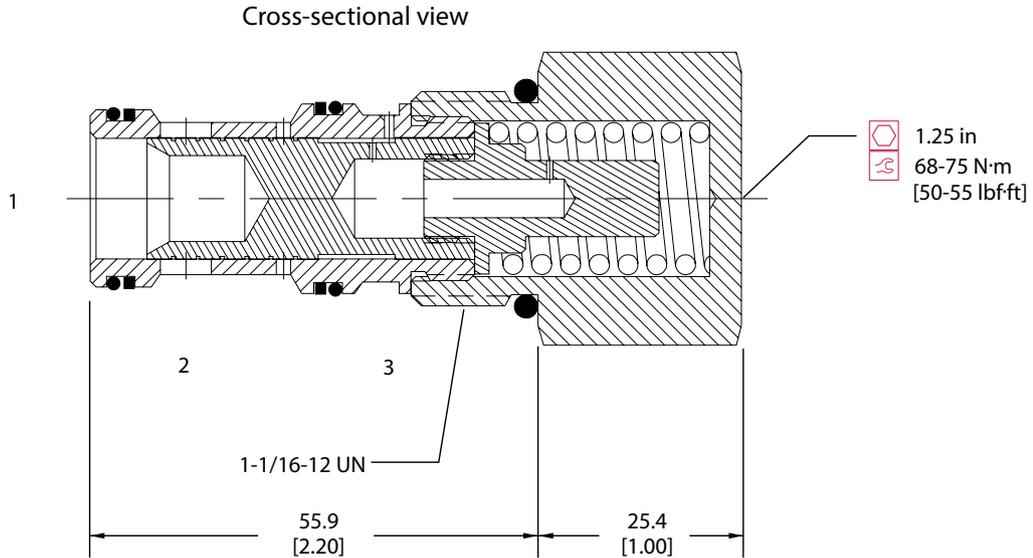


PERFORMANCE CURVE

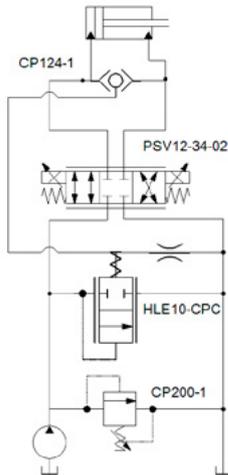
Theoretical performance



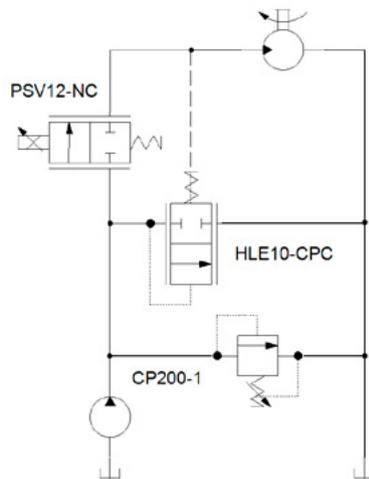
DIMENSION
[ni] mm



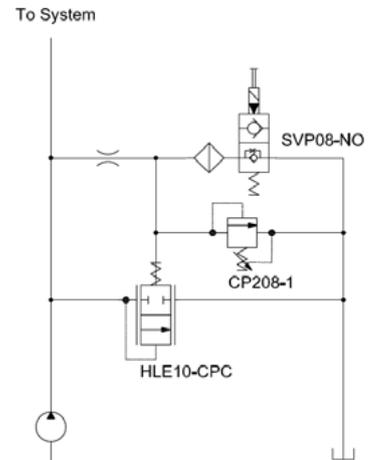
EXAMPLE CIRCUITS



Double Acting Cylinder with
Proportional Speed Control,
Unloading Valve and Circuit Relief



Proportional Bypass Flow Control



Dump and Relief Valve for a Fixed Pump

ORDERING INFORMATION

CP701 - 1 - B - 12S - 080

Seals	Seal kit 120335 120336	Differential Control Pressure
B = Buna-N		030 = 2.1 [30]
V = Viton		050 = 3.5 [50]
		080 = 5.5 [80]
		100 = 6.9 [100]
		150 = 10.3 [150]
		170 = 11.7 [170]
Housing and ports	Housing P/N	Pilot port
0 = No housing	No housing	
4B = AL, 1/2 BSP	CP12-3S-4B/2B = 1/4 BSP	
6B = AL, 3/4 BSP	CP12-3S-6B/2B = 1/4 BSP	
10S = AL, #10 SAE	CP12-3S-10S/4S = #4 SAE	
12S = AL, #12 SAE	CP12-3S-12S/4S = #4 SAE	

OPERATION

The CP702-1 is a 16-size, normally-closed, pilot-to-close, spool-type,, spring biased differential-sensing logic element. It will modulate flow from 1 to 2 based on the spring control pressure, inlet pressure at port 1, and pilot pressure at port 3.

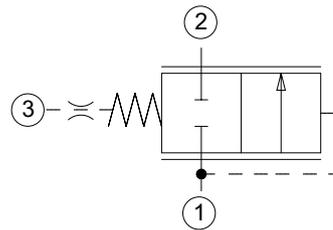
APPLICATION

Common applications include load-sensing bypass compensator for a fixed displacement pump with single or multiple actuators as well as bypass-type pressure-compensated flow control. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

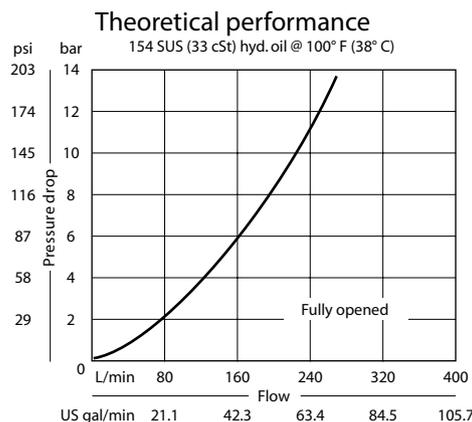
SPECIFICATION

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

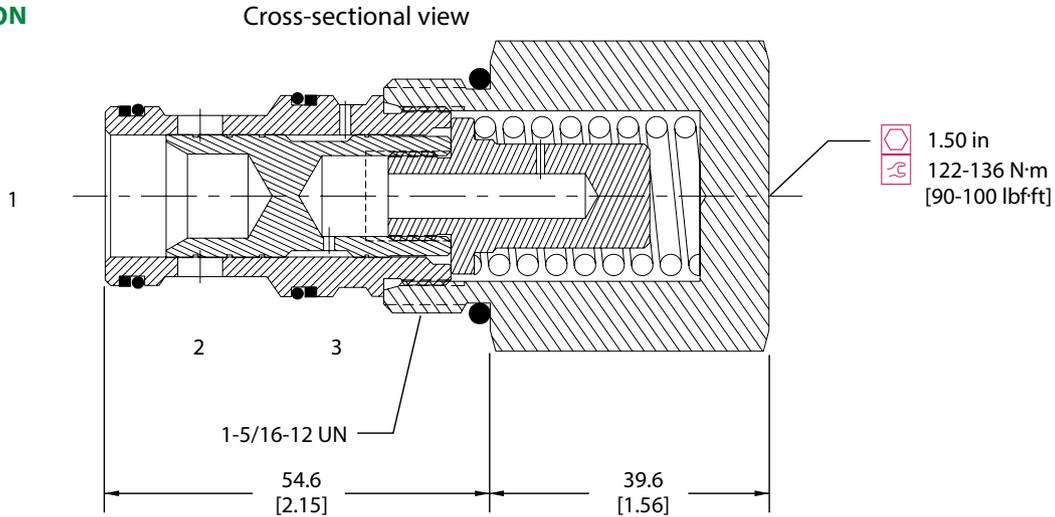
SCHEMATIC



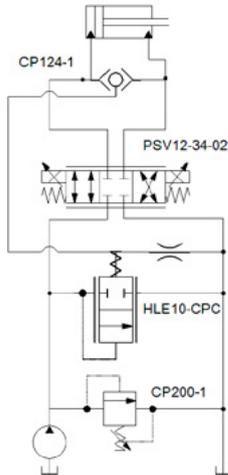
PERFORMANCE CURVE



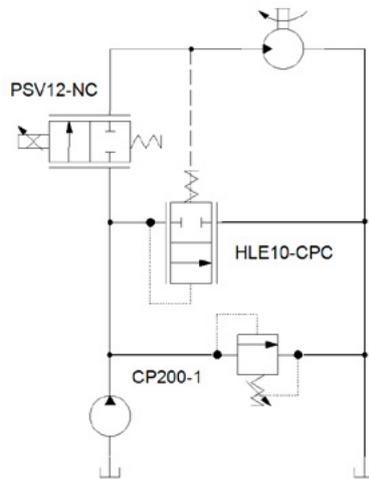
DIMENSION
mm [in]



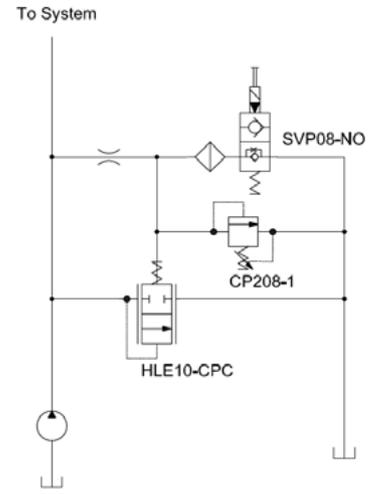
EXAMPLE CIRCUITS



Double Acting Cylinder with Proportional Speed Control, Unloading Valve and Circuit Relief



Proportional Bypass Flow Control



Dump and Relief Valve for a Fixed Pump

LE - Logic Elements
CP702-1

ORDERING INFORMATION

CP702-1 -B -16S -080

Seal Option

Code	Seal Material	Seal kit
B	Buna	120033
V	Viton	120034

Housings & Ports	Housing P/N	Pilot port
0: Cartridge Only	No Housing	
6B: 3/4 BSP, AL	CP16-3S-6B/2B	1/4 BSP
8B: 1 BSP, AL	CP16-3S-8B/2B	1/4 BSP
12S: #12 SAE, AL	CP16-3S-12S/4S	#4 SAE
16S: #16 SAE, AL	CP16-3S-16S/4S	#4 SAE

Other Housings available

Differential Control Pressure

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

OPERATION

The LE20-CPC is a 20-size, normally-closed, pilot-to-close, spool-type,, spring biased differential-sensing logic element. It will modulate flow from 1 to 2 based on the spring control pressure, inlet pressure at port 1, and pilot pressure at port 3.

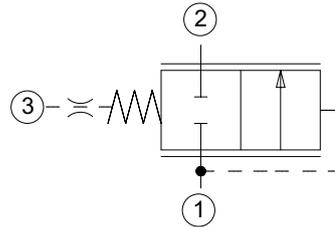
APPLICATION

Common applications include load-sensing bypass compensator for a fixed displacement pump with single or multiple actuators as well as bypass-type pressure-compensated flow control. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

SPECIFICATION

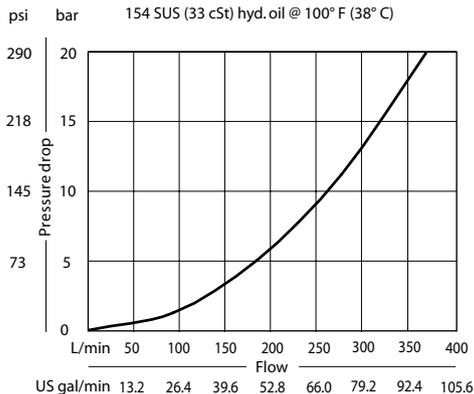
Rated pressure	207 bar [3000 psi]
Rated flow at 7 bar [100 psi]	320 l/min [90 US gal/min]
Weight	1.19 kg [2.62 lb]
Cavity	CP20-3S

SCHEMATIC

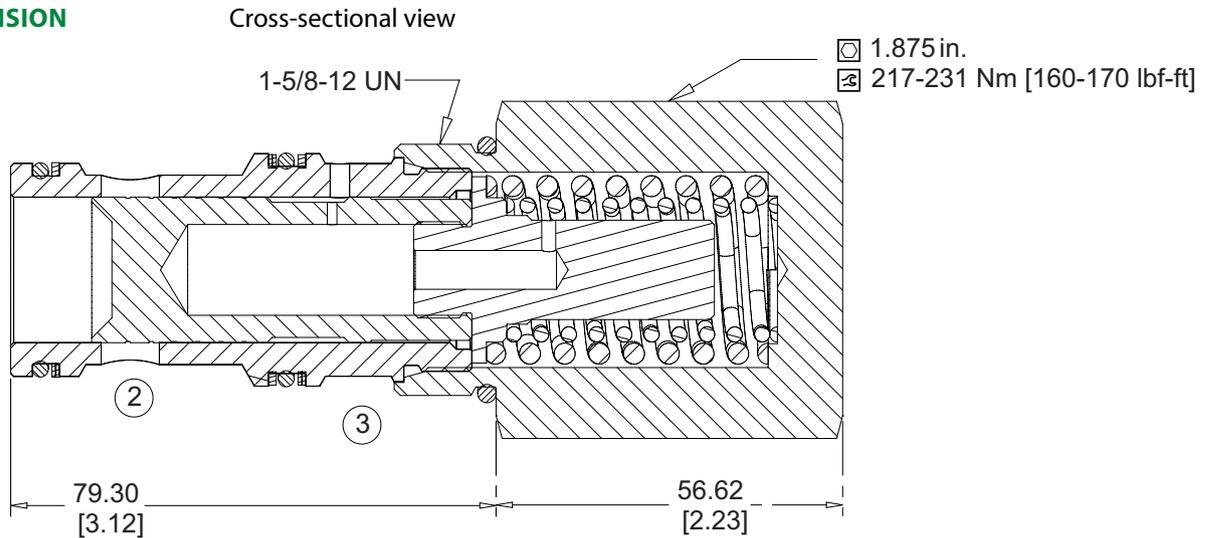


PERFORMANCE CURVE

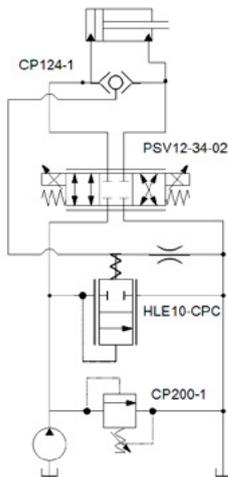
Theoretical performance



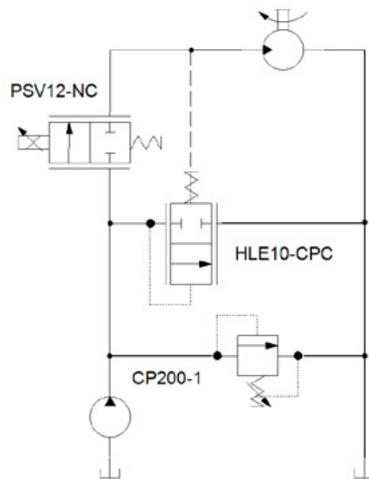
DIMENSION
mm [in]



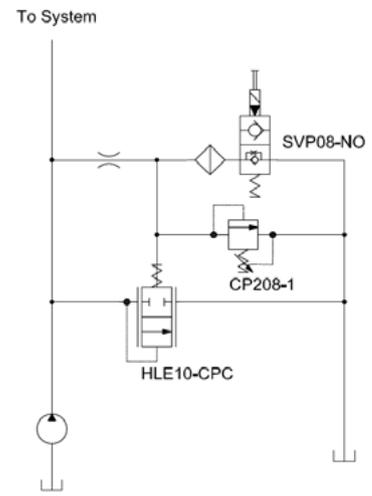
EXAMPLE CIRCUITS



Double Acting Cylinder with Proportional Speed Control, Unloading Valve and Circuit Relief



Proportional Bypass Flow Control



Dump and Relief Valve for a Fixed Pump

LE - Logic Elements
LE20-CPC

ORDERING INFORMATION

LE20-CPC-5.5-B-00

Logic Element, 20 Size Cavity	Housing and ports	Housing Part #	Pilot Port
Normally Closed, Pilot-to-Close	00 = No Housing	No Housing	
Differential Control Pressure	8B = Al, 1 BSP	CP20-3S-8B/2B	1/4 BSP
5.5 = 5.5 bar [80 psi]	10B = Al, 1-1/4 BSP	CP20-3S-10B/2B	1/4 BSP
7.0 = 7 bar [100 psi]	16S = Al, #16 SAE	CP20-3S-16S/4S	#4 SAE
10.0 = 10.0 bar [150 psi]	20S = Al, #20 SAE	CP20-3S-20S/4S	#4 SAE
15.0 = 15.0 bar [218 psi]	Seals	Seal Kit	
	B = Buna-N	120380	
	V = Viton	120381	



OPERATION

The HLEA10-CVO is a 10-size, high pressure, normally closed, vent-to-open, spring-biased differential-sensing logic element that includes an adjustable compensator feature. It will modulate flow from 1 to 2 based on the spring control pressure, inlet pressure at port 1, and pilot pressure at port 3.

APPLICATION

Common applications include: pump unloading, pilot-operated relief valve (mechanical or proportional), sequence valve and selector circuit. The adjustability of the HLEA10 allows the operator to change the compensator setting of the logic element, ranging from 2.75 to 15.2 bar (40 to 220 psi). This is especially helpful when fine tuning the applications, providing flexibility to the operator and allowing for machine optimization

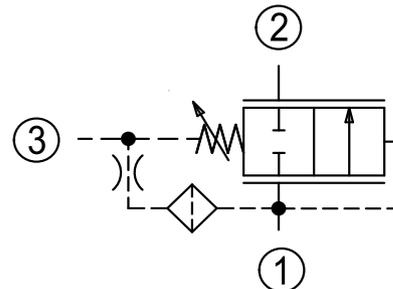
LE - Logic Elements
HLEA10-CVO

SPECIFICATION

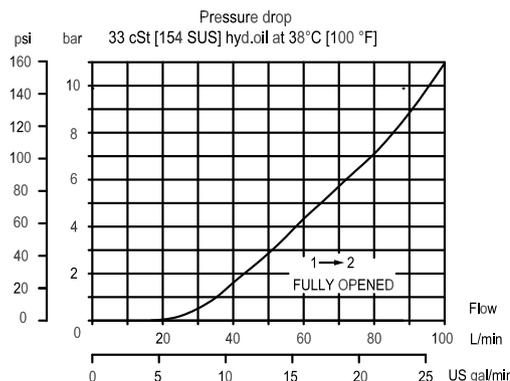
Rated pressure	350 bar [5075 psi]
Rated flow at 7 bar [100 psi]	80l/min [21 US gal/min]
Weight	0.29 kg [0.64 lb]
Cavity	SDC10-3S

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

SCHEMATIC

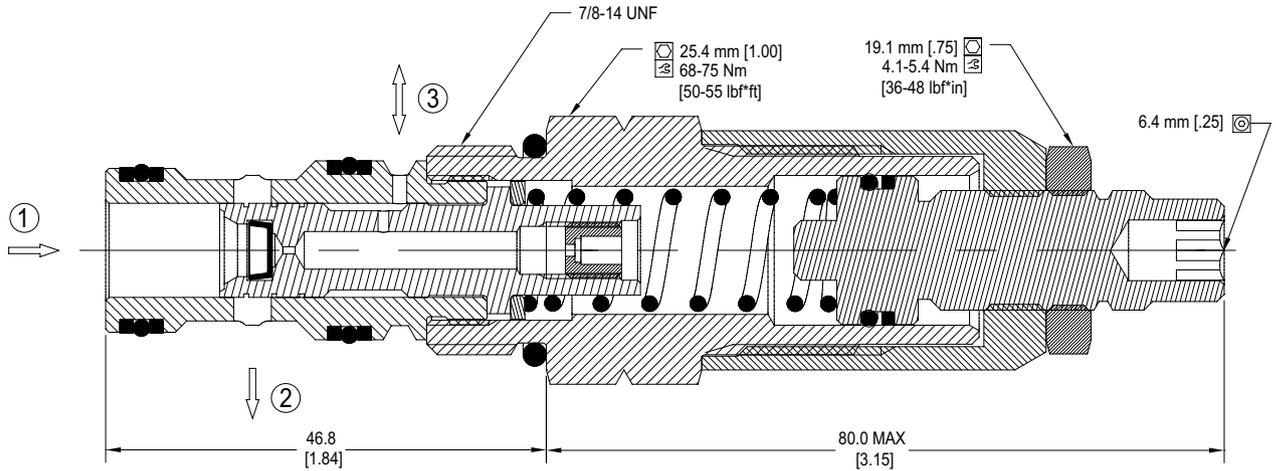


PERFORMANCE CURVE

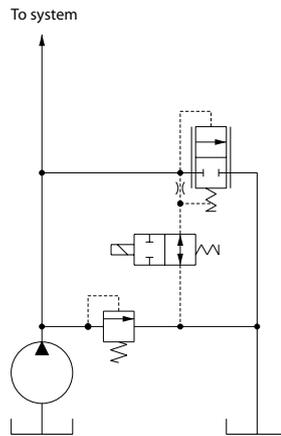
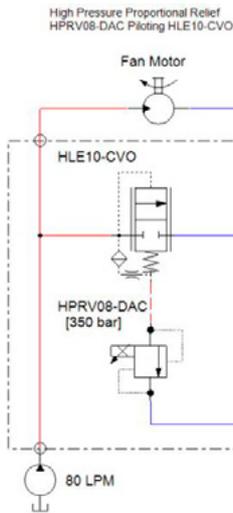


* INCLUDES SDC10-3S CAVITY WITH SAE #8 PORTS

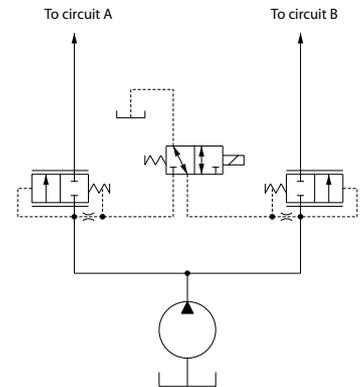
DIMENSION



EXAMPLE CIRCUITS



Pump unloading



Selector valve

ORDERING INFORMATION

HLEA10 - CVO - E - 7.5 - B - 00

HLEA10: High flow, high pressure logic element, adjustable 10-size

CVO: Normally closed, vent to open

Adjustment Option: E = External

Differential Pressure Control Setting: 7.5 = 7.5 bar [110 psi]
 XXX = STD SETTING (without stamping)
 Range 2.75 to 15.0 bar [40 psi to 220 psi]

Housings & Ports		Housing P/N
00:	Cartridge Only	No Body
3B:	AL, 3/8 BSP	SDC10-3S-3B
4B:	AL, 1/2 BSP	SDC10-3S-4B
6S:	AL #6 SAE	SDC10-3S-6S
8S:	AL #8 SAE	SDC10-3S-8S

Code	Seal Material	Seal kit
B	Buna	11126248
V	Viton	11126249

LE - Logic Elements
 HLEA10-CVO

OPERATION

The CP700-2 is a 10-size, normally closed, vent-to-open, spring-biased differential-sensing logic element. It will modulate flow from 1 to 2 based on the spring control pressure, inlet pressure at port 1, and outlet pressure at port 3.

APPLICATION

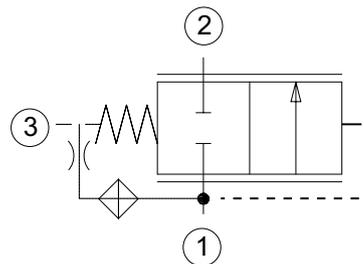
Common applications include: pump unloading, pilot-operated relief valve (mechanical or proportional), sequence valve and selector circuit. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.



SPECIFICATION

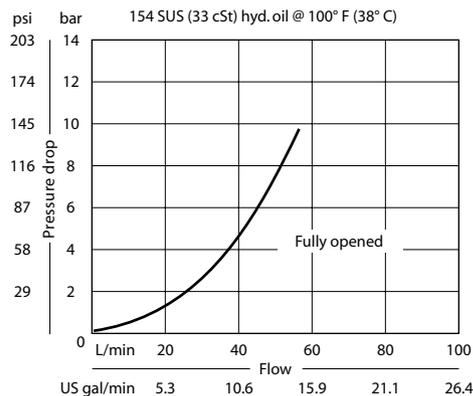
Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	50 l/min [13 US gal/min]
Weight	0.13 kg [0.28 lb]
Cavity	SDC10-3

SCHEMATIC

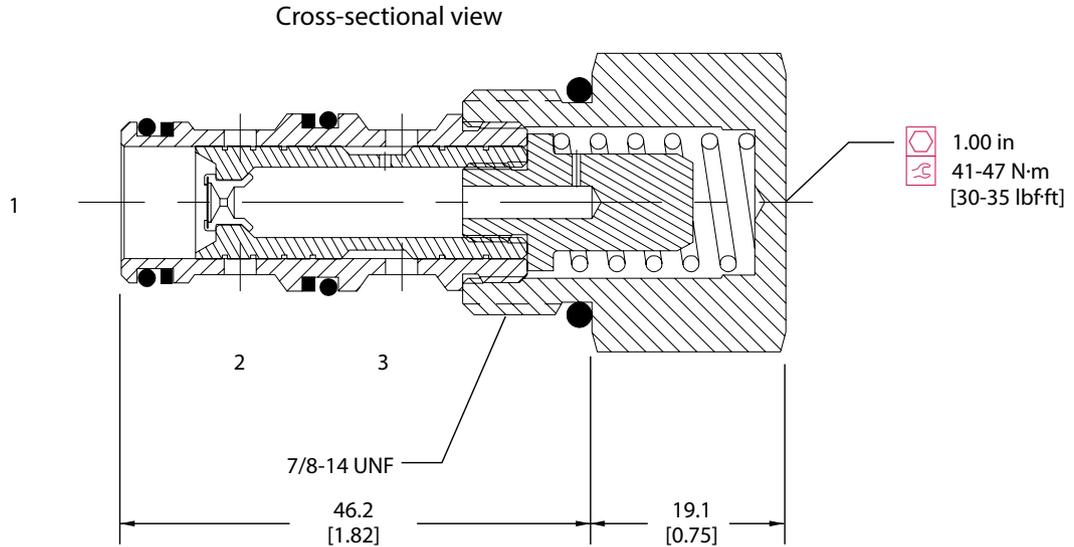


PERFORMANCE CURVE

Theoretical performance

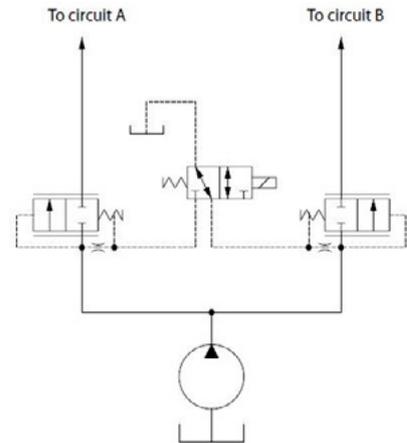
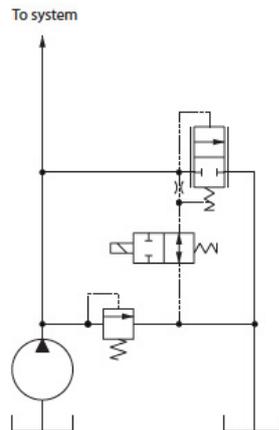
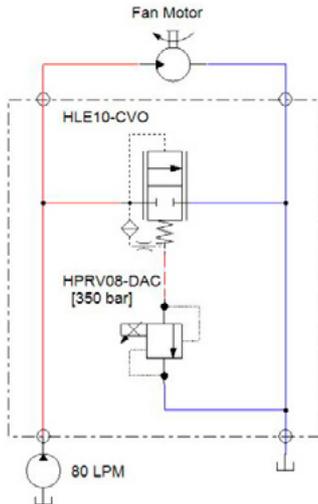


DIMENSION
mm [in]



EXAMPLE CIRCUITS

High Pressure Proportional Relief
HPRV08-DAC Piloting HLE10-CVO



ORDERING INFORMATION

CP700 - 2 - B - 8S 080

Seals	Seal kit	Differential Control Pressure
B = Buna-N	120027	040 = 2.8 [40]
V = Viton	120028	080 = 5.5 [80]
Housing and ports	Housing P/N	110 = 7.6 [110]
0 = No Housing	No Housing	150 = 10.3 [150]
SE3B = AL, 3/8 BSP	SDC10-3-SE-3B	190 = 11.7 [190]
SE4B = AL, 1/2 BSP	SDC10-3-SE-4B	
6S = AL, #6 SAE	CP10-3-6S	
8S = AL, #8 SAE	CP10-3-8S	
Other housings available		

OPERATION

The HLE10-CVO is a 10-size, high pressure, normally closed, vent-to-open, spring-biased differential-sensing logic element. It will modulate flow from 1 to 2 based on the spring control pressure, inlet pressure at port 1, and outlet pressure at port 3.

APPLICATION

Common applications include: pump unloading, pilot-operated relief valve (mechanical or proportional), sequence valve and selector circuit. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

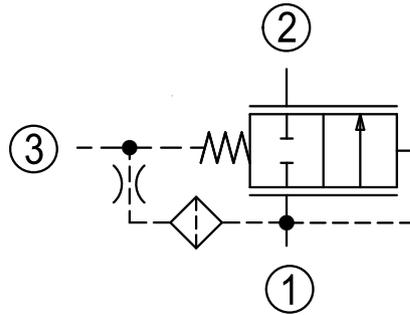


SPECIFICATION

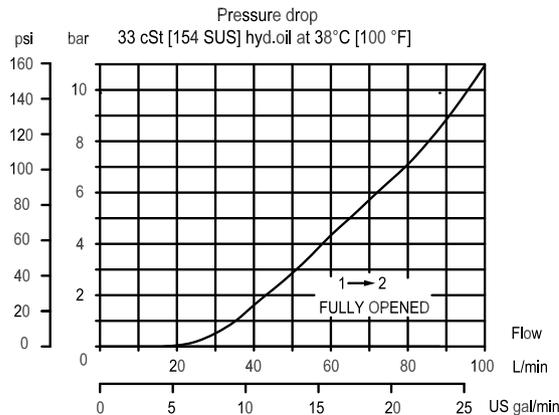
Rated Pressure*	350 bar [5075 psi]
Rated Flow at 7 bar [100 psi]	80 l/min [21.1 US gal/min]
Weight	0.14 kg [0.31 lbs]
Cavity	SDC10-3S

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

SCHEMATIC

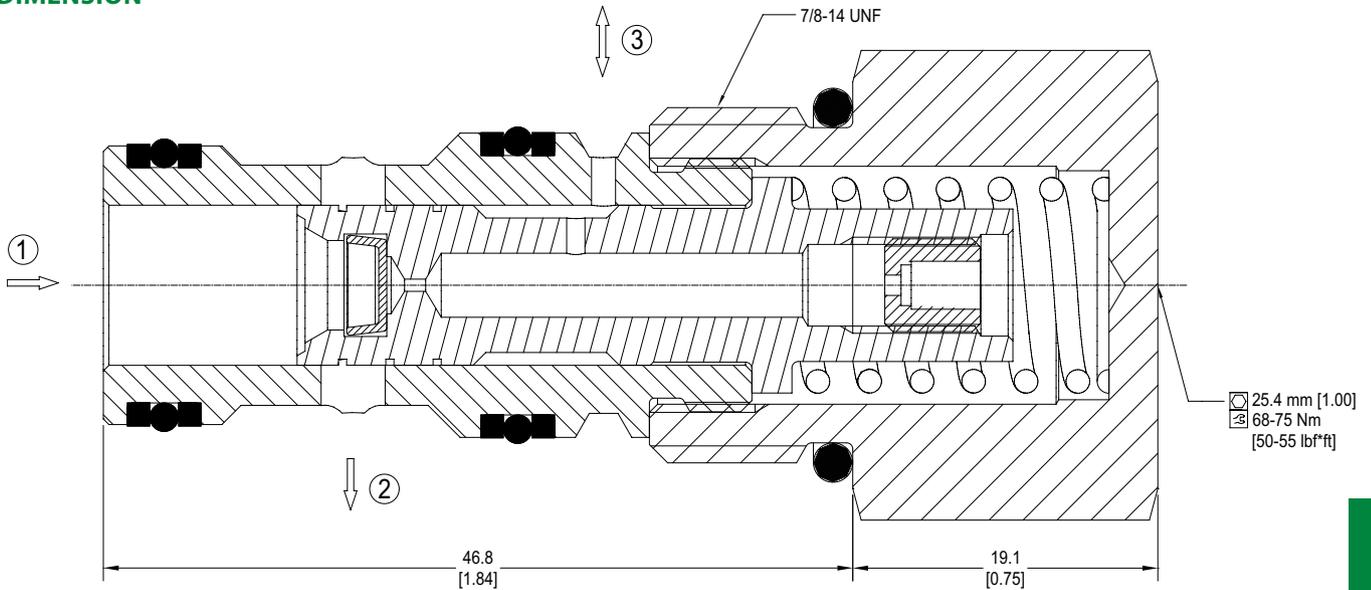


PERFORMANCE CURVE

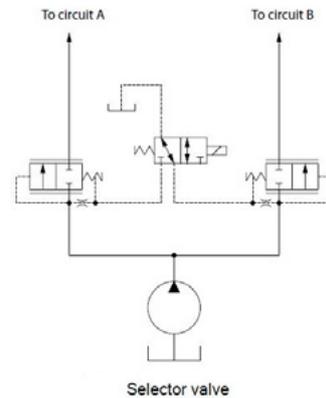
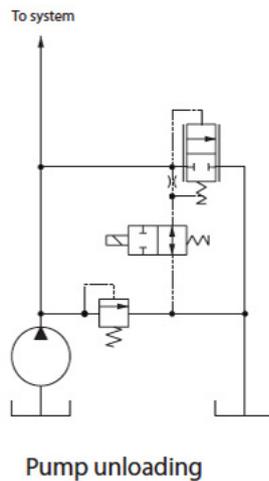
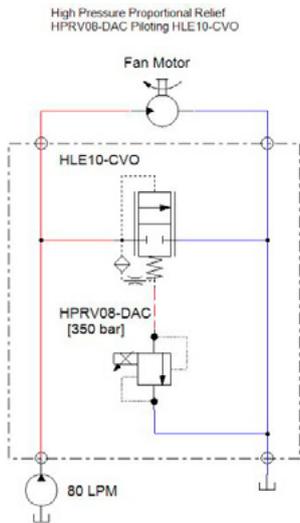


* INCLUDES SDC10-3S CAVITY WITH SAE #8 PORTS

DIMENSION



EXAMPLE CIRCUITS



ORDERING INFORMATION

HLE10: High flow, high pressure, logic element, 10-size
CVO: Normally closed, vent to open

HLE10 - CVO - 2.75 - B - 00

Differential Pressure Control

Code	Description
2.75	2.75 bar [40 psi]
5.5	5.5 bar [80 psi]
7.5	7.5 bar [110 psi]
10.0	10.0 bar [150 psi]
13.0	13.0 bar [190 psi]
15.0	15.0 bar [220 psi]
18.0	18.0 bar [260 psi]

Housings & Ports	Housing P/N
00: Cartridge Only	No Body
3B: AL, 3/8 BSP	SDC10-3S-3B
4B: AL, 1/2 BSP	SDC10-3S-4B
6S: AL #6 SAE	SDC10-3S-6S
8S: AL #8 SAE	SDC10-3S-8S

Code	Seal Material	Seal kit
B	Buna	11126248
V	Viton	11126249

OPERATION

The CP701-2 is a 12-size, normally closed, vent-to-open, spring-biased differential-sensing logic element. It will modulate flow from 1 to 2 based on the spring control pressure, inlet pressure at port 1, and outlet pressure at port 3.

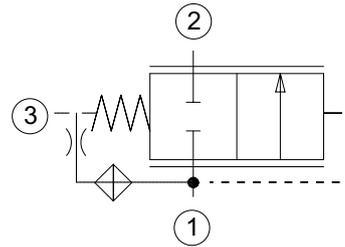
APPLICATION

Common applications include: pump unloading, pilot-operated relief valve (mechanical or proportional), sequence valve and selector circuit. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

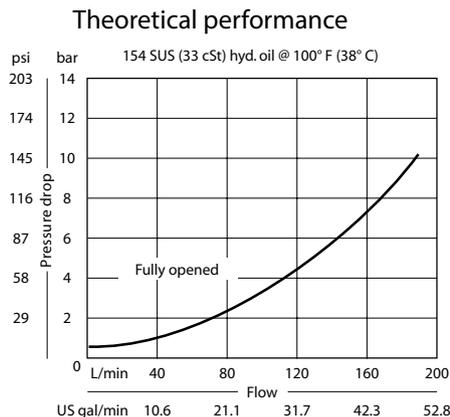
SPECIFICATION

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

SCHEMATIC

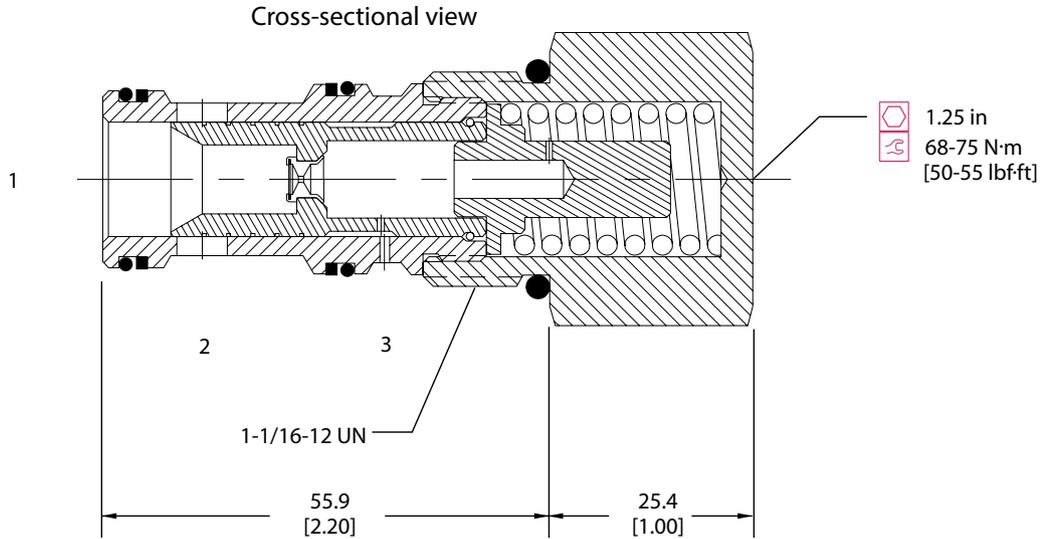


PERFORMANCE CURVE



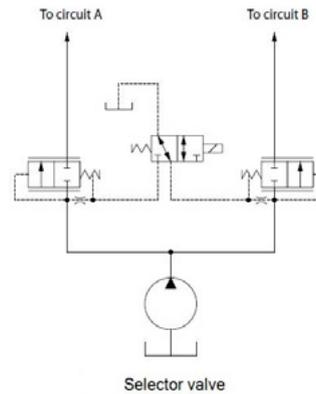
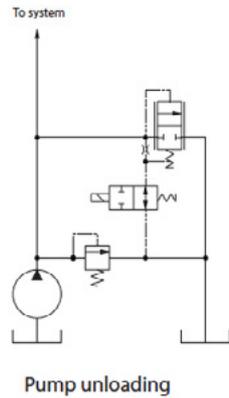
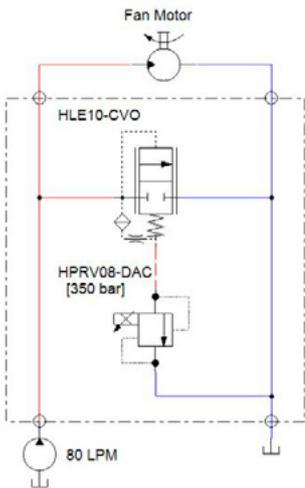
DIMENSION

mm [in]



EXAMPLE CIRCUITS

High Pressure Proportional Relief
HPRV08-DAC Piloting HLE10-CVO



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]

OPERATION

The CP702-2 is a 16-size, normally closed, vent-to-open, spring-biased differential-sensing logic element. It will modulate flow from 1 to 2 based on the spring control pressure, inlet pressure at port 1, and outlet pressure at port 3.

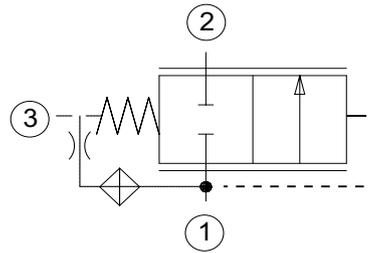
APPLICATION

Common applications include: pump unloading, pilot-operated relief valve (mechanical or proportional), sequence valve and selector circuit. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

SPECIFICATION

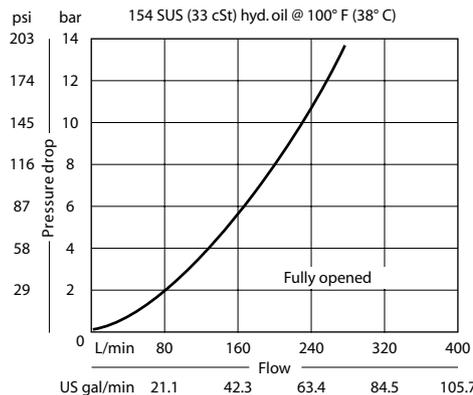
Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	190 l/min [50 US gal/min]
Weight	0.38 kg [0.83 lb]
Cavity	SDC16-3S

SCHEMATIC



PERFORMANCE CURVE

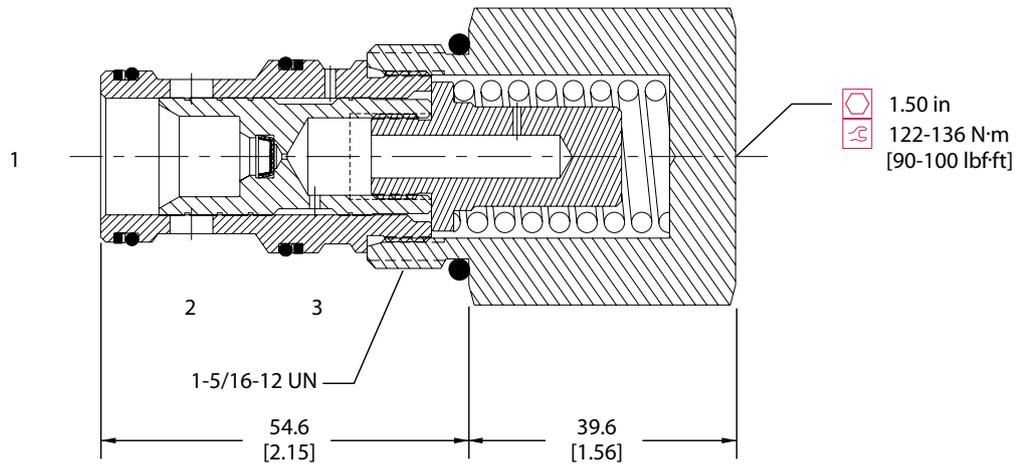
Theoretical performance



DIMENSION

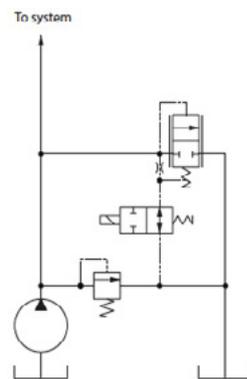
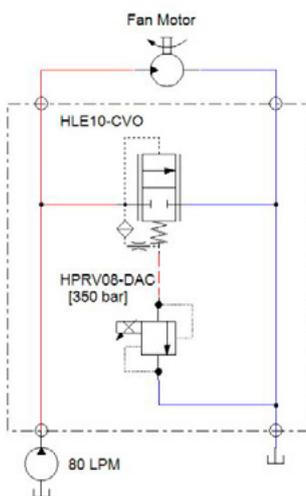
mm [in]

Cross-sectional view

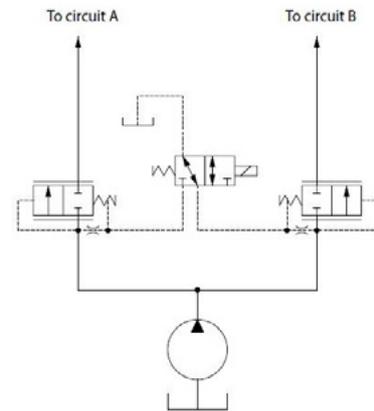


EXAMPLE CIRCUITS

High Pressure Proportional Relief
HPRV08-DAC Piloting HLE10-CVO



Pump unloading



Selector valve

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]

OPERATION

The CP703-2 is a 20-size, normally closed, vent-to-open, spring-biased differential-sensing logic element. It will modulate flow from 1 to 2 based on the spring control pressure, inlet pressure at port 1, and outlet pressure at port 3.

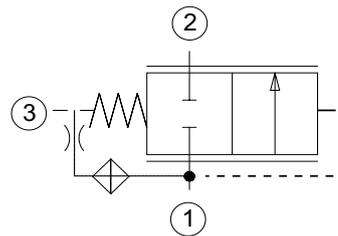
APPLICATION

Common applications include: pump unloading, pilot-operated relief valve (mechanical or proportional), sequence valve and selector circuit. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

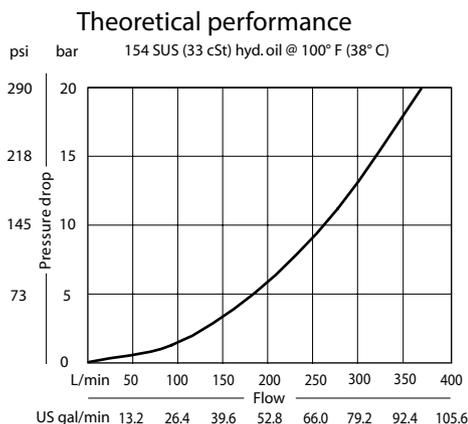
SPECIFICATION

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

SCHEMATIC



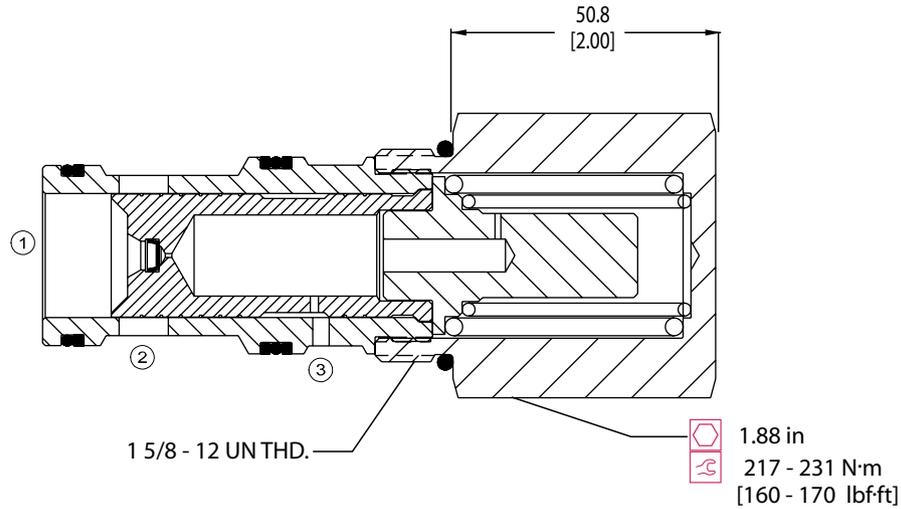
PERFORMANCE CURVE



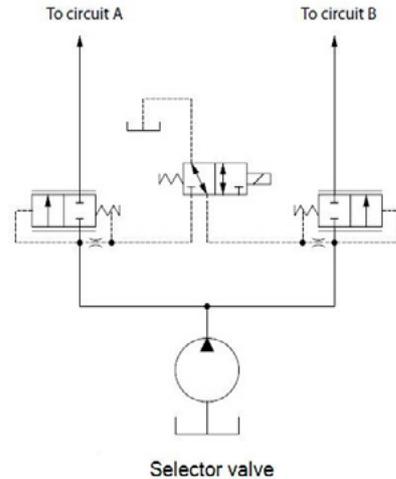
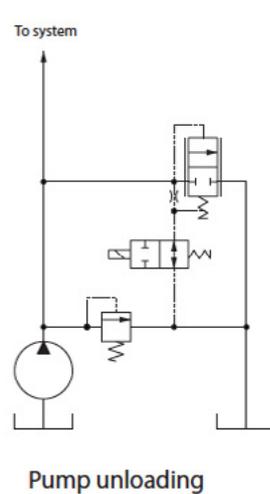
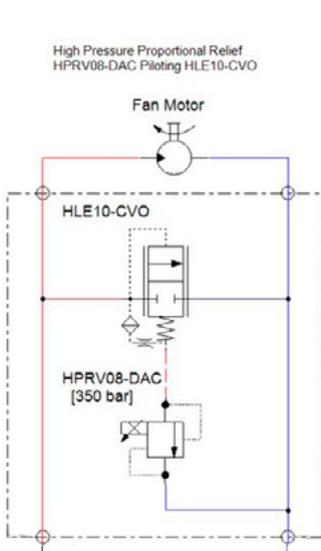
DIMENSION

mm [in]

Cross-sectional view



EXAMPLE CIRCUITS



ORDERING INFORMATION

CP703 - 2 - B - 16S - 080

Seals	Seal kit	Differential control pressure
B = Buna-N	120380	
V = Viton	120381	050 = 3.4 [50]
Housing and ports	Housing P/N	080 = 5.5 [80]
0 = No housing	No housing	100 = 6.9 [100]
8B = AL, 1 BSP	CP20-3S-8B/2B = 1/4 BSP	130 = 9.0 [130]
10B = AL, 1-1/4 BSP	CP20-3S-10B/2B = 1/4 BSP	150 = 10.3 [150]
16S = AL, #16 SAE	CP20-3S-16S/4S = #4 SAE	
20S = AL, #20 SAE	CP20-3S-20S/4S = #4 SAE	
other housings available		



OPERATION

The HLEA10-OPO is a 10-size, high pressure, normally open, pilot-to-open, spring-biased differential-sensing logic element that includes an adjustable compensator feature. It will modulate flow from 2 to 1 based on the spring control pressure, inlet pressure at port 1, and pilot pressure at port 3.

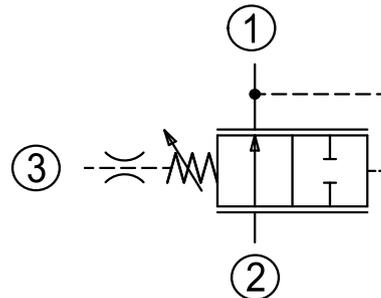
APPLICATION

The adjustability of the HLEA10 allows the operator to change the compensator setting of the logic element, ranging from 2.75 to 15.2 bar (40 to 220 psi). This is especially helpful when fine tuning the applications, providing flexibility to the operator and allowing for machine optimization.

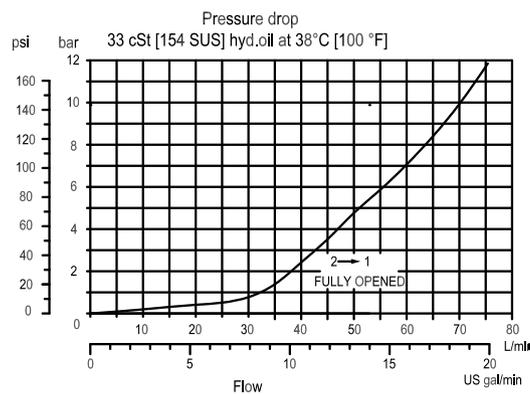
SPECIFICATION

Rated pressure	350 bar [5075 psi]
Rated flow at 7 bar [100 psi]	60 l/min [16 US gal/min]
Weight	0.29 kg [0.64 lb]
Cavity	SDC10-3S

SCHEMATIC

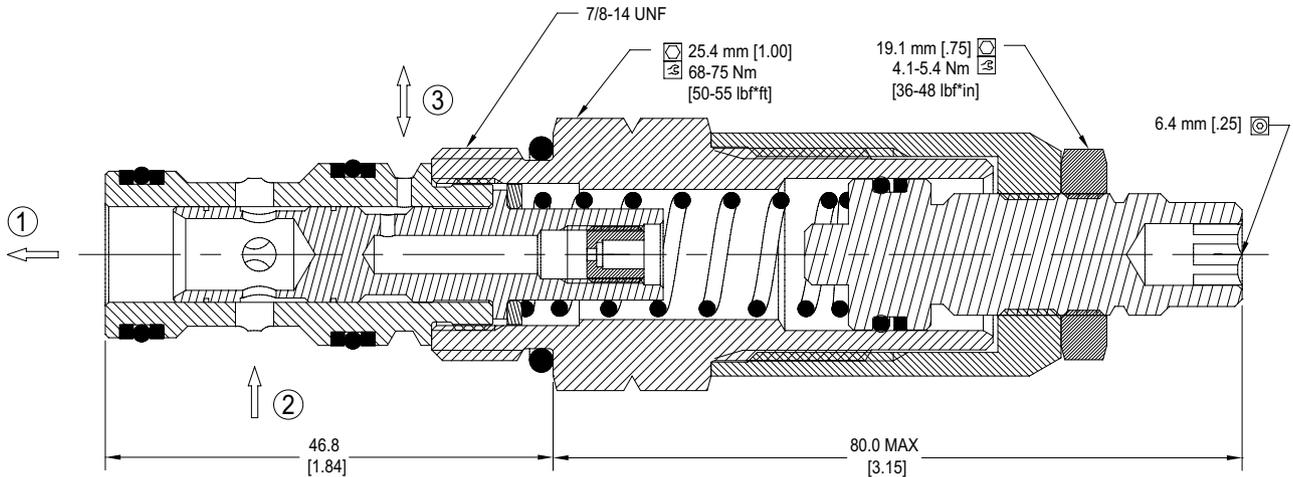


PERFORMANCE CURVE

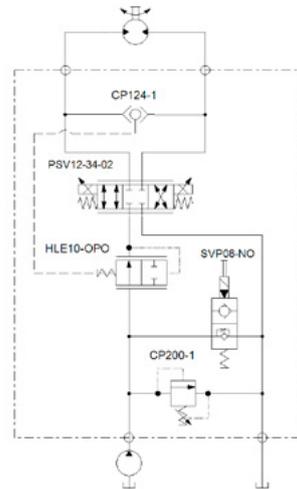


* EXCLUDES SDC10-3S CAVITY

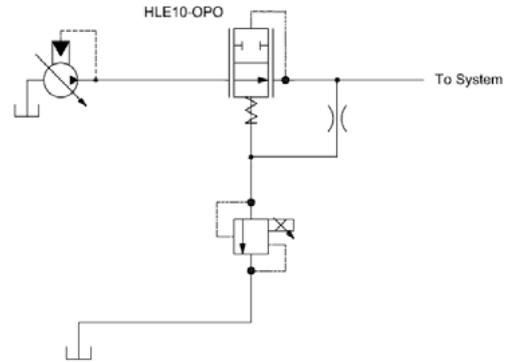
DIMENSION



EXAMPLE CIRCUITS



Compensated Bi-directional Flow Control



Proportional Pressure Reducing Valve

ORDERING INFORMATION

HLEA10:
 High flow, high pressure
 logic element, adjustable
 10-size

OPO:
 Normally open,
 pilot to open

HLEA10 - OPO - E - 7.5 - B - 00

Adjustment Option:
 E = External

Differential Pressure Control Setting:
 7.5 = 7.5 bar [110 psi]
 XXX = STD SETTING (without stamping)
 Range 2.75 to 15.0 bar [40 psi to 220 psi]

Housings & Ports	Housing P/N
00: Cartridge Only	No Body
3B: AL, 3/8 BSP	SDC10-3S-3B
4B: AL, 1/2 BSP	SDC10-3S-4B
6S: AL #6 SAE	SDC10-3S-6S
8S: AL #8 SAE	SDC10-3S-8S

Code	Seal Material	Seal kit
B	Buna	11126248
V	Viton	11126249

OPERATION

The CP700-4 is a 10-size, normally open, pilot-to-open, spring-biased differential-sensing logic element. It will modulate flow from 2 to 1 based on the spring control pressure, inlet pressure at port 1, and outlet pressure at port 3.

APPLICATION

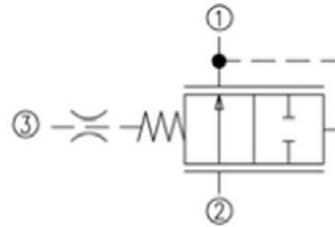
Common applications include: pre-compensator for proportional directional control or flow controls, as well as a pressure control valve. A common application for this valve is as a pressure compensator when applied with a fixed, or adjustable orifice to create a pressure-compensated flow control. This ensures that flow rate, and resulting actuator speed is maintained regardless of pressure drop across the control orifice. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.



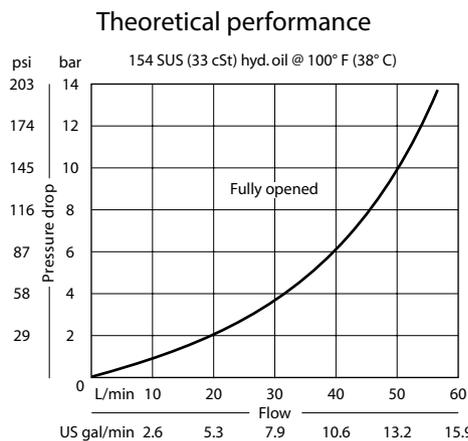
SPECIFICATION

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

SCHEMATIC



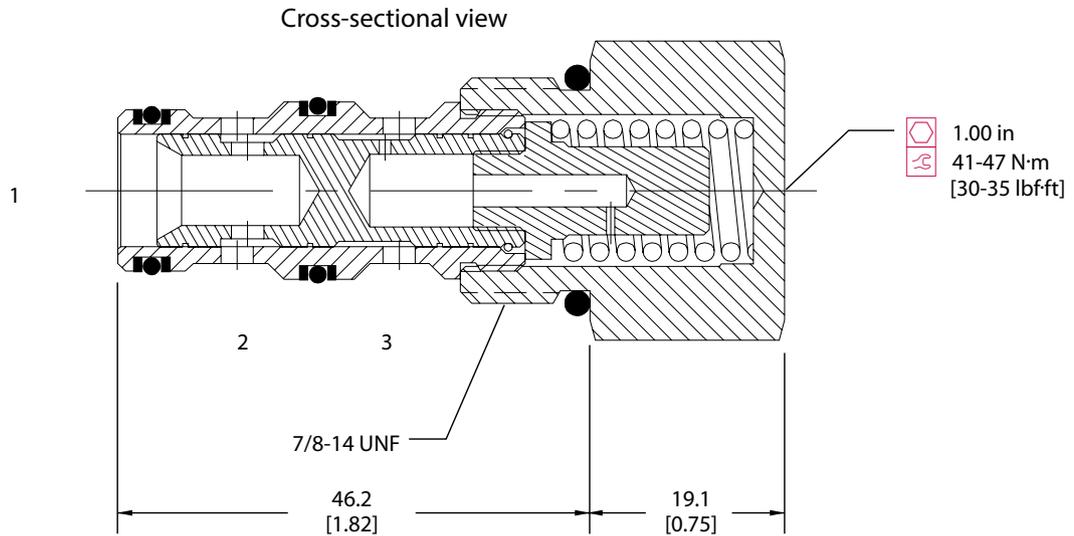
PERFORMANCE CURVE



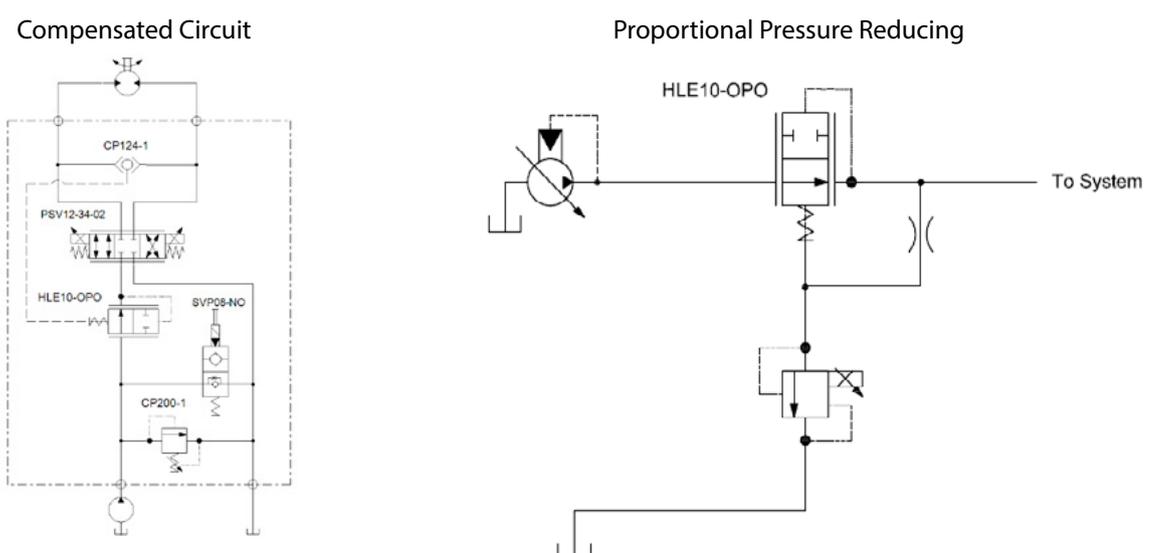
LE - Logic Elements
 CP700-4

DIMENSION

mm [in]



EXAMPLE CIRCUITS



ORDERING INFORMATION

CP700 - 4 - B - 8S - 080

Seals	Seal kit 120009 120010	Differential Control Pressure
B = Buna-N		bar [psi]
V = Viton		040 = 2.8 [40]
Housing and ports	Housing P/N	080 = 5.5 [80]
0 = No Housing	No Housing	110 = 7.6 [110]
SE3B = AL, 3/8 BSP	SDC10-3-SE-3B	150 = 10.3 [150]
SE4B = AL, 1/2 BSP	SDC10-3-SE-4B	200 = 13.8 [200]
6S = AL, #6 SAE	CP10-3-6S	
8S = AL, #8 SAE	CP10-3-8S	
Other housings available		

LE - Logic Elements
CP700-4

OPERATION

The HLE10-OPO is a 10-size, high pressure, normally open, pilot-to-open, spring-biased differential-sensing logic element. It will modulate flow from 2 to 1 based on the spring control pressure, inlet pressure at port 1, and outlet pressure at port 3. The HLE10-OPO technically replaces the CP700-4L, but cavities are not interchangeable.



APPLICATION

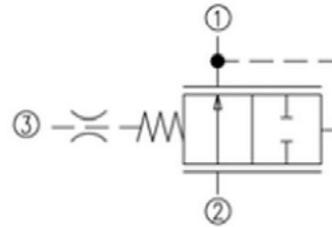
Common applications include: as a pre-compensator for proportional directional control or flow controls, as well as a pressure control valve. A common application for this valve is as a pressure compensator when applied with a fixed, or adjustable orifice to create a pressure-compensated flow control. This ensures that flow rate, and resulting actuator speed is maintained regardless of pressure drop across the control orifice. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

SPECIFICATION

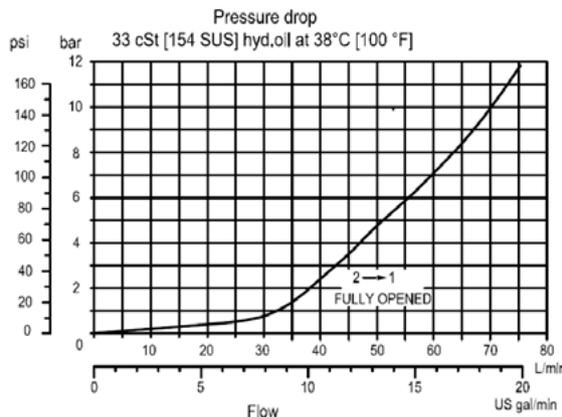
Rated Pressure*	350 bar [5075 psi]
Rated Flow at 7 bar [100 psi]	60 l/min [16 US gal/min]
Weight	0.14 kg [0.31 lbs]
Cavity	SDC10-3S

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

SCHEMATIC

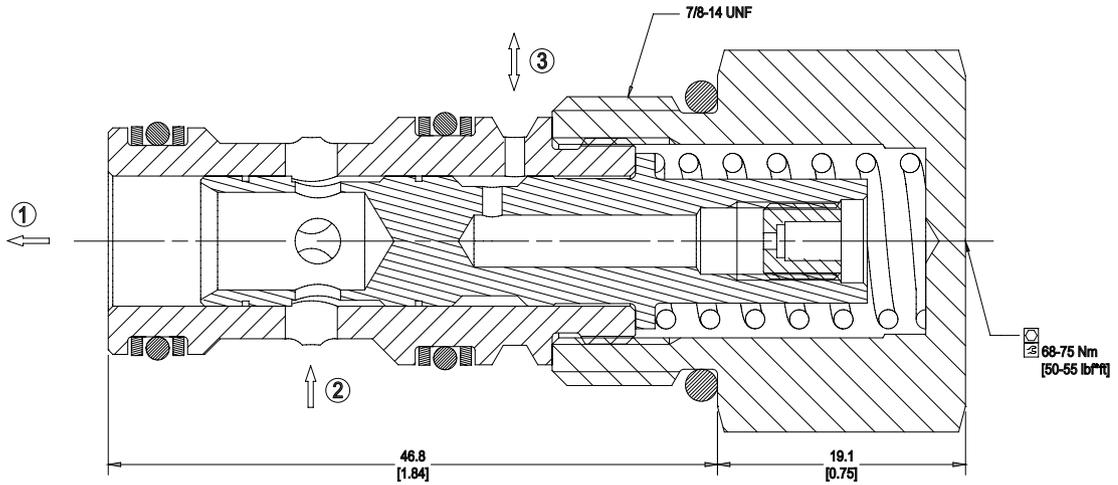


PERFORMANCE CURVE

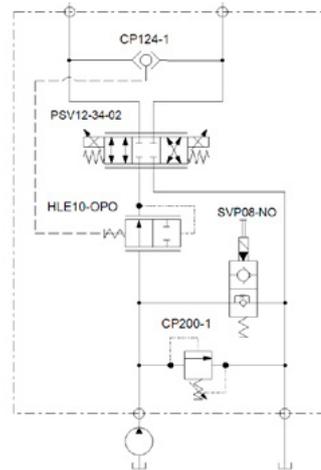


LE - Logic Elements
 HLE10-OPO

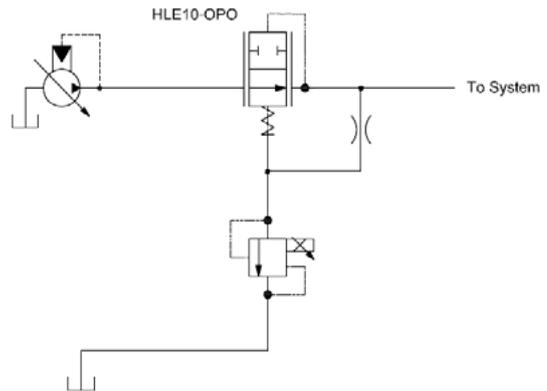
DIMENSION



EXAMPLE CIRCUITS



Compensated Bi-directional Flow Control



Proportional Pressure Reducing Valve

ORDERING INFORMATION

HLE10:
 High Pressure Logic
 Element, 10-size

OPO:
 Normally Open,
 Pilot to Open

HLE10 - OPO - 2.75 - B - 00

Differential Pressure Control

Code	Description
2.75	2.75 bar [40 psi]
5.5	5.5 bar [80 psi]
7.5	7.5 bar [110 psi]
10.0	10.0 bar [150 psi]
13.0	13.0 bar [190 psi]
15.0	15.0 bar [218 psi]

Code	Ports & Material	Body Nomenclature
00	Cartridge Only	No Body
6S	#6 SAE, AL	SDC10-3S-6S
8S	#8 SAE, AL	SDC10-3S-8S
S6S	#6 SAE, DUCTILE	SDC10-3S-S6S
S8S	#8 SAE, DUCTILE	SDC10-3S-S8S
3B	3/8 BSP, AL	SDC10-3S-3B
4B	1/2 BSP, AL	SDC10-3S-4B
S3B	3/8 BSP, DUCTILE	SDC10-3S-S3B
S4B	1/2 BSP, DUCTILE	SDC10-3S-S4B

Code	Seal Material	Seal kit
B	Buna	11126248
V	Viton	11126249

OPERATION

The CP701-4 is a 12-size, normally open, pilot-to-open, spring-biased differential-sensing logic element. It will modulate flow from 2 to 1 based on the spring control pressure, inlet pressure at port 1, and outlet pressure at port 3.

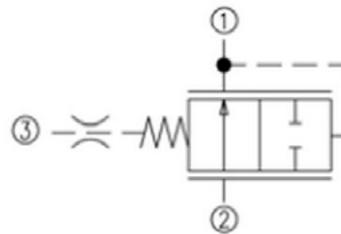
APPLICATION

Common applications include: pre-compensator for proportional directional control or flow controls, as well as a pressure control valve. A common application for this valve is as a pressure compensator when applied with a fixed, or adjustable orifice to create a pressure-compensated flow control. This ensures that flow rate, and resulting actuator speed is maintained regardless of pressure drop across the control orifice. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

SPECIFICATION

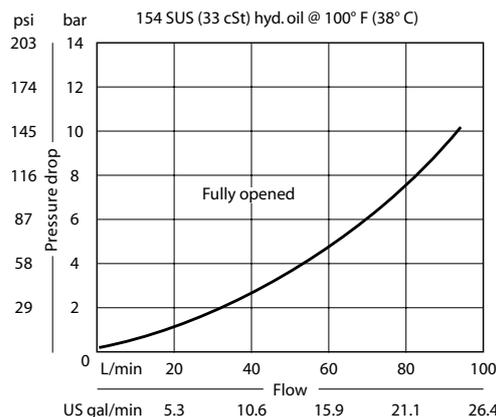
Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	75 l/min [20 US gal/min]
Weight	0.26 kg [0.57 lb]
Cavity	CP12-3S

SCHEMATIC



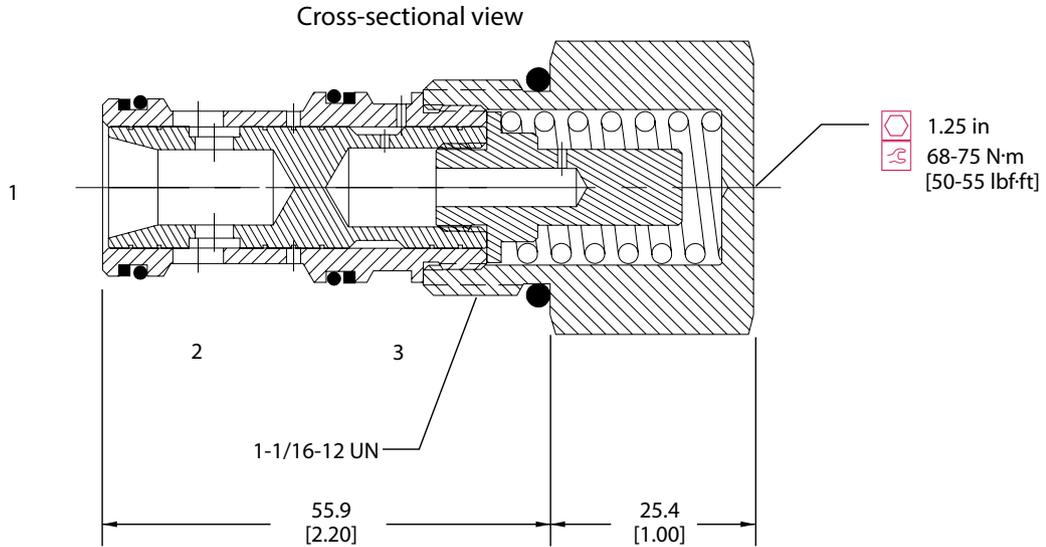
PERFORMANCE CURVE

Theoretical performance

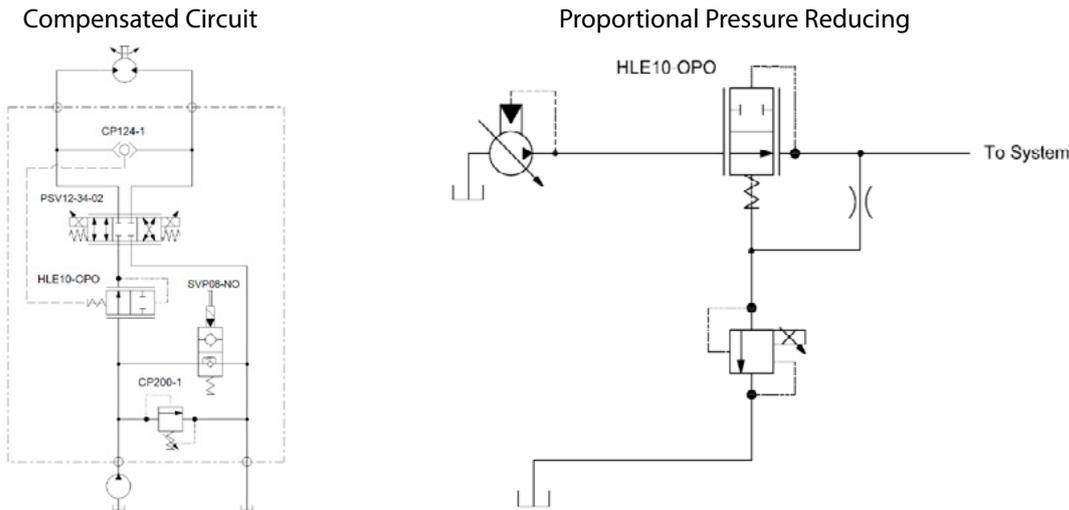


DIMENSION

mm [in]



EXAMPLE CIRCUITS



ORDERING INFORMATION

CP701 - 4 - B - 12S - 080

Seals	Seal kit 120335 120336	Differential Control Pressure
B = Buna-N		030 = 2.1 [30]
V = Viton		050 = 3.5 [50]
Housing and ports	Housing P/N	080 = 5.5 [80]
0 = No housing	No housing	100 = 6.9 [100]
4B = AL, 1/2 BSP	CP12-3S-4B/2B = 1/4 BSP	150 = 10.3 [150]
6B = AL, 3/4 BSP	CP12-3S-6B/2B = 1/4 BSP	
10S = AL, #10 SAE	CP12-3S-10S/4S = #4 SAE	
12S = AL, #12 SAE	CP12-3S-12S/4S = #4 SAE	

LE - Logic Elements
CP701-4

OPERATION

The CP702-4 is a 16-size, normally open, pilot-to-open, spring-biased differential-sensing logic element. It will modulate flow from 2 to 1 based on the spring control pressure, inlet pressure at port 1, and outlet pressure at port 3.

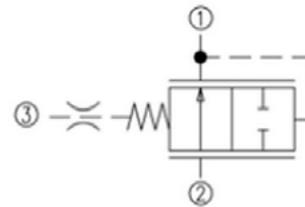
APPLICATION

Common applications include: pre-compensator for proportional directional control or flow controls, as well as a pressure control valve. A common application for this valve is as a pressure compensator when applied with a fixed, or adjustable orifice to create a pressure-compensated flow control. This ensures that flow rate, and resulting actuator speed is maintained regardless of pressure drop across the control orifice. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

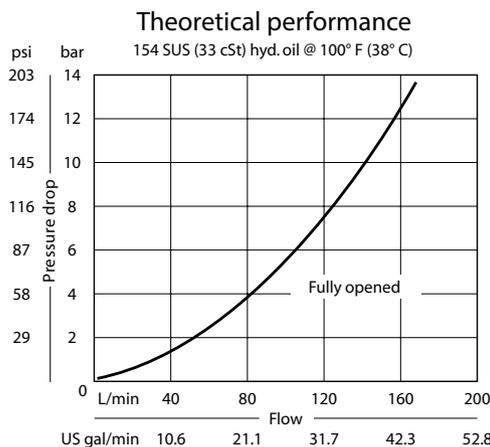
SPECIFICATION

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

SCHEMATIC



PERFORMANCE CURVE

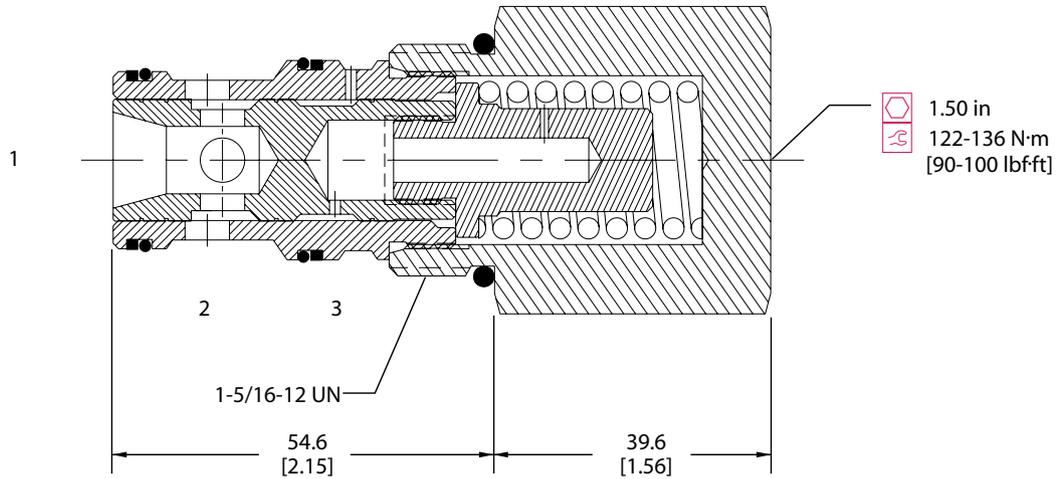


LE - Logic Elements
 CP702-4

DIMENSION

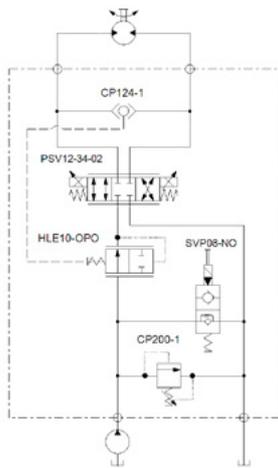
mm [in]

Cross-sectional view

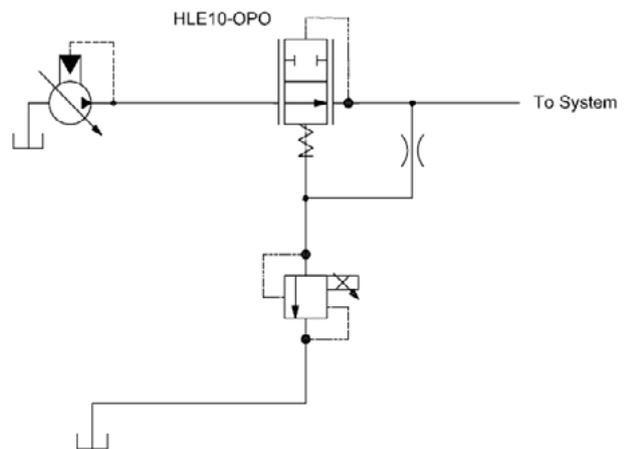


EXAMPLE CIRCUITS

Compensated Circuit



Proportional Pressure Reducing



ORDERING INFORMATION

CP702-4-B-16S-080

Seal Option

Code	Seal Material	Seal kit
B	Buna	120033
V	Viton	120034

Housings & Ports	Housing P/N	Pilot port
0: Cartridge Only	No Housing	
6B: 3/4 BSP, AL	CP16-3S-6B/2B	1/4 BSP
8B: 1 BSP, AL	CP16-3S-8B/2B	1/4 BSP
12S: #12 SAE, AL	CP16-3S-12S/4S	#4 SAE
16S: #16 SAE, AL	CP16-3S-16S/4S	#4 SAE

Other Housings available

Differential Control Pressure

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

OPERATION

The CP703-4 is a 20-size, normally open, pilot-to-open, spring-biased differential-sensing logic element. It will modulate flow from 2 to 1 based on the spring control pressure, inlet pressure at port 1, and outlet pressure at port 3.

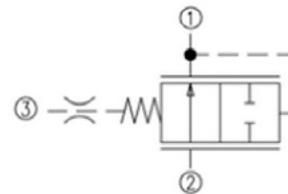
APPLICATION

Common applications include: pre-compensator for proportional directional control or flow controls, as well as a pressure control valve. A common application for this valve is as a pressure compensator when applied with a fixed, or adjustable orifice to create a pressure-compensated flow control. This ensures that flow rate, and resulting actuator speed is maintained regardless of pressure drop across the control orifice. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

SPECIFICATION

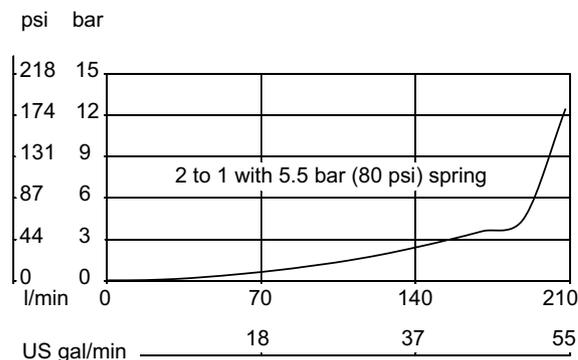
Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	200 l/min [53 US gal/min]
Weight	1.18 kg [2.60 lb]
Cavity	CP20-3S

SCHEMATIC



PERFORMANCE CURVE

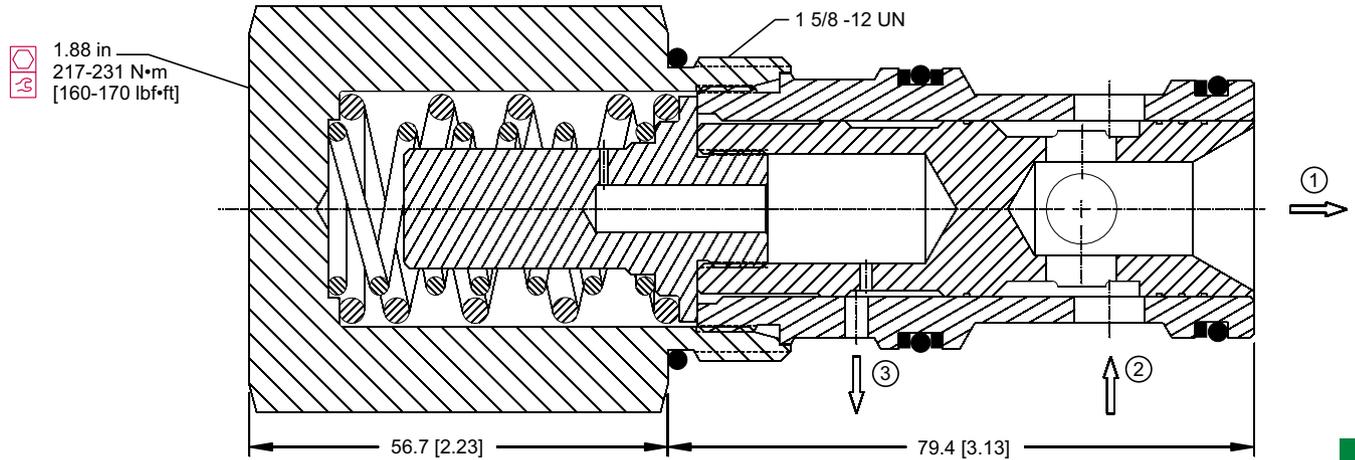
Theoretical performance
 Pressure Drop
 33 cSt [154 SUS] hyd.oil @ 38°C [100° F]



DIMENSION

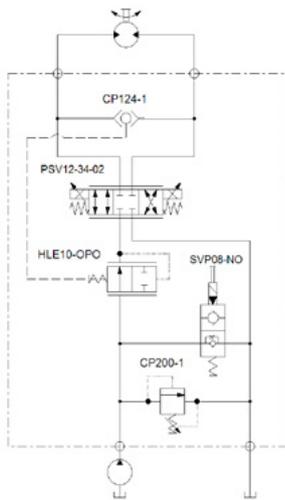
mm [in]

Cross-sectional view

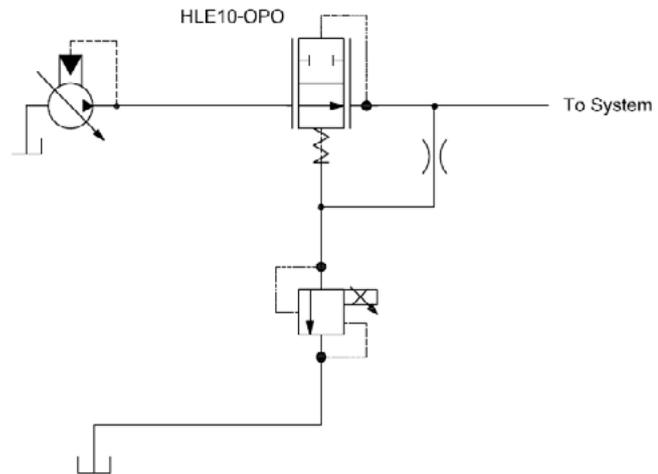


EXAMPLE CIRCUITS

Compensated Circuit



Proportional Pressure Reducing



ORDERING INFORMATION

		CP703-4-B-8B-050		
Seals		Seal kit		Differential Control Pressure
B = Buna-N		120380		bar [psi]
V = Viton		120381		050 = 3.5 [50]
Housing and ports		Housing P/N	Pilot port	080 = 5.5 [80]
0 = No housing		No housing		100 = 6.9 [100]
8B = AL, 1 BSP		CP20-3S-8B/2B = 1/4 BSP		130 = 9.0 [130]
10B = AL, 1-1/4 BSP		CP20-3S-10B/2B = 1/4 BSP		150 = 10.3 [150]
16S = AL, #16 SAE		CP20-3S-16S/4S = #4 SAE		
20S = AL, #20 SAE		CP20-3S-20S/4S = #4 SAE		
other housings available				

LE - Logic Elements
CP703-4

OPERATION

The CP700-3 is a 10-size, normally open, pilot-to-close, spring-biased differential-sensing logic element. It will modulate flow from 2 to 1 based on the spring control pressure, inlet pressure at port 1, and outlet pressure at port 3.

APPLICATION

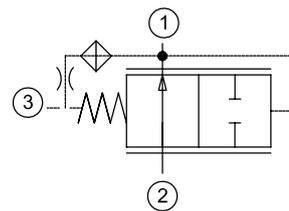
Common applications include: high-flow pressure reducing valve when using a small relief valve (like CP208-1), or a proportional relief valve (like PRV08-DAC) as a pilot element. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.



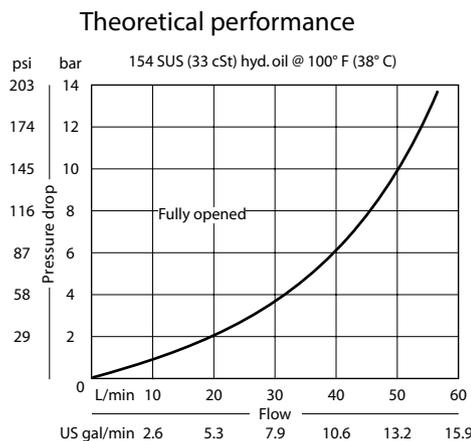
SPECIFICATION

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

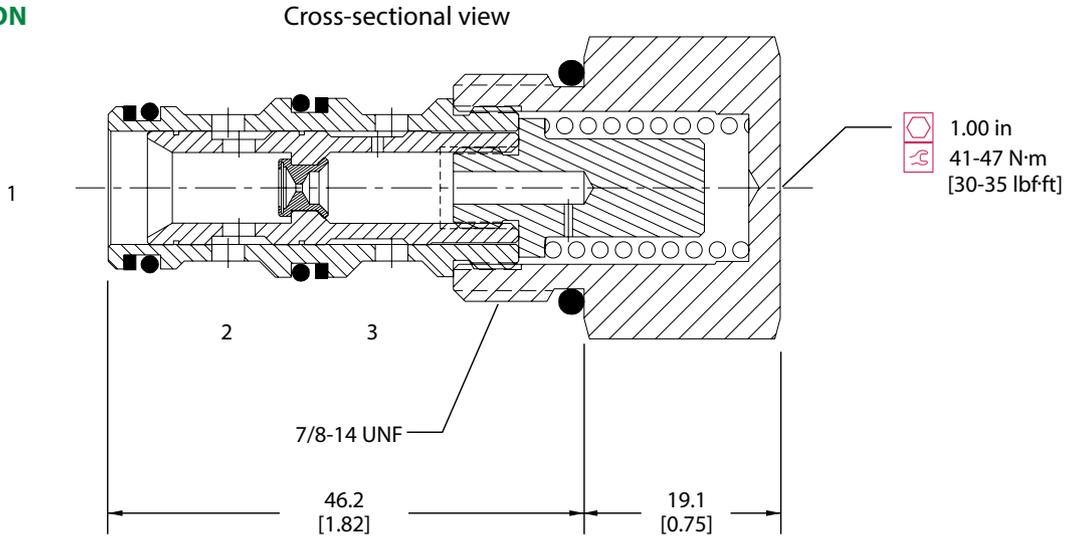
SCHEMATIC



PERFORMANCE CURVE

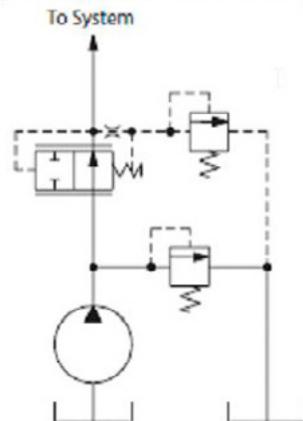


DIMENSION
 mm [in]



EXAMPLE CIRCUITS

Pilot-operated pressure reducing valve



ORDERING INFORMATION

CP700 - 3 - 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

Seal kit

120027
 120028

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]

OPERATION

The CP701-3 is a 12-size, normally open, pilot-to-close, spring-biased differential-sensing logic element. It will modulate flow from 2 to 1 based on the spring control pressure, inlet pressure at port 1, and outlet pressure at port 3.

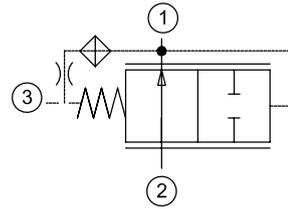
APPLICATION

Common applications include: high-flow pressure reducing valve when using a small relief valve (like CP208-1), or a proportional relief valve (like PRV08-DAC) as a pilot element. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

SPECIFICATION

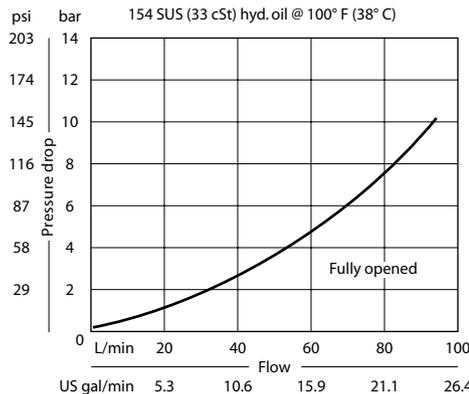
Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	80 l/min [21 US gal/min]
Weight	0.26 kg [0.57 lb]
Cavity	CP12-3S

SCHEMATIC



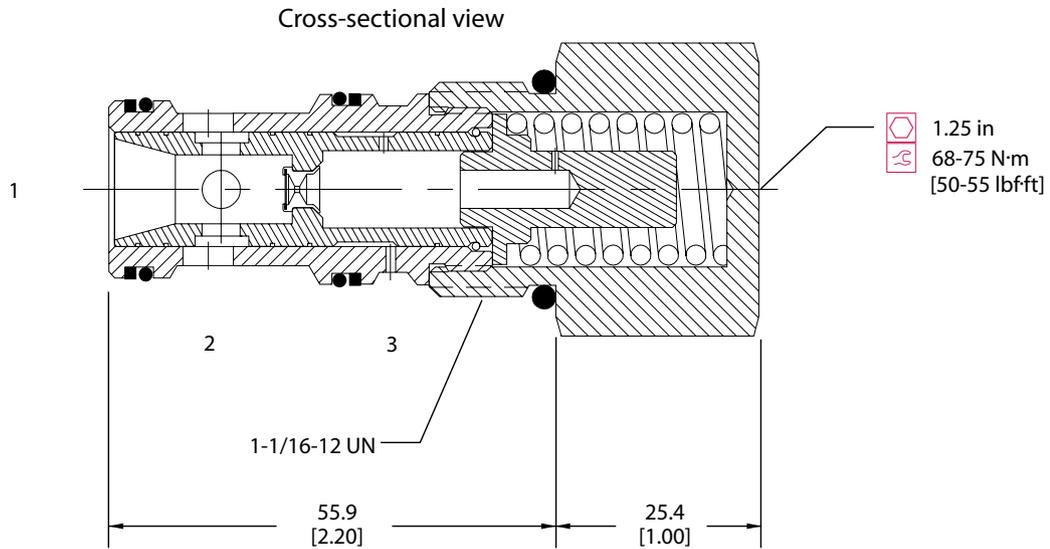
PERFORMANCE CURVE

Theoretical performance



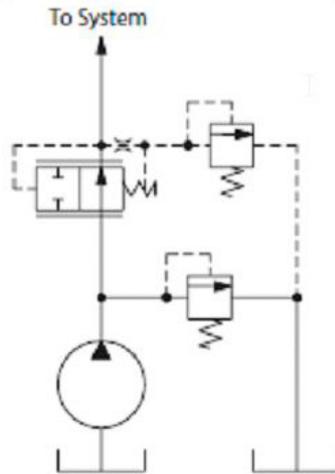
DIMENSION

mm [in]



EXAMPLE CIRCUITS

Pilot-operated pressure reducing valve



ORDERING INFORMATION

CP701 - 3 - B - 12S - 080

Seals			
B = Buna-N			
V = Viton			
Housing and ports	Seal kit	Housing P/N	Pilot port
0 = No housing	120335	No housing	
4B = AL, 1/2 BSP	120336	CP12-3S-4B/2B = 1/4 BSP	
6B = AL, 3/4 BSP		CP12-3S-6B/2B = 1/4 BSP	
10S = AL, #10 SAE		CP12-3S-10S/4S = #4 SAE	
12S = AL, #12 SAE		CP12-3S-12S/4S = #4 SAE	
			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]

OPERATION

The CP702-3 is a 16-size, normally open, pilot-to-close, spring-biased differential-sensing logic element. It will modulate flow from 2 to 1 based on the spring control pressure, inlet pressure at port 1, and outlet pressure at port 3.

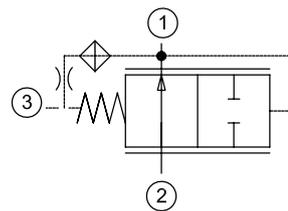
APPLICATION

Common applications include: high-flow pressure reducing valve when using a small relief valve (like CP208-1), or a proportional relief valve (like PRV08-DAC) as a pilot element. Effective use of logic elements is a key to designing cost-effective circuits, and is limited only by the imagination of the designer.

SPECIFICATION

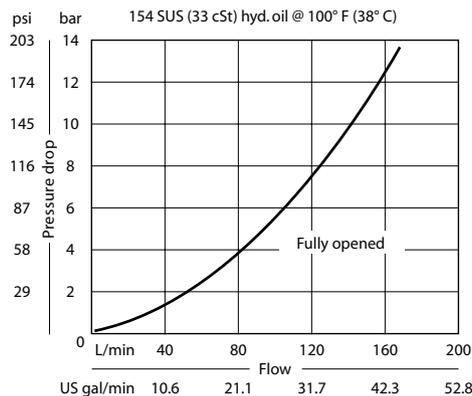
Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	115 l/min [30 US gal/min]
Weight	0.38 kg [0.83 lb]
Cavity	SDC16-3S

SCHEMATIC



PERFORMANCE CURVE

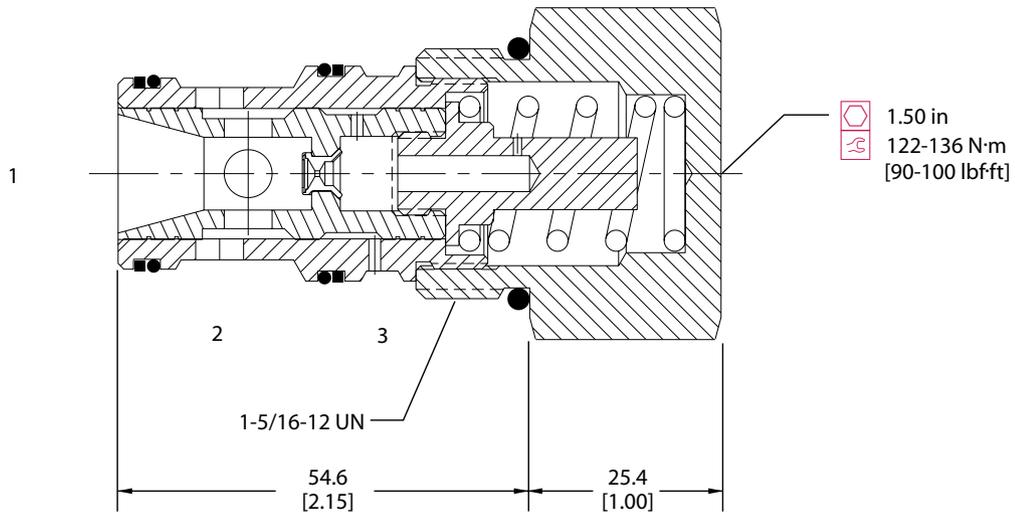
Theoretical performance



DIMENSION

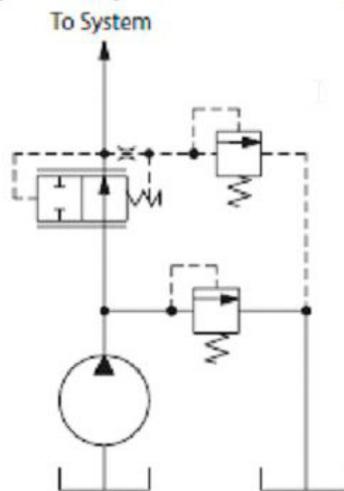
mm [in]

Cross-sectional view



EXAMPLE CIRCUITS

Pilot-operated pressure reducing valve



ORDERING INFORMATION

CP702-3 - B - 16S - 080

Seal Option

Code	Seal Material	Seal kit
B	Buna	120033
V	Viton	120034

Housings & Ports	Housing P/N	Pilot port
0: Cartridge Only	No Housing	
6B: 3/4 BSP, AL	CP16-3S-6B/2B	1/4 BSP
8B: 1 BSP, AL	CP16-3S-8B/2B	1/4 BSP
12S: #12 SAE, AL	CP16-3S-12S/4S	#4 SAE
16S: #16 SAE, AL	CP16-3S-16S/4S	#4 SAE

Other Housings available

Differential Control Pressure

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

OPERATION

The CP310-4 is a 10-size, flow control, priority type pressure compensator. 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.

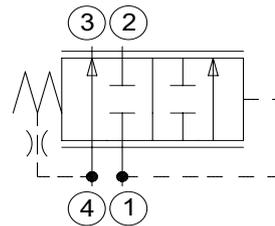
APPLICATION

Common applications include any circuit that requires compensated priority flow going to one actuator (for example, steering or charge pressure to a hydrostatic pump), and the remaining going to a secondary function (for example, a fan motor). 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

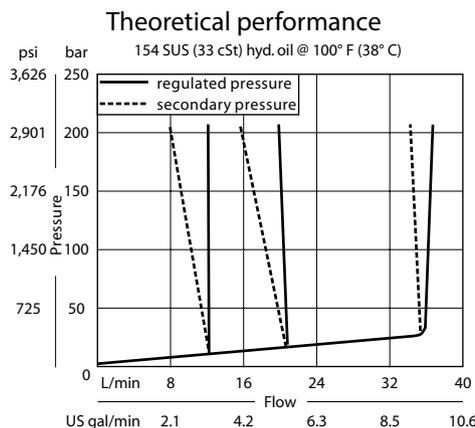
SPECIFICATION

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

SCHEMATIC



PERFORMANCE CURVE

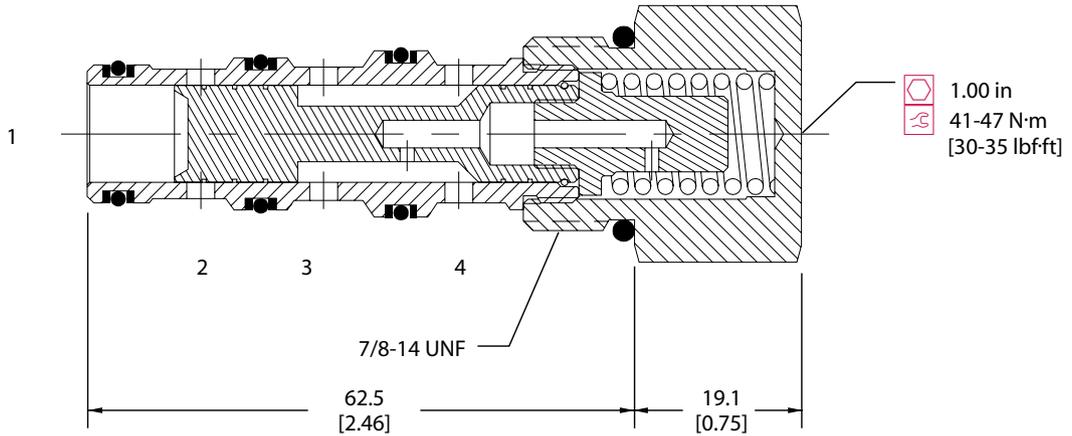


LE - Logic Elements
 CP310-4

DIMENSION

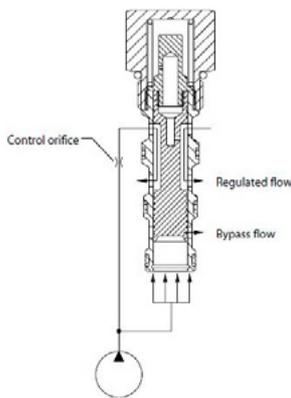
mm [in]

Cross-sectional view

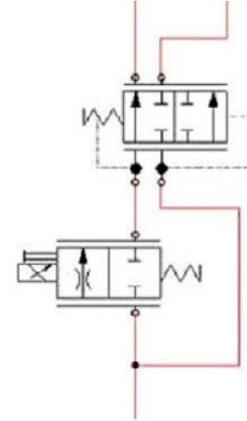


EXAMPLE CIRCUITS

Priority-type pressure Compensator operation



Post-Compensated Proportional Priority Flow Control



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]

OPERATION

The CP311-4 is a 12-size, flow control, priority type pressure compensator. 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.

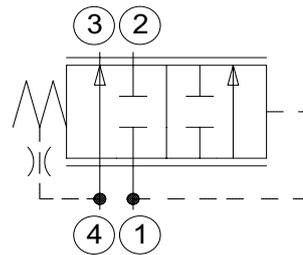
APPLICATION

Common applications include any circuit that requires compensated priority flow going to one actuator (for example, steering or charge pressure to a hydrostatic pump), and the remaining going to a secondary function (for example, a fan motor). 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.

SPECIFICATION

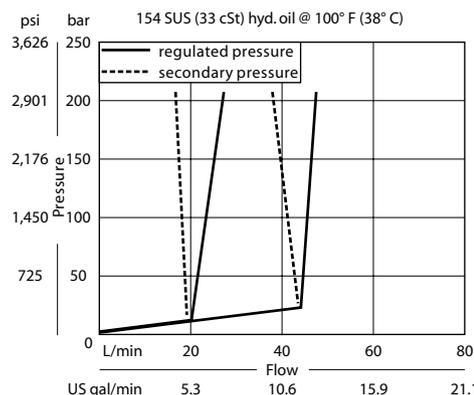
Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	60 l/min [16 US gal/min]
Weight	0.31 kg [0.69 lb]
Cavity	CP12-4

SCHEMATIC



PERFORMANCE CURVE

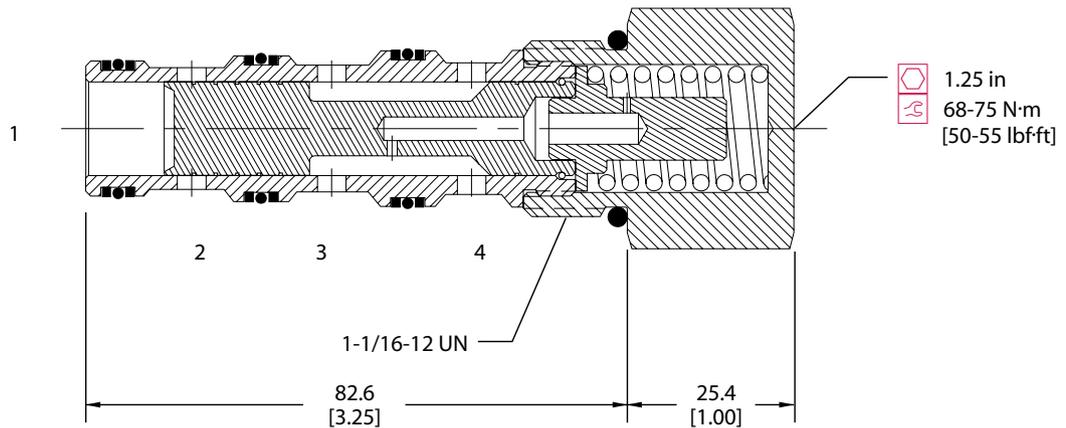
Theoretical performance



DIMENSION

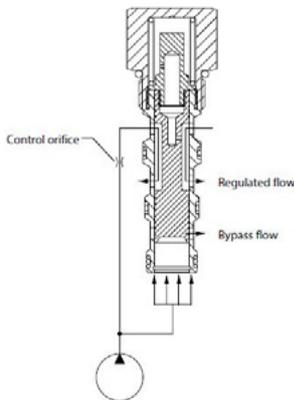
mm [in]

Cross-sectional view

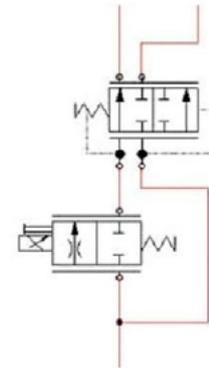


EXAMPLE CIRCUITS

Priority-type pressure Compensator operation



Post-Compensated Proportional Priority Flow Control



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

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

OPERATION

The CP312-4 is a 16-size, flow control, priority type pressure compensator. 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.

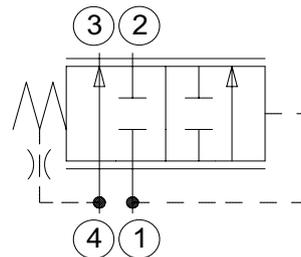
APPLICATION

Common applications include any circuit that requires compensated priority flow going to one actuator (for example, steering or charge pressure to a hydrostatic pump), and the remaining going to a secondary function (for example, a fan motor). 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.

SPECIFICATION

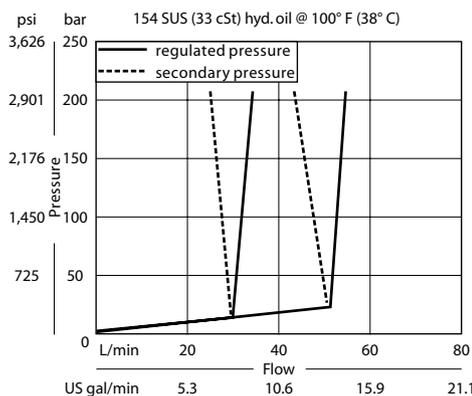
Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	130 l/min [34 US gal/min]
Weight	0.60 kg [1.32 lb]
Cavity	CP16-4

SCHEMATIC



PERFORMANCE CURVE

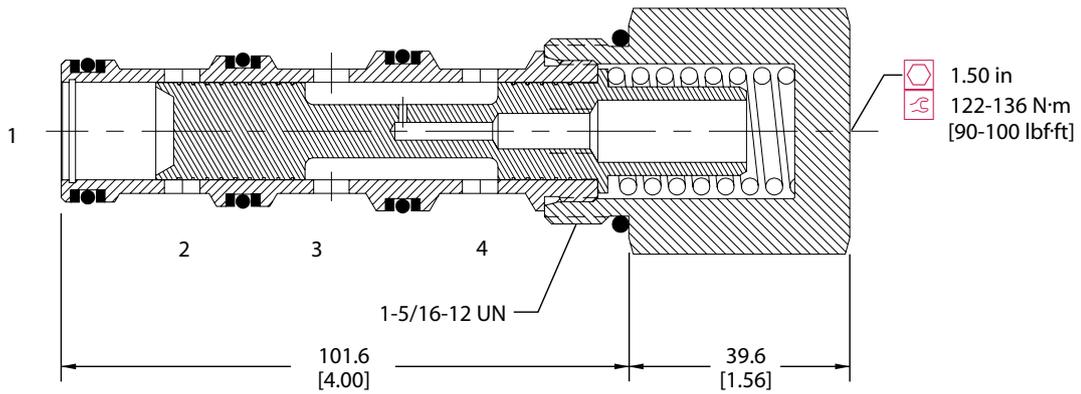
Theoretical performance



DIMENSION

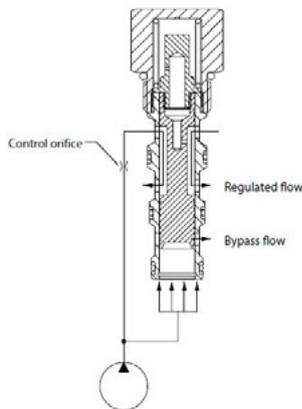
mm [in]

Cross-sectional view

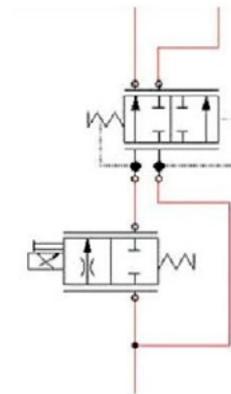


EXAMPLE CIRCUITS

Priority-type pressure Compensator operation



Post-Compensated Proportional Priority Flow Control



ORDERING INFORMAT

CP312 - 4 - B - 16S - 080

<p>Seals</p> <p>B = Buna-N V = Viton</p> <p>Housing and ports</p> <p>0 = No housing 6B = AL, 3/4 BSP 8B = AL, 1 BSP 12S = AL, #12 SAE 16S = AL, #16 SAE Other housings available</p>	<p>Seal kit 120025 120026</p> <p>Housing P/N</p> <p>No housing CP16-4-6B CP16-4-8B CP16-4-12S CP16-4-16S</p>	<p>Differential Control Pressure</p> <table border="0"> <tr> <td></td> <td>bar</td> <td>[psi]</td> </tr> <tr> <td>040</td> <td>= 2.8</td> <td>[40]</td> </tr> <tr> <td>080</td> <td>= 5.5</td> <td>[80]</td> </tr> <tr> <td>110</td> <td>= 7.6</td> <td>[110]</td> </tr> <tr> <td>150</td> <td>= 10.3</td> <td>[150]</td> </tr> </table>		bar	[psi]	040	= 2.8	[40]	080	= 5.5	[80]	110	= 7.6	[110]	150	= 10.3	[150]
	bar	[psi]															
040	= 2.8	[40]															
080	= 5.5	[80]															
110	= 7.6	[110]															
150	= 10.3	[150]															

OPERATION

The CP313-4 is a 20-size, flow control, priority type pressure compensator. 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.

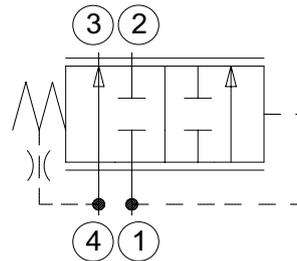
APPLICATION

Common applications include any circuit that requires compensated priority flow going to one actuator (for example, steering or charge pressure to a hydrostatic pump), and the remaining going to a secondary function (for example, a fan motor). 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.

SPECIFICATION

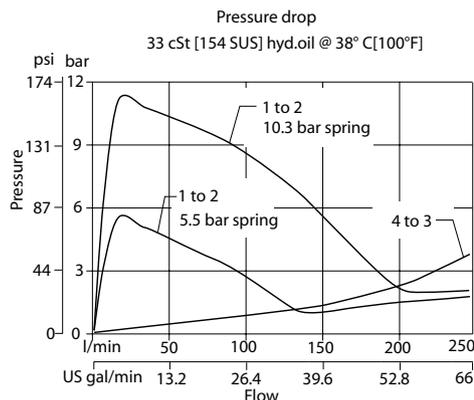
Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	340 l/min [90 US gal/min]
Weight	1.30 kg [2.80 lb]
Cavity	SDC20-4

SCHEMATIC



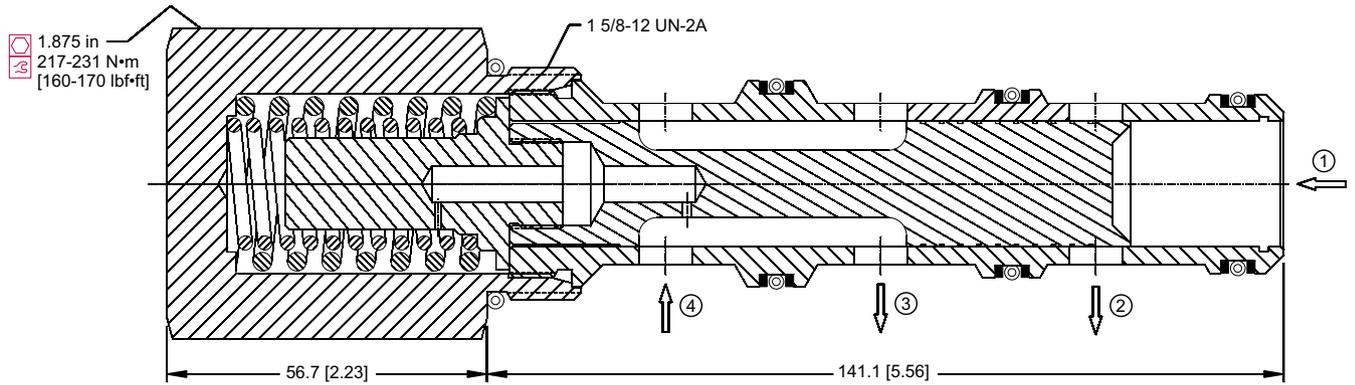
PERFORMANCE CURVE

Theoretical performance



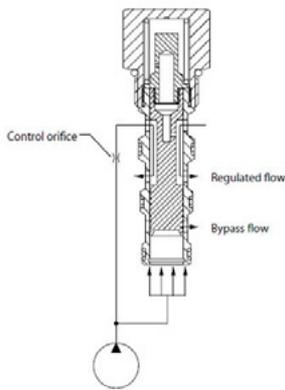
DIMENSION
 mm [in]

Cross-sectional view

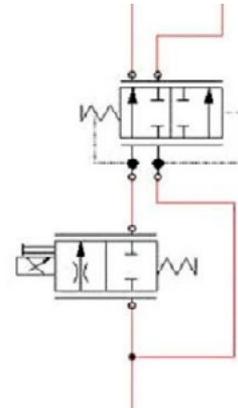


EXAMPLE CIRCUITS

Priority-type pressure Compensator operation



Post-Compensated Proportional Priority Flow Control



ORDERING INFORMATION

		CP313-4-B-16S-130			
Seals				Differential control pressure	
	B = Buna-N	Seal kits	120181		
	V = Viton		120182		
Housing and ports		Housing P/N			
0	= No Housing	No Housing		050 = 3.4	50
8B	= AL, 1 BSP	CP20-4-8B		080 = 5.5	80
10B	= AL, 1-1/4 BSP	CP20-4-10B		100 = 6.9	100
16S	= AL, #16 SAE	CP20-4-16S		130 = 9.0	130
20S	= AL, #20 SAE	CP20-4-20S		150 = 10.3	150
Other housings available					

OPERATION

The CP300-4 is a 10-size, flow control, restrictive type pressure compensator. 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 in the example circuit. The spool “senses” the pressure on either side of the control orifice and will vary it’s restriction in order to maintain a constant pressure differential across the control orifice, hence maintaining a constant flow rate.

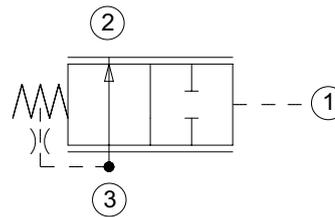
APPLICATION

Common applications include any circuit that requires compensated flow control going to one actuator or circuit. 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

SPECIFICATION

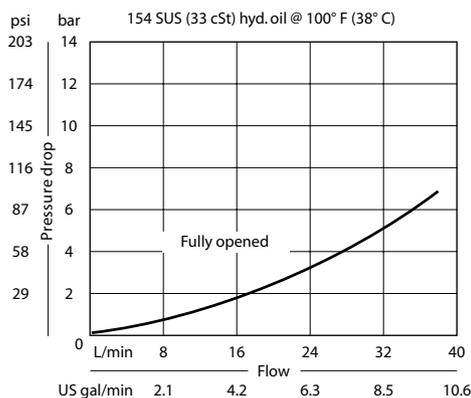
Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	40 l/min [10.6 US gal/min]
Weight	0.13 kg [0.29 lb]
Cavity	SDC10-3

SCHEMATIC



PERFORMANCE CURVE

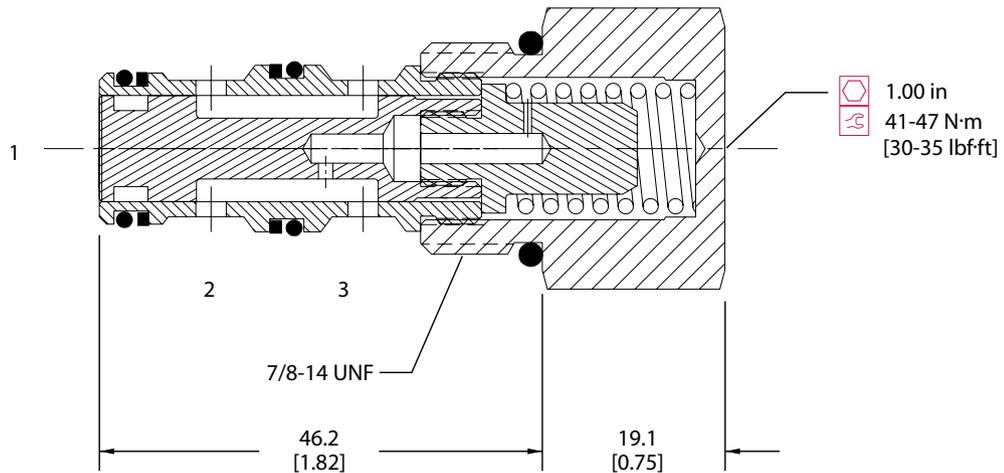
Theoretical performance



DIMENSION

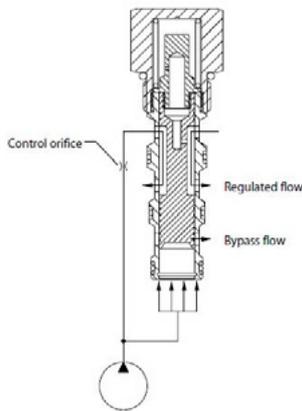
mm [in]

Cross-sectional view

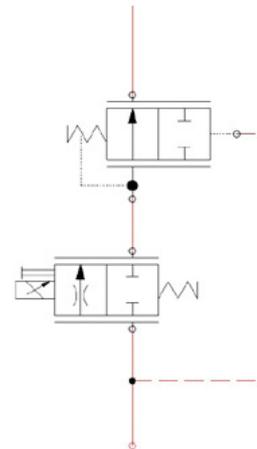


EXAMPLE CIRCUITS

Priority-type pressure Compensator operation



Post-Compensated Proportional Flow Control



ORDERING INFORMATION

CP300 - 4 - B - 8S - 0 - 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

Seal kit
 120027
 120028

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]

OPERATION

The CP301-4 is a 12-size, flow control, restrictive type pressure compensator. 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 in the example circuit. The spool “senses” the pressure on either side of the control orifice and will vary it’s restriction in order to maintain a constant pressure differential across the control orifice, hence maintaining a constant flow rate.

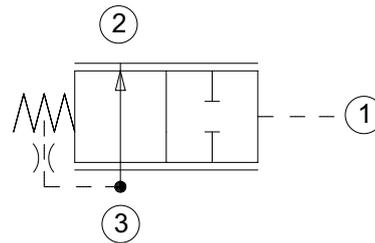
APPLICATION

Common applications include any circuit that requires compensated flow control going to one actuator or circuit. 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

SPECIFICATION

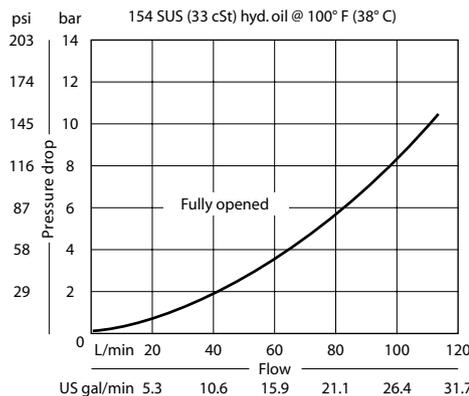
Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	90 l/min [24 US gal/min]
Weight	0.30 kg [0.67 lb]
Cavity	CP12-3

SCHEMATIC



PERFORMANCE CURVE

Theoretical performance

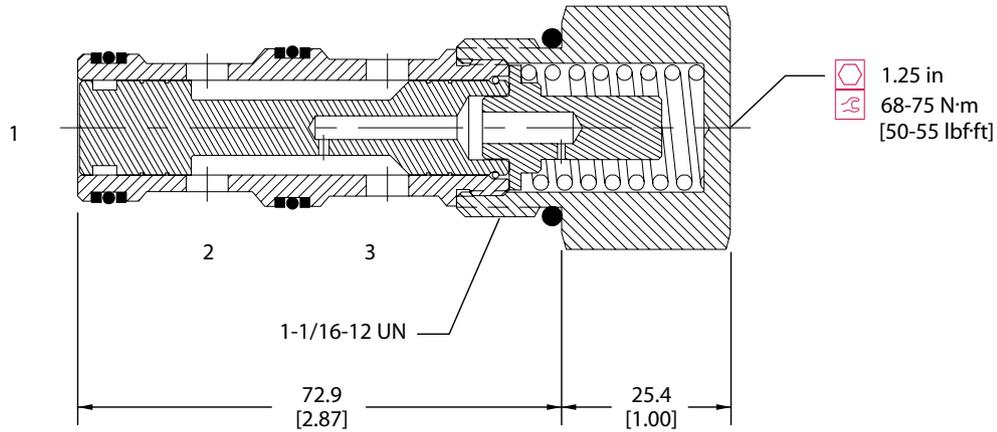


LE - Logic Elements
 CP301-4

DIMENSION

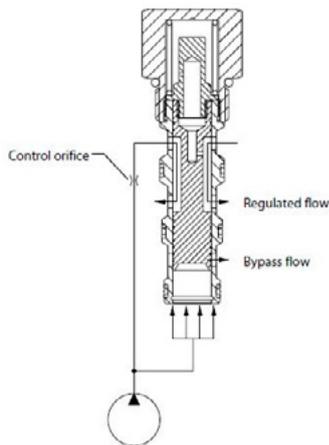
mm [in]

Cross-sectional view

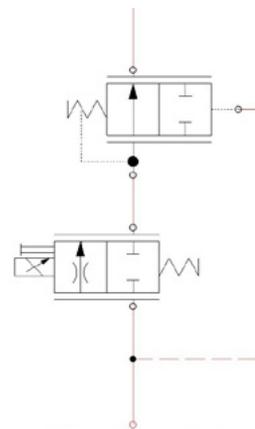


EXAMPLE CIRCUITS

Priority-type pressure Compensator operation



Post-Compensated Proportional Flow Control



ORDERING INFORMATION

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

Seals

B = Buna-N
V = Viton

Housing and ports

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

Seal kit
120053
120052

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]

OPERATION

The CP302-4 is a 16-size, flow control, restrictive type pressure compensator. 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 in the example circuit. The spool “senses” the pressure on either side of the control orifice and will vary it’s restriction in order to maintain a constant pressure differential across the control orifice, hence maintaining a constant flow rate.

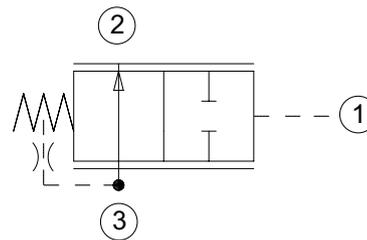
APPLICATION

Common applications include any circuit that requires compensated flow control going to one actuator or circuit. 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

SPECIFICATION

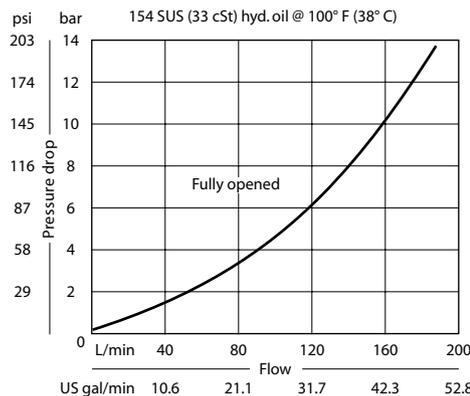
Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	130 l/min [34 US gal/min]
Weight	0.56 kg [1.24 lb]
Cavity	SDC16-3

SCHEMATIC



PERFORMANCE CURVE

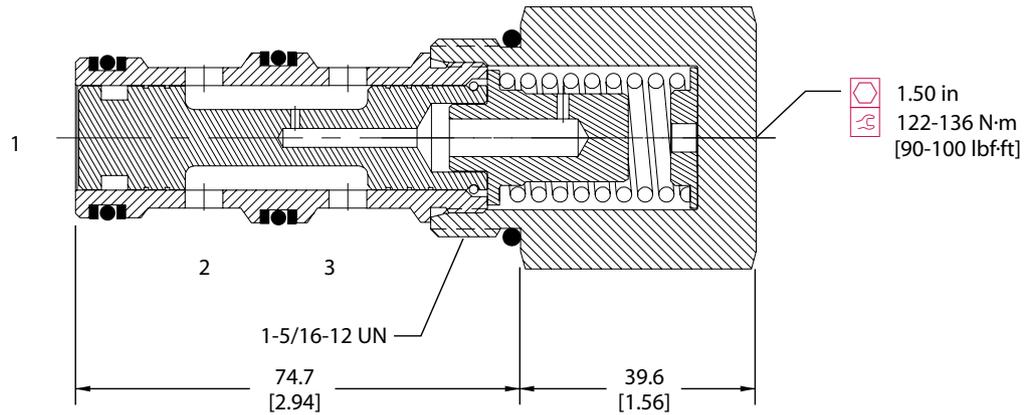
Theoretical performance



DIMENSION

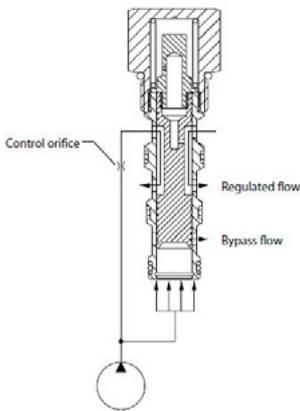
mm [in]

Cross-sectional view

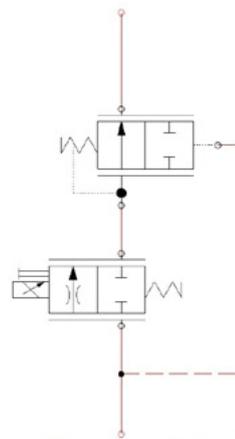


EXAMPLE CIRCUITS

Priority-type pressure Compensator operation



Post-Compensated Proportional Flow Control



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]

OPERATION

The CP303-4 is a 20-size, flow control, restrictive type pressure compensator. 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 in the example circuit. 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.

APPLICATION

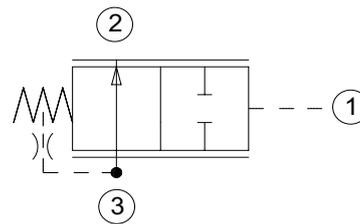
Common applications include any circuit that requires compensated flow control going to one actuator or circuit. Pressure compensators offer the circuit designer capability to add pressure compensation to any fixed or variable orifice. This ensures that flow, and resulting actuator speed, are maintained regardless of system and working pressures



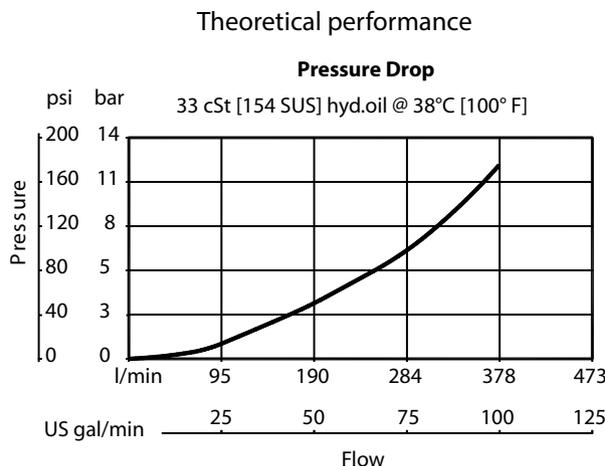
SPECIFICATION

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

SCHEMATIC



PERFORMANCE CURVE

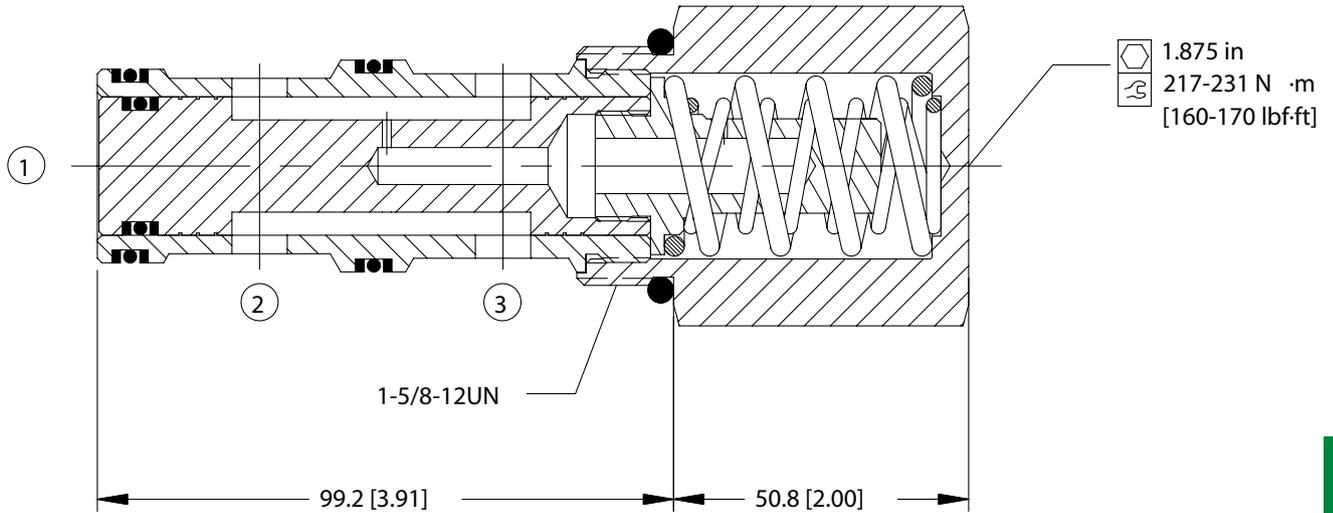


LE - Logic Elements
 CP303-4

DIMENSION

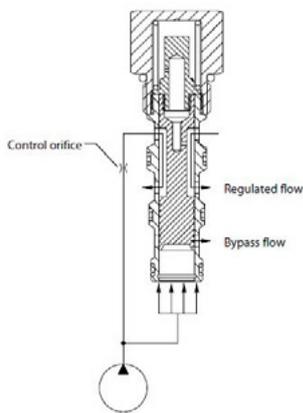
mm [in]

Cross-sectional view

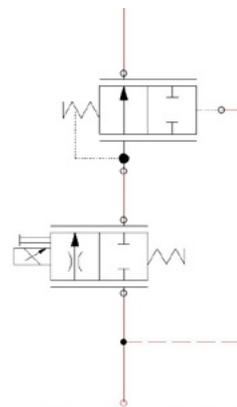


EXAMPLE CIRCUITS

Priority-type pressure Compensator operation



Post-Compensated Proportional Flow Control



ORDERING INFORMATION

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

Seals

B = BUNA-N
 V = VITON

Seal kit
 120200
 120201

Housing and ports

0 = Cartridge only
 16S = AL, #16 SAE
 20S = AL, #20 SAE
 8B = AL, 1 BSP
 10B = AL, 1-1/4 BSP
 other housings available

Housing P/N

No Body
 CP20-3-16S
 CP20-3-20S
 CP20-3-3B
 CP20-3-4B

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]

OPERATION

The CP310-6 is a 10-size, load sense, priority, static, pressure compensator. The valve will provide on-demand priority flow to port 2 in the required amount (dependent on the load sense pressure on port 1), allowing the excess flow to go to auxiliary functions through port 3.

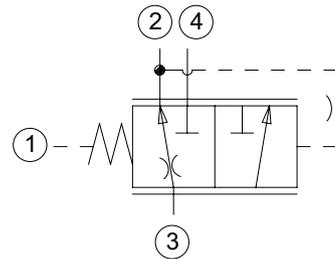
APPLICATION

Common applications include steering circuits that require pre-compensated, priority flow to go to the steering system, and the excess flow will go to an auxiliary function, like a fan motor. To obtain dynamic load sensing (priority type pre-comp) add in orifice between ports 2 and 1 in the manifold. This provides faster response and is commonly used in steering to flush out LS line. See Circuit Example.

SPECIFICATION

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

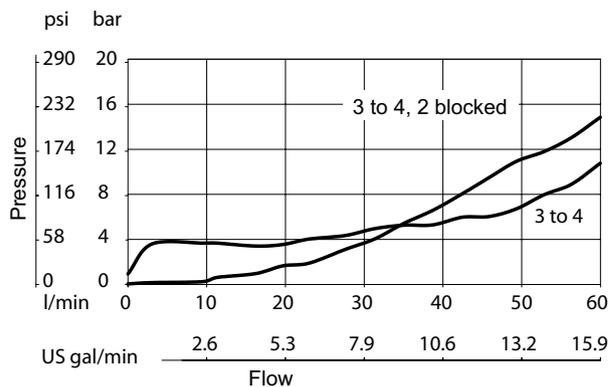
SCHEMATIC



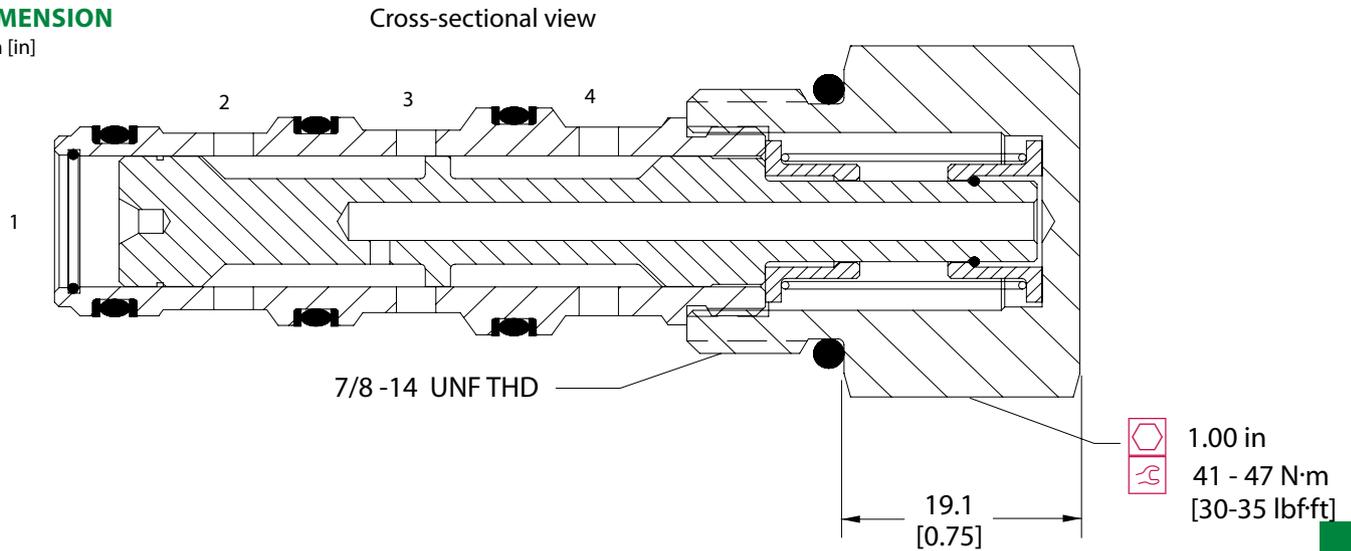
PERFORMANCE CURVE

Theoretical performance
 Pressure Drop

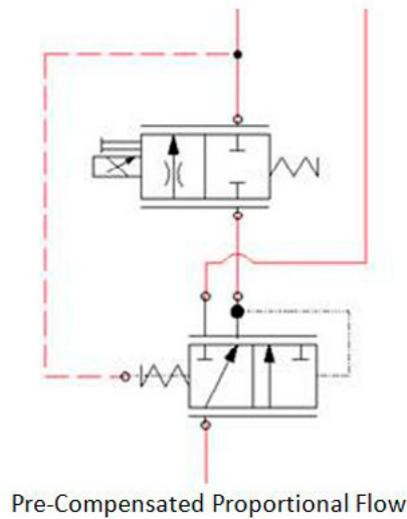
33 cSt [154 SUS] hyd.oil @ 38°C [100° F]



DIMENSION
 mm [in]



EXAMPLE CIRCUITS



ORDERING INFORMATION

CP310 - 6 - B - 8S - 080

Seals	Seal kit	Compensator Spring
B = Buna-N	120023	bar [psi]
V = Viton	120024	080 = 5.5 [80]
Housing and ports	Housing P/N	
0 = No Housing	No Housing	
L3B = AL, 3/8 BSP	SDC10-4-L-3B	
L4B = AL, 1/2 BSP	SDC10-4-L-4B	
6S = AL, #6 SAE	CP10-4-6S	
8S = AL, #8 SAE	CP10-4-8S	
Other housings available		

OPERATION

The PC12-PS is a 12-size, load sense, priority, static, pressure compensator. The valve will provide on-demand priority flow to port 2 in the required amount (dependent on the load sense pressure on port 1), allowing the excess flow to go to auxiliary functions through port 3.

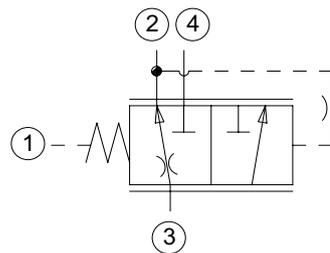
APPLICATION

Common applications include steering circuits that require pre-compensated, priority flow to go to the steering system, and the excess flow will go to an auxiliary function, like a fan motor. To obtain dynamic load sensing (priority type pre-comp) add in orifice between ports 2 and 1 in the manifold. This provides faster response and is commonly used in steering to flush out LS line. See Circuit Example.

SPECIFICATION

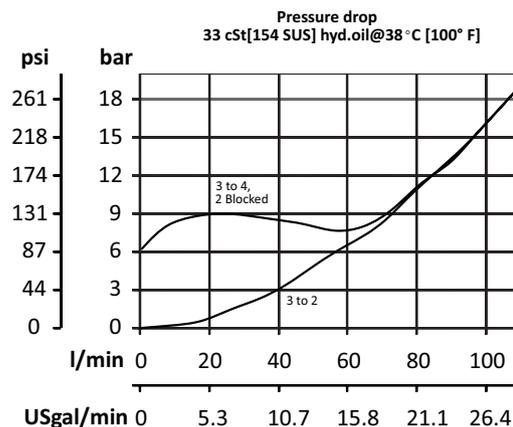
Rated pressure	210 bar [3045 psi]
Rated flow at 7 bar	75 l/min
[100 psi]	[20 US gal/min]
Weight	0.31 kg [0.68 lb]
Cavity	CP12-4

SCHEMATIC



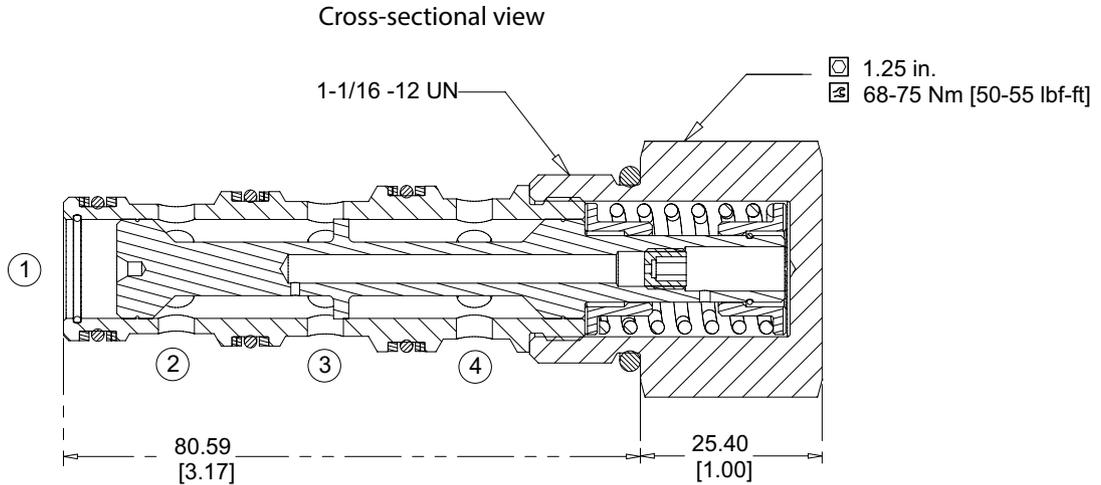
PERFORMANCE CURVE

Theoretical performance

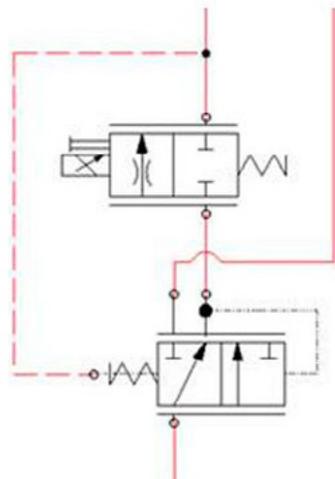


DIMENSION

mm [in]



EXAMPLE CIRCUITS



Pre-Compensated Proportional Flow

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	Housing Part #
00 = No Housing	No Housing
3B = Al, 1/2 BSP	CP12-4-3B
4B = Al, 3/4 BSP	CP12-4-4B
10S = Al, #10 SAE	CP12-4-10S
12S = Al, #12 SAE	CP12-4-12S

Seals	Seal Kit
B = Buna-N	120262
V = Viton	120263

LE - Logic Elements
 PC12-LPS

OPERATION

The CP312-6 is a 16-size, load sense, priority, static, pressure compensator. The valve will provide on-demand priority flow to port 2 in the required amount (dependent on the load sense pressure on port 1), allowing the excess flow to go to auxiliary functions through port 3.

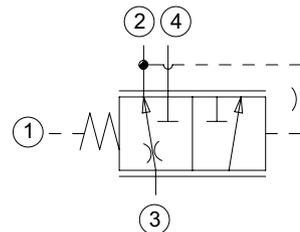
APPLICATION

Common applications include steering circuits that require pre-compensated, priority flow to go to the steering system, and the excess flow will go to an auxiliary function, like a fan motor. To obtain dynamic load sensing (priority type pre-comp) add in orifice between ports 2 and 1 in the manifold. This provides faster response and is commonly used in steering to flush out LS line. See Circuit Example.

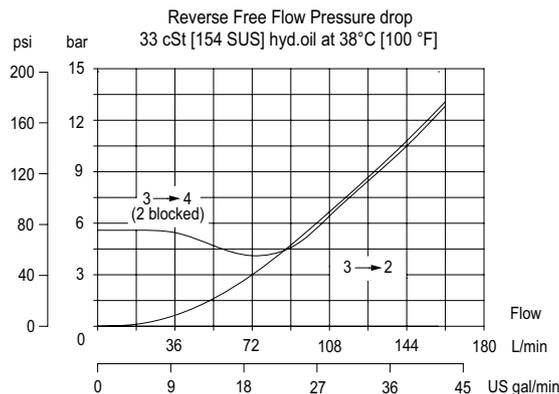
SPECIFICATION

Rated pressure	210 bar [3045 psi]
Rated flow at 7 bar [100 psi]	114 l/min [30 US gal/min]
Weight	0.63 kg [1.39 lb]
Cavity	CP16-4

SCHEMATIC



PERFORMANCE CURVE

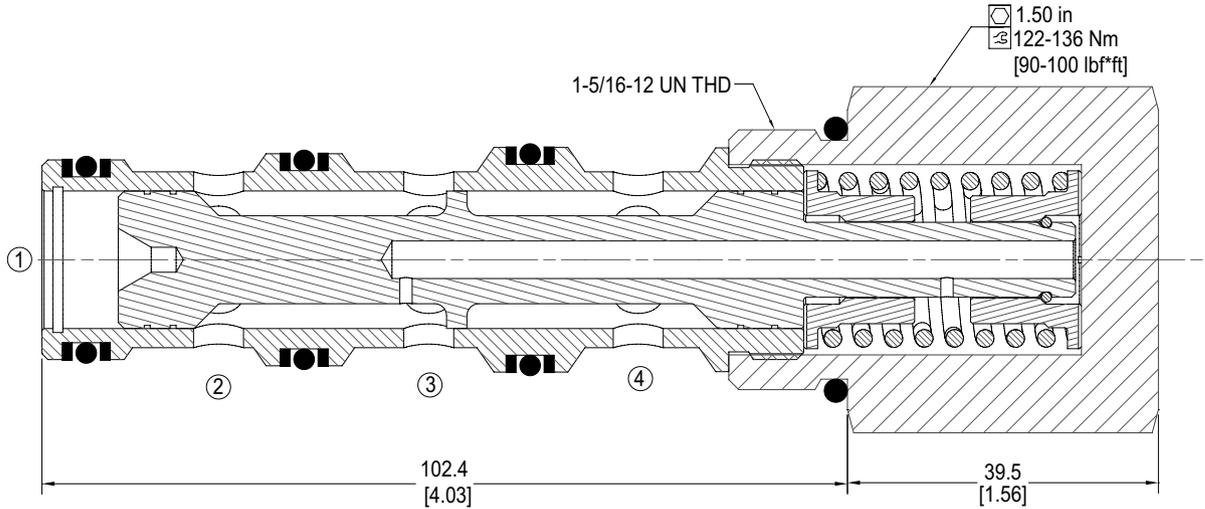


LE - Logic Elements
 PC16-LPS

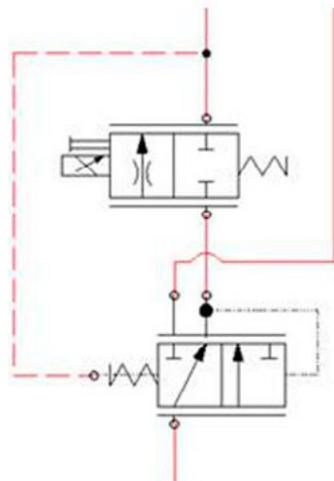
DIMENSION

mm [in]

Cross-sectional view



EXAMPLE CIRCUITS



Pre-Compensated Proportional Flow

ORDERING INFORMATION

PC16-LPS - XX - X - 00

Pressure Compensator, 16 size
 Load Sense, Priority, Static

Compensator Spring

Code	Shift Pressure
5.5	5.5 Bar (80 psi)
10	10 Bar (150 psi)

Seal Option

Code	Seal Material	Seal kit
B	Buna-N	120025
V	Viton	120026

Housings & Ports	Housing P/N
00: Cartridge Only	No Body
6B: 3/4 BSP, AL	CP16-4-6B
8B: 1 BSP, AL	CP16-4-8B
12S: #12 SAE, AL	CP16-4-12S
16S: #16 SAE, AL	CP16-4-16S

Other housings available

LE - Logic Elements
 CP312-6

OPERATION

The CP313-6 is a 20-size, load sense, priority, static, pressure compensator. The valve will provide on-demand priority flow to port 2 in the required amount (dependent on the load sense pressure on port 1), allowing the excess flow to go to auxiliary functions through port 3.

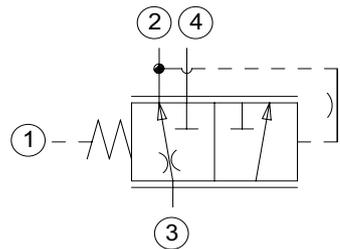
APPLICATION

Common applications include steering circuits that require pre-compensated, priority flow to go to the steering system, and the excess flow will go to an auxiliary function, like a fan motor. To obtain dynamic load sensing (priority type pre-comp) add in orifice between ports 2 and 1 in the manifold. This provides faster response and is commonly used in steering to flush out LS line. See Circuit Example.

SPECIFICATION

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

SCHEMATIC

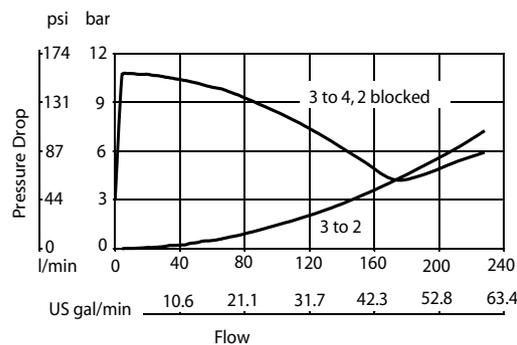


PERFORMANCE CURVE

Theoretical performance

Pressure Drop

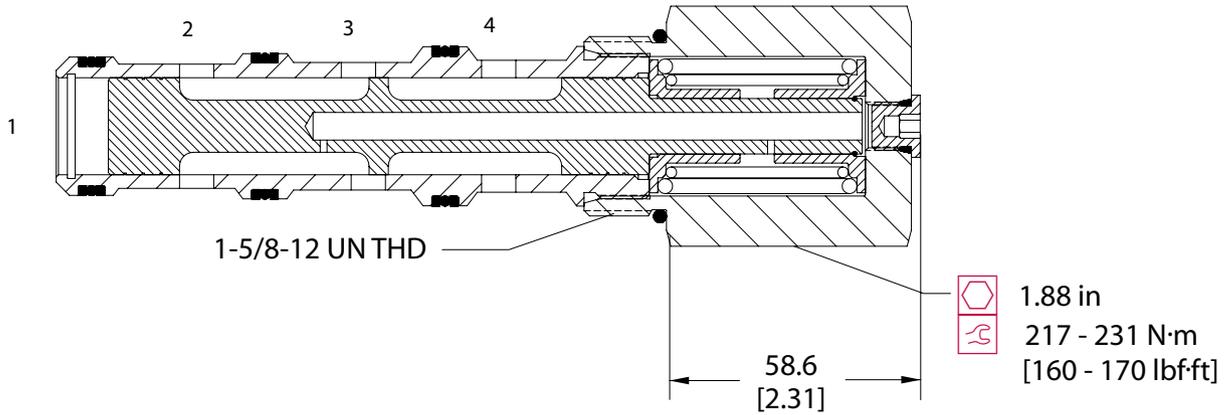
33 cSt [154 SUS] hyd.oil @ 38° C [100° F]



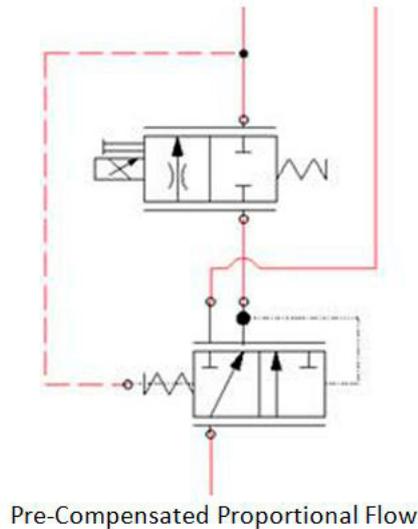
DIMENSION

mm [in]

Cross-sectional view



EXAMPLE CIRCUITS



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] |

