



Cartridge Valves Technical Information

Directional Control Valves

Quick Reference

Manual Push/Pull	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP600-1	SDC10-2	Directional Mechanical, Poppet, Pull to Open	68 l/min [18 US gal/min]	210 bar [3000 psi]	12.8
	CE 06	NCS06/2		20 l/min [5 US gal/min]	210 bar [3000 psi]	12.9
	CP600-2	SDC10-2		50 l/min [13 US gal/min]	210 bar [3000 psi]	12.10

Manual Push/Pull	Model No.	Cavity	Description	Flow*	Pressure	Page
	DMP08-NC	SDC08-2	Directional Mechanical, Poppet, Normally Closed	38 l/min [10 US gal/min]		12.11

Manual Push/Pull	Model No.	Cavity	Description	Flow*	Pressure	Page
	DMP08-NO	SDC08-2	Directional Mechanical, Poppet, Normally Open	38 l/min [10 US gal/min]		12.12

Directional control valves
Quick reference

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



Cartridge Valves Technical Information

Directional Control Valves

Quick Reference

Manual Rotary Valve	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP620-1	SDC10-2	Directional Manual, Rotary, 2-Position, 2-Way	75 l/min [20 US gal/min]	210 bar [3000 psi]	12.13

Manual Rotary Valve	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP630-1	SDC10-3	Directional Manual, Rotary, 2-Position, 3-Way	30.3 l/min [8 US gal/min]	210 bar [3000 psi]	12.14

Manual Rotary Valve	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP640-1	SDC10-4	Directional Manual, Rotary, 2-Position, 4-Way	10 l/min [3 US gal/min]	210 bar [3000 psi]	12.15

Directional control valves
Quick reference

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



Cartridge Valves Technical Information

Directional Control Valves

Quick Reference

Hydraulic Piloted	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP710-8	SDC10-4	Directional Control Valve, 2-Position, 3-Way	40 l/min [11 US gal/min]	210 bar [3000 psi]	12.16
	CP712-11	CP16-4		130 l/min [34 US gal/min]	450 bar [6500 psi]	12.17
	CP712-8	CP16-4		130 l/min [34 US gal/min]	210 bar [3000 psi]	12.18

Hydraulic Piloted	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP710-1	SDC10-3	Directional Control Valve, 2-Position, 2-Way, Atmospheric Vent	40 l/min [11 US gal/min]	210 bar [3000 psi]	12.19
	CP712-1	SDC16-3		130 l/min [34 US gal/min]	210 bar [3000 psi]	12.20
	CP713-1	SDC20-3		265 l/min [70 US gal/min]	210 bar [3000 psi]	12.21

Hydraulic Piloted	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP710-3	SDC10-3	Directional Control Valve, 2-Position, 2-Way, Hydraulic Vent	40 l/min [11 US gal/min]	210 bar [3000 psi]	12.22

Hydraulic Piloted	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP710-2	SDC10-3	Directional Control Valve, 2-Position, 2-Way	40 l/min [11 US gal/min]	210 bar [3000 psi]	12.23
	CP712-2	SDC16-3		130 l/min [34 US gal/min]	210 bar [3000 psi]	12.24
	CP713-2	SDC20-3		265 l/min [70 US gal/min]	210 bar [3000 psi]	12.25

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

Directional control valves
Quick reference



Cartridge Valves Technical Information

Directional Control Valves

Quick Reference

Hydraulic Piloted	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP720-1	SDC10-4	Directional Control Valve, 2-Position, 3-Way,	30 l/min [8 US gal/min]	210 bar [3000 psi]	12.26
	CP722-1	CP16-4	Atmospheric Vent	130 l/min [34 US gal/min]	210 bar [3000 psi]	12.27
	CP723-1	SDC20-4		265 l/min [70 US gal/min]	210 bar [3000 psi]	12.28

Hydraulic Piloted	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP720-2	SDC10-4	3w 2p double pilot operated spool	25 l/min [7 US gal/min]	210 bar [3000 psi]	12.29
	CP722-2	CP16-4		130 l/min [34 US gal/min]	210 bar [3000 psi]	12.30
	CP723-2	SDC20-4		265 l/min [70 US gal/min]	210 bar [3000 psi]	12.31

Hydraulic Piloted	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP720-5	SDC10-4	Directional Control Valve, 2-Position, 3-Way	40 l/min [11 US gal/min]	210 bar [3000 psi]	12.32
	CP722-11	CP16-4		125 l/min [33 US gal/min]	450 bar [6500 psi]	12.33
	CP722-5	CP16-4		130 l/min [34 US gal/min]	210 bar [3000 psi]	12.34
	CP723-5	SDC20-4		265 l/min [70 US gal/min]	210 bar [3000 psi]	12.35

Hydraulic Piloted	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP712-7	CP16-4	Directional Control Valve, Normally Closed/Open, External Pilot, External Drain	220 l/min [58 US gal/min]	210 bar [3000 psi]	12.36

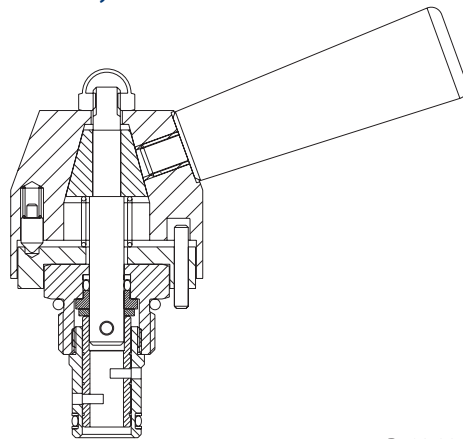
* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

TYPES OF DIRECTIONAL CONTROL VALVES

Directional valves are either manually or hydraulically actuated spools.

Manually-actuated valves are available as 2-way, 3-way, and 4-way valves, and are used either for flow or direction control.

Manually actuated valve



P103 086

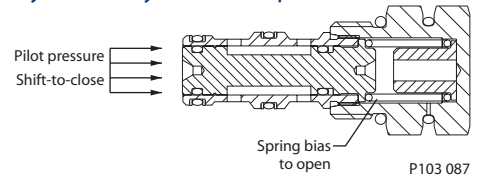
Hydraulically-actuated spool valves are available as 2-way (normally-open or normally-closed), 3-way, and 4-way valves, and are used for direction control. These are all 2-position valves that are spring-biased to a neutral position and use 3-10 bar [40-150 psi] hydraulic pressure to shift the spool.

Directional control valves



F102 007

Hydraulically actuated spool valve



P103 087



Cartridge Valves Technical Information

Directional Control Valves

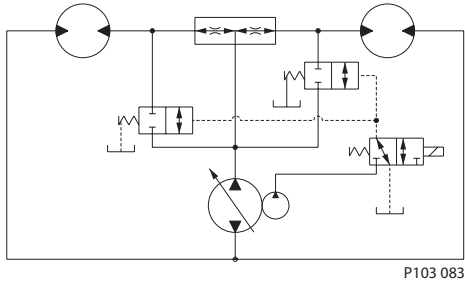
Application Notes

APPLICATIONS

Common applications include:

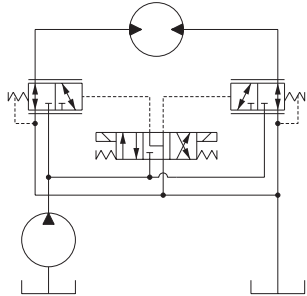
- Directional control valves for high flow with pilot pressure controlled by solenoid valves.
- Bypass valves for flow dividers in vehicle traction circuits.

Pilot-operated bypass valves for traction circuit

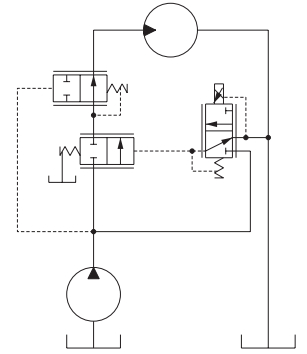


A hydraulically-actuated spool valve (CP712-7) is also available to create an infinitely variable orifice that is controlled by pilot pressure. This valve is typically used in a circuit with a proportional pressure reducing valve (e.g. CP558-24) and a pressure compensator (e.g. CP312-4). Such a circuit creates a pressure-compensated proportional flow control for flows too large for direct-acting proportional valves.

Pilot-operated directional valve circuit



Pilot-operated proportional flow control circuit



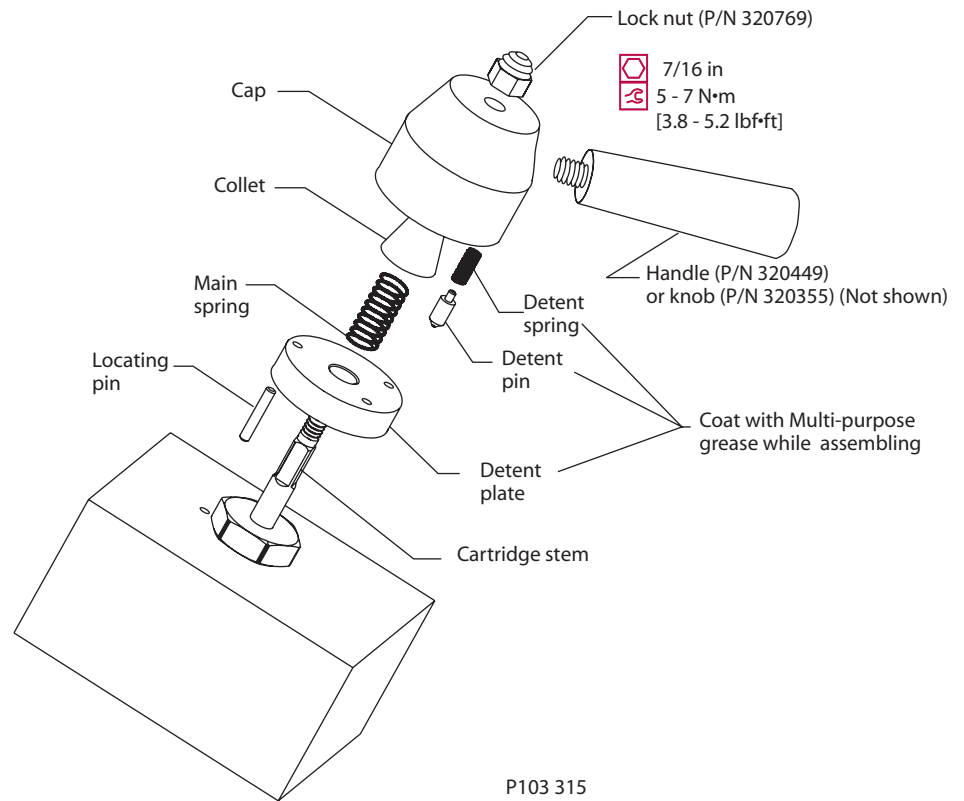
Directional control valves
Quick reference

Cartridge Valves Technical Information
 Directional Control Valves
 Application Notes

INSTALLATION

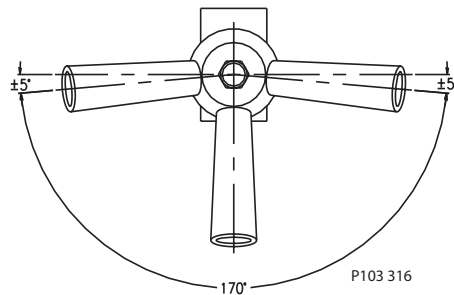
1. Install cartridge.
2. Place locating pin in the hole in the block.
3. Install detent plate over the cartridge stem and locating pin.
4. Place the main spring over the cartridge stem.
5. Install the collet into the cap.
6. Place the detent spring and detent pin into cap and install cap over the assembly as shown.
7. Place the lock nut and torque as shown.
8. Thread handle or knob into cap.

Assembly Drawing

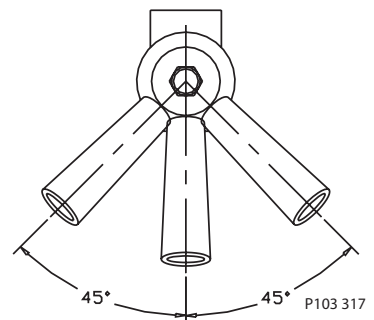


Directional control valves
 Quick reference

Handle orientation for 2-way valve.



Handle orientation for 3-way and 4-way valves.





Cartridge Valves Technical Information

Directional Control Valves

Manual Push Pull

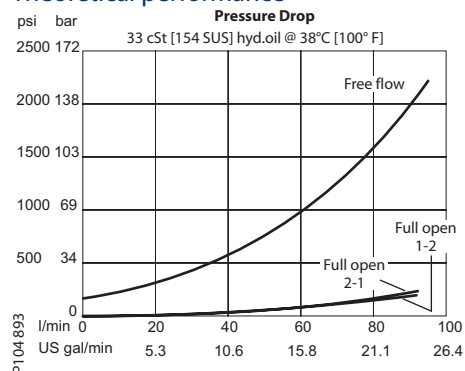
CP600-1

OPERATION

This valve allows free-flow from 1 to 2 and blocks from 2 to 1. It is manually operated with or without knob.

SPECIFICATIONS

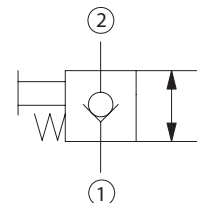
Theoretical performance



Specifications

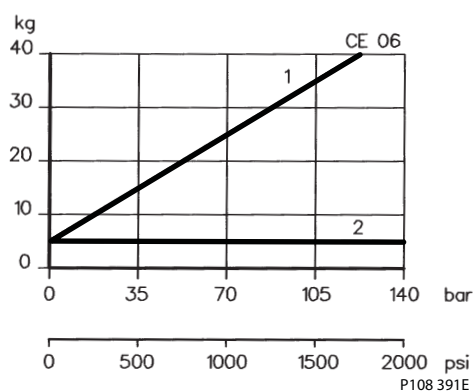
Rated pressure	207 bar [3002 psi]
Rated flow at 7 bar [100 psi]	68 l/min [18 US gal/min]
Leakage	6 drops/min @ at rated pressure
Weight	0.11 kg [0.24 lb]
Cavity	SDC10-2

Schematic



P104 891

Force required to operate override

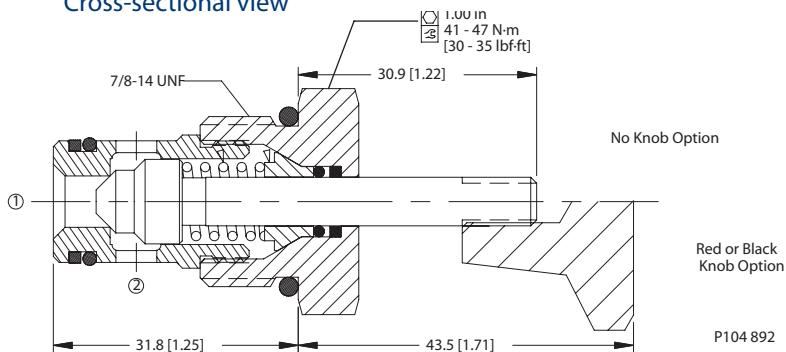


P108 391E

DIMENSIONS

mm [in]

Cross-sectional view



P104 892

ORDERING INFORMATION

CP600-1-B-6S-00-K

Seals	Seal kit	Knob Option
B = BUNA-N	120015	28 = 1/4-28 UNF-2A (NO KNOB)
V = VITON	120016	20 = 1/4-20 UNF-2A (NO KNOB)
		K = BLACK KNOB
		R = RED KNOB
Body & Ports	Body P/N	Force Required to Operate Override
0 = Cartridge only	No Body	0 = 0 N [0 lbf]
6S = Aluminum, #6 SAE	CP10-2-6S	10 = 44 N [10 lbf]
8S = Aluminum, #8 SAE	CP10-2-8S	27 = 120 N [27 lbf]
3B = Aluminum, 3/8 BSPP	SDC10-2-DG-3B	
4B = Aluminum, 1/2 BSPP	SDC10-2-LG2-4B	

P104 894



Cartridge Valves Technical Information

Directional Control Valves

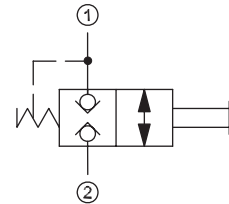
Manual Push Pull

CE 06

OPERATION

This is a normally-closed, manually-operated, bi-directional poppet valve.

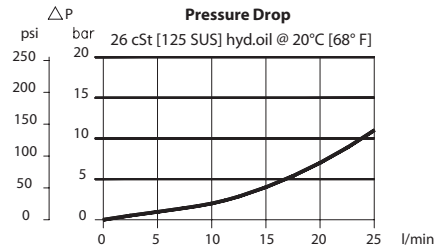
Schematic



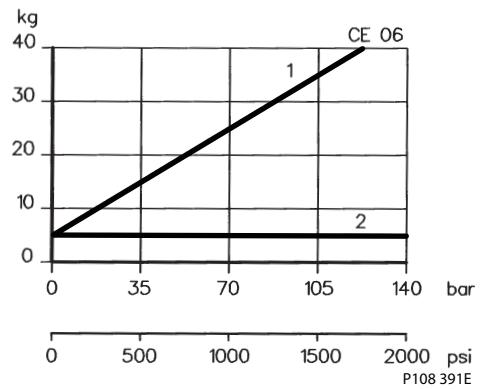
P104 551E

SPECIFICATIONS

Theoretical performance



Force required to operate override



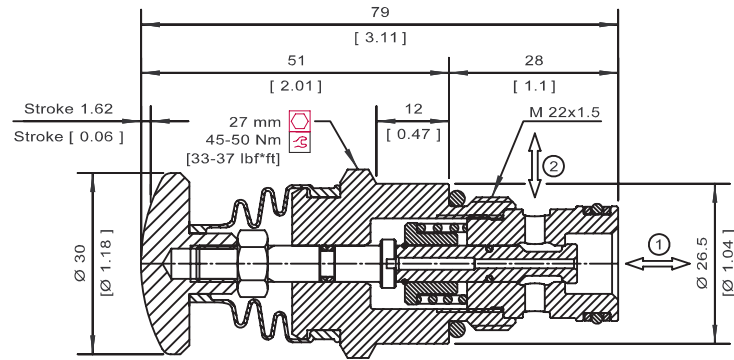
Specifications

Rated pressure	315 bar [4500 psi]
Rated flow at 7 bar [100 psi]	20 l/min [5 US gal/min]
Weight	0.20 kg [0.44 lb]
Cavity	NCS06/2

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CE 06 - 00 - V

Seals
 V = Viton 230000380
 Omit = Buna-N 230000060

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

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

P103 837E

Directional control valves
CE 06



Cartridge Valves Technical Information

Directional Control Valves

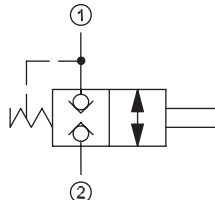
Manual Rotary Valve

CP600-2

OPERATION

This valve is a normally closed, manually operated, bi-directional poppet valve.

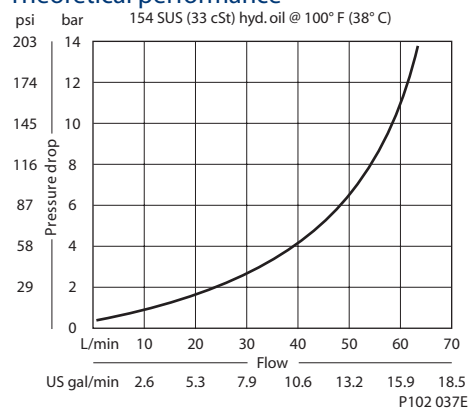
Schematic



P104 551E

SPECIFICATIONS

Theoretical performance



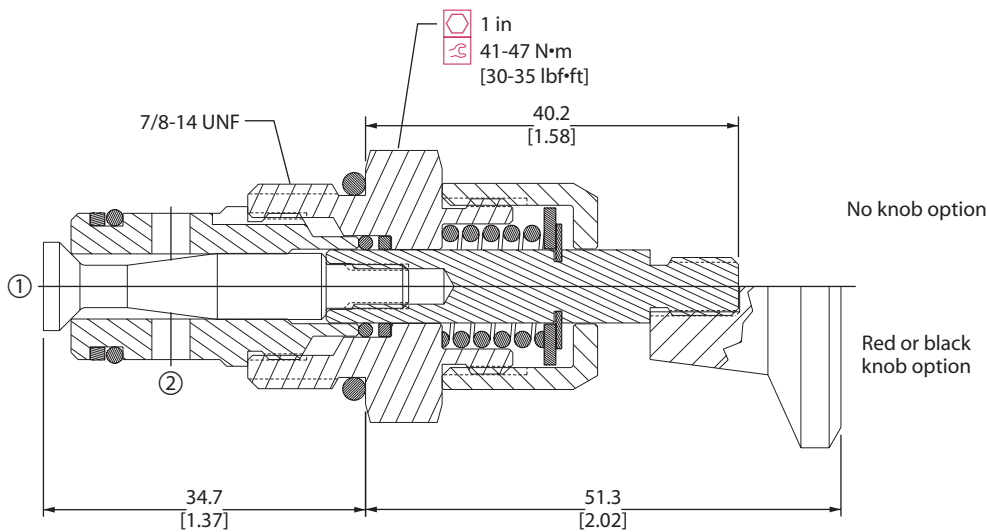
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	50 l/min [13 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.11 kg [0.25 lb]
Cavity	SDC10-2

DIMENSIONS

mm [in]

Cross-sectional view



P102 764E

ORDERING INFORMATION

CP600 - 2 - B - 8S - 10 - B

- Seals**
 - B = Buna-N
 - V = Viton
- Seal kit**
 - 120015
 - 120016
- Housing and ports**
 - 0 = No Housing
 - DG3B = AL, 3/8 BSP
 - DG4B = AL, 1/2 BSP
 - 6S = AL, #6 SAE
 - 8S = AL, #8 SAE
 - Other housings available
- Housing P/N**
 - No Housing
 - SDC10-2-DG-3B
 - SDC10-2-DG-4B
 - CP10-2-6S
 - CP10-2-8S
- Knob option**
 - 0 = No knob (1/4-28 UNF threads)
 - B = Black knob
 - R = Red knob
- Spring load**
 - 10 = 44 N [10 lbf]
 - 15 = 67 N [15 lbf]

P102 765E



Cartridge Valves Technical Information

Directional Control Valves

Manual Rotary Valve

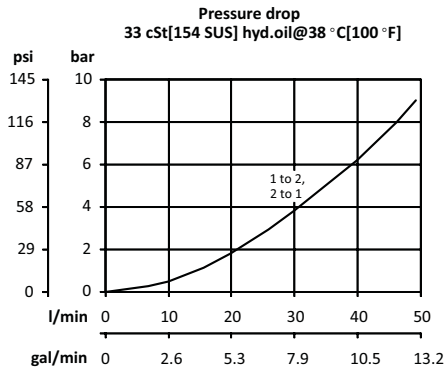
DMP08-NC

OPERATION

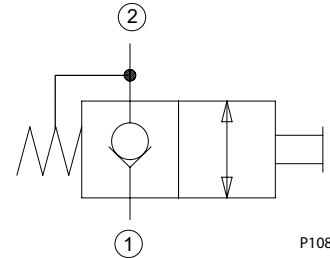
This valve is a normally closed, manually operated, poppet type valve with free reverse flow..

SPECIFICATIONS

Theoretical performance



Schematic



P108 381E

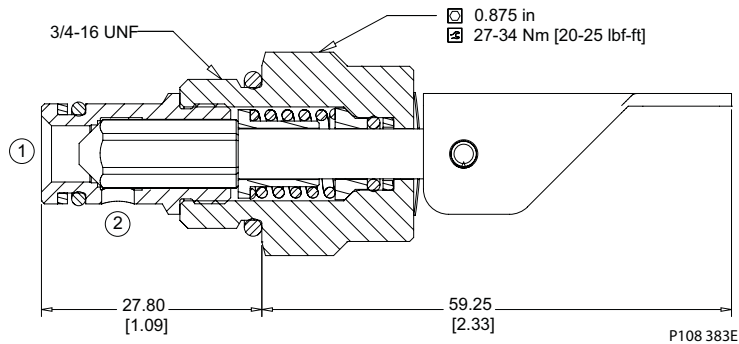
Specifications

Rated pressure	207 bar [3000 psi]
Rated flow at 7 bar [100 psi]	48 l/min [12.7 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.12 kg [0.27 lb]
Cavity	SDC08-2

DIMENSIONS

mm [in]

Cross-sectional view



Directional control valves
DMP08-NC

ORDERING INFORMATION

DMP08-NC-18-LD-B-00

Shift Force
18 = 18 N [4 lbf]

Handle Option
LD = Detented Lever

Housing and ports Housing Part #
00 = No Housing No Housing
DG-2B = Al, 1/4 BSP SDC08-2-DG-2B
DG-3B = Al, 3/8 BSP SDC08-2-DG-3B
4S = Al, #4 SAE CP08-2-4S
6S = Al, #6 SAE CP08-2-6S

Seals Seal Kit
B = Buna-N 120221
V = Viton 120222

P108 382E



Cartridge Valves Technical Information

Directional Control Valves

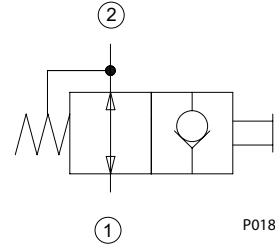
Manual Rotary Valve

DMP08-NO

OPERATION

This valve is a normally open, manually operated, poppet type valve with free reverse flow..

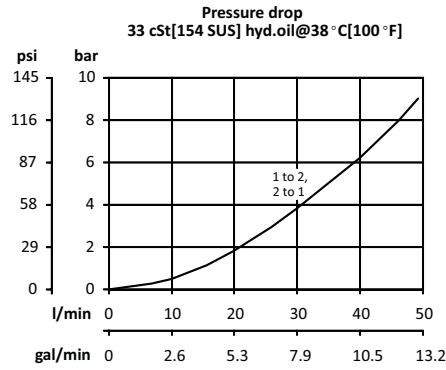
Schematic



P018 384E

SPECIFICATIONS

Theoretical performance



P108 385E

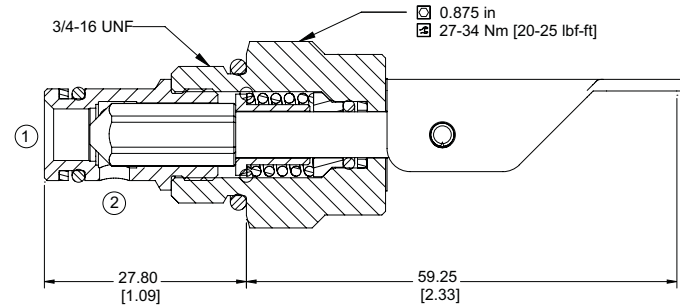
Specifications

Rated pressure	207 bar [3000 psi]
Rated flow at 7 bar [100 psi]	48 l/min [12.7 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.12 kg [0.27 lb]
Cavity	SDC08-2

DIMENSIONS

mm [in]

Cross-sectional view



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ORDERING INFORMATION

DMP08-NO-18-LD-B-00

Shift Force 18 = 18 N [4 lbf]	Handle Option LD = Detented Lever	- Housing and ports 00 = No Housing DG-2B = Al, 1/4 BSP DG-3B = Al, 3/8 BSP 4S = Al, #4 SAE 6S = Al, #6 SAE	Housing Part # No Housing SDC08-2-DG-2B SDC08-2-DG-3B CP08-2-4S CP08-2-6S
		Seals B = Buna-N V = Viton	Seal Kit 120221 120222

P108 387E

Directional control valves
DMP08-NO



Cartridge Valves Technical Information

Directional Control Valves

Manual Rotary Valve

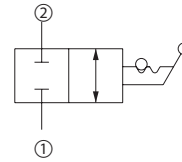
CP620-1

OPERATION

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

Refer to application notes for installation details.

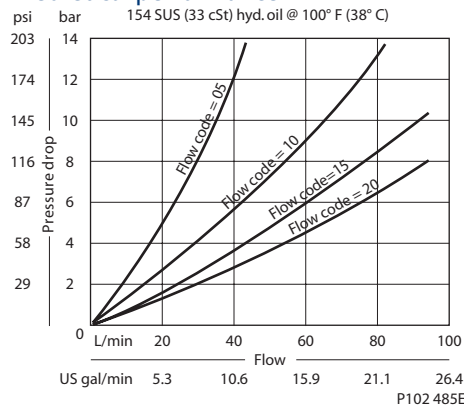
Schematic



P102 503E

SPECIFICATIONS

Theoretical performance



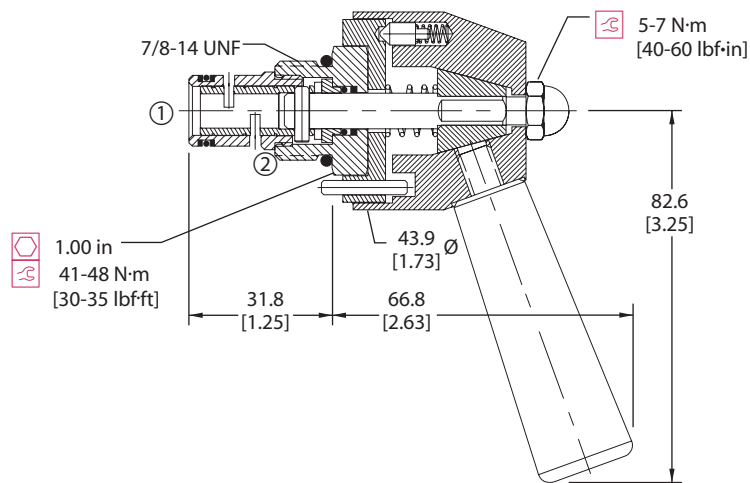
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	75 l/min [20 US gal/min]
Leakage	82 cm ³ /min [5 in ³ /min] @ Rated pressure
Weight	0.31 kg [0.69 lb]
Cavity	SDC10-2

DIMENSIONS

mm [in]

Cross-sectional view



P102 473E

ORDERING INFORMATION

CP620 - 1 - B - 8S - 20 - 2 - DR

Seals

- B - Buna-N
- V - Viton

Housing and ports

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

Seal kit

- 120073
- 120074

Housing P/N

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

Flow

- 05 = 19 l/min [5 US gpm]
- 10 = 38 l/min [10 US gpm]
- 15 = 57 l/min [15 US gpm]
- 20 = 77 l/min [20 US gpm]

Rotation to close

- R - Clockwise
- L - Counterclockwise

Detent

- D = Detent with handle
- K = Knob (not shown) knob is not detented

Position

- 2 - 2 Position detent
- 3 - 3 Position detent
- 10 - 10 Position detent

P102 893E



Cartridge Valves Technical Information

Directional Control Valves

Manual Rotary Valve

CP630-1

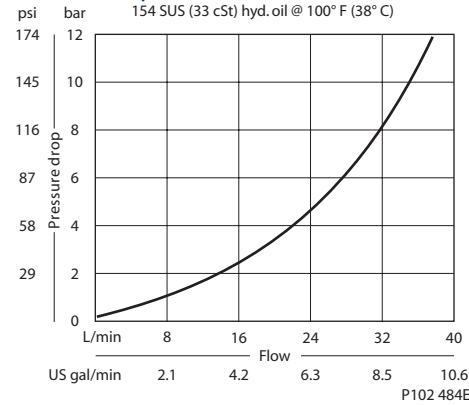
OPERATION

This valve is a 2 position 3 way manual directional control.

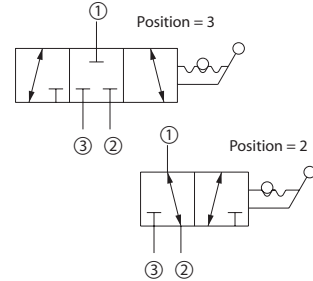
Refer to application notes for installation details.

SPECIFICATIONS

Theoretical performance



Schematic



P102 502E

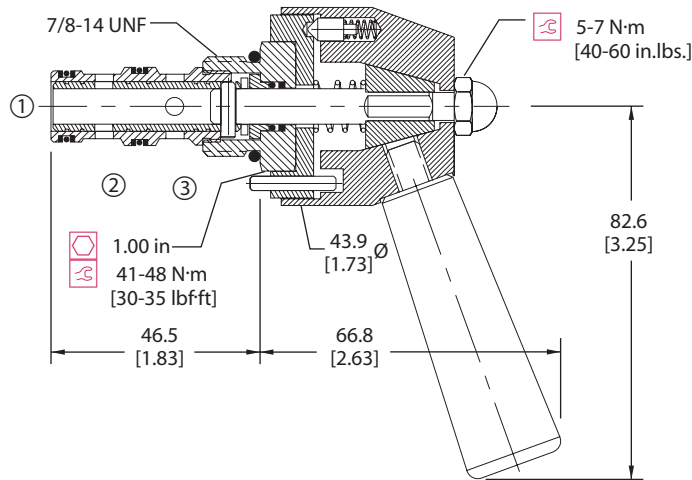
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	30 l/min [8 US gal/min]
Leakage	82 cm ³ /min [5 in ³ /min] @ Rated pressure
Weight	0.32 kg [0.71 lb]
Cavity	SDC10-3

DIMENSIONS

mm [in]

Cross-sectional view



P102 472E

ORDERING INFORMATION

CP630 - 1 - B - 8S - 3 - D

Seals

B = Buna-N
V = Viton

Seal kit
120009
120010

Housing and ports

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

Housing P/N

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

Detent

D = Detent with handle
K = Knob (not shown)
knob is not detented

Position

2 = 2 Position detent
3 = 3 Position detent

P102 957E

Directional control valves
CP630-1



Cartridge Valves Technical Information

Directional Control Valves

Manual Rotary Valve

CP640-1

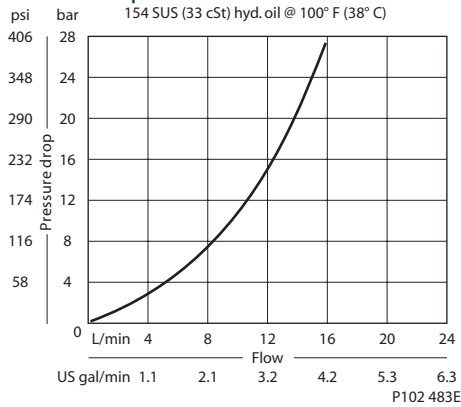
OPERATION

This valve is a 3 position 4 way manual directional control.

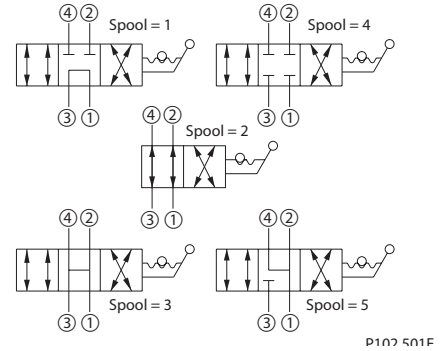
Refer to application notes for installation details.

SPECIFICATIONS

Theoretical performance



Schematic



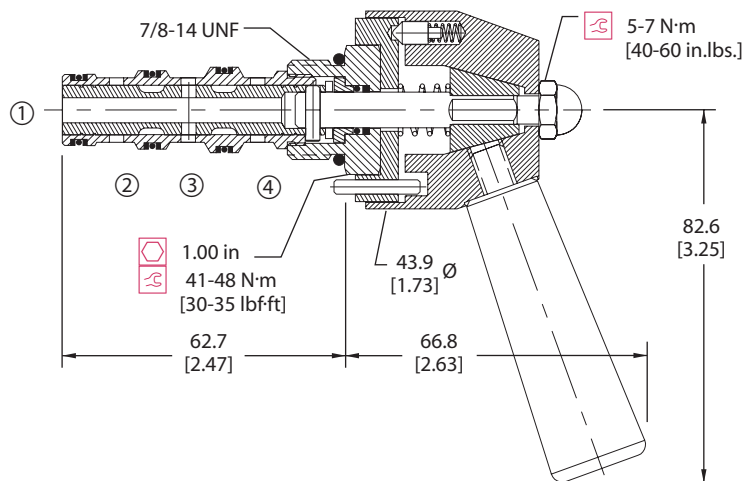
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	10 l/min [3 US gal/min]
Leakage	82 cm ³ /min [5 in ³ /min] @ Rated pressure
Weight	0.35 kg [0.77 lb]
Cavity	SDC10-4

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP640 - 1 - B - 8S - 3 - 3 - D

Seals

B = Buna-N
V = Viton

Housing and ports

0 = No Housing
LE3B = AL, 3/8 BSP
LE4B = 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
SDC10-4-6S
SDC10-4-8S

Detent

D = Detent with handle
K = Knob (not shown)
knob is not detented

Position

2 = 2 Position detent
3 = 3 Position detent

Spool

1 = Tandem
2 = 2 position
3 = All open
4 = All closed
5 = Motor

P102 002E

Directional control valves
CP640-1



Cartridge Valves Technical Information

Directional Control Valves

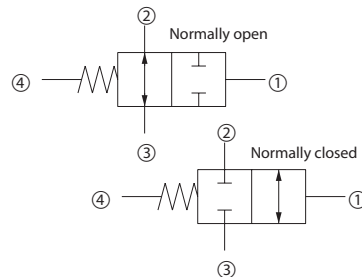
Hydraulic Piloted

CP710-8

OPERATION

This valve is a 2-way double hydraulically piloted spool.

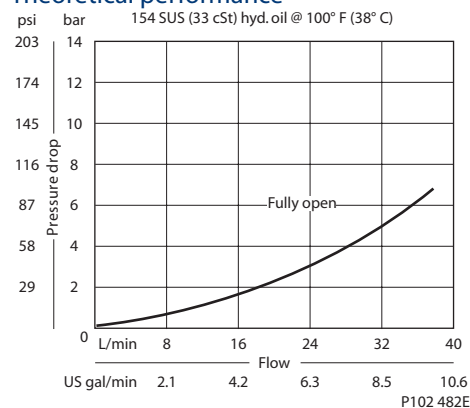
Schematic



P102 959

SPECIFICATIONS

Theoretical performance



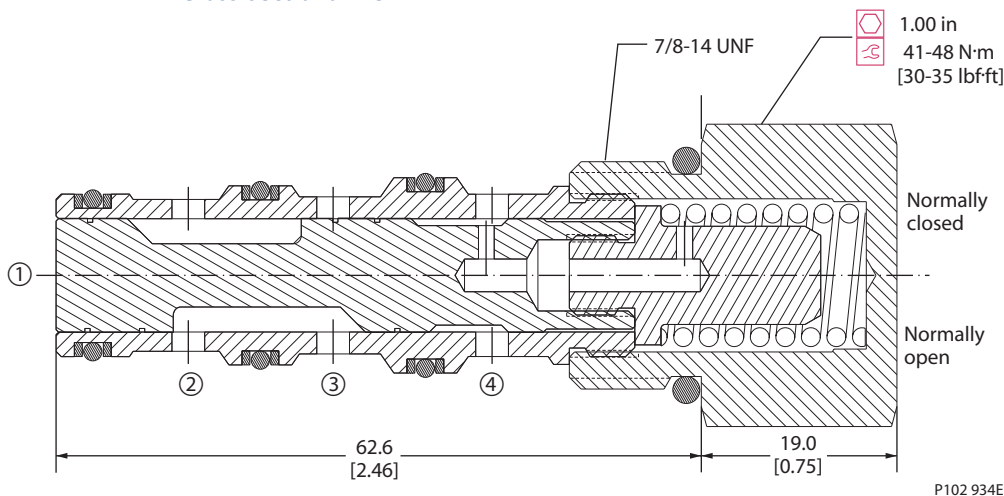
Specifications

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

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP710 - 8 - B - 16S - C - 080

Seals
 B = Buna-N
 V = Viton

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

Shift pressure
 040 = 2.8 bar [40 psi]
 080 = 5.5 bar [80 psi]
 150 = 10.3 bar [150 psi]

Configuration
 O = Normally open
 C = Normally closed

P102 935E



Cartridge Valves Technical Information

Directional Control Valves

Hydraulic Piloted

CP712-11

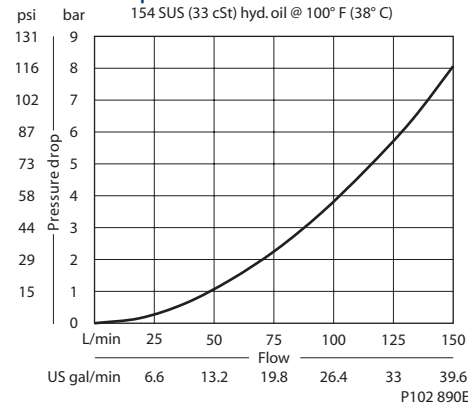
OPERATION

This valve is a 2-way double hydraulically piloted spool.

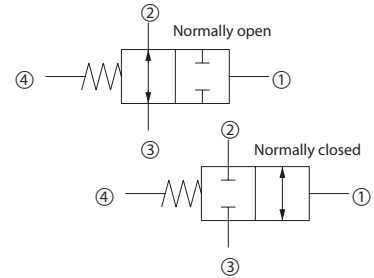
Note: Maximum pressure at port 4 is 207 bar [3000 psi].

SPECIFICATIONS

Theoretical performance



Schematic



P102 959

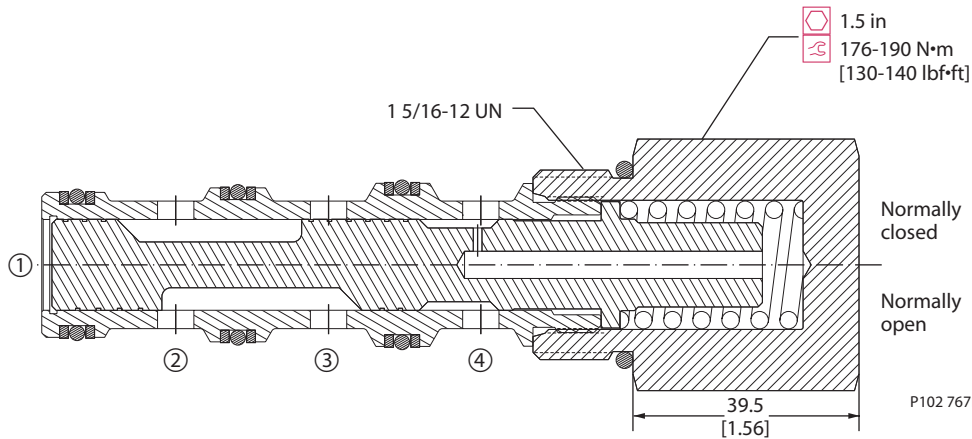
Specifications

Rated pressure	450 bar [6500 psi]
Rated flow at 7 bar [100 psi]	130 l/min [34 US gal/min]
Leakage	328 cm ³ /min [20 in ³ /min] @ 210 bar [3000 psi]
Weight	0.61 kg [1.34 lb]
Cavity	CP16-4

DIMENSIONS

mm [in]

Cross-sectional view



P102 767E

ORDERING INFORMATION

CP712-11-U-0-C-040

Shift pressure
040 = 2.8 bar [40 psi]
080 = 5.5 bar [80 psi]

Configuration
O = Normally open
C = Normally closed

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

Housing P/N
No Housing
CP16-4-6B
CP16-4-8B
CP16-4-12S
CP16-4-16S

Seals
U = Urethane Seal kit 120677

Directional control valves CP712-11



Cartridge Valves Technical Information

Directional Control Valves

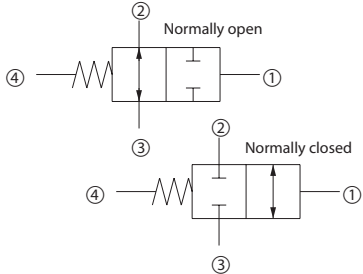
Hydraulic Piloted

CP712-8

OPERATION

This valve is a 2-way double hydraulically piloted spool.

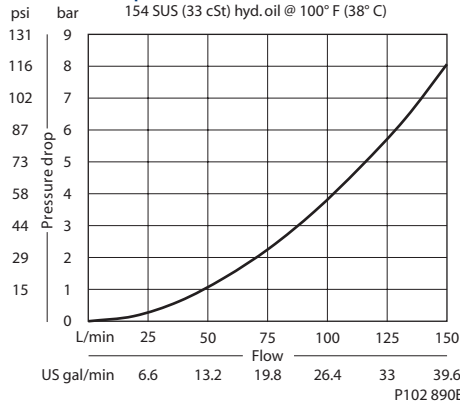
Schematic



P102 959

SPECIFICATIONS

Theoretical performance



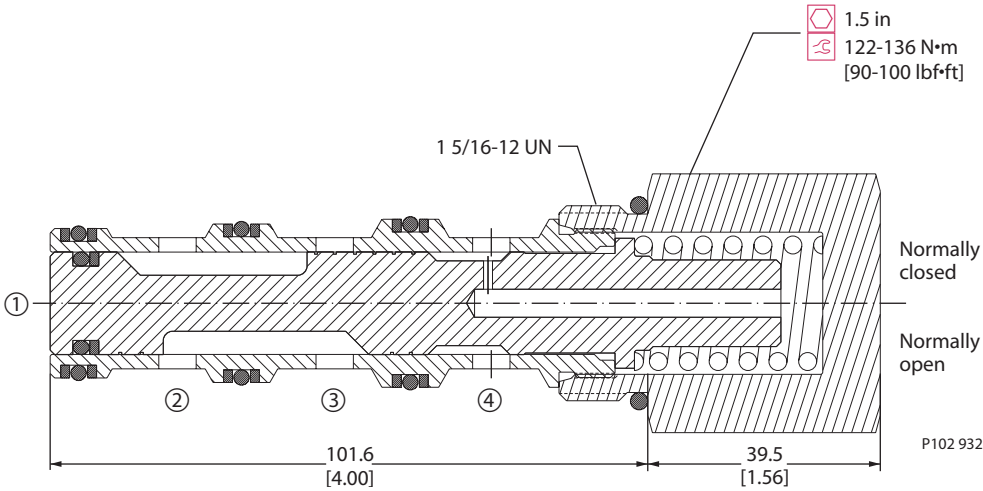
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	130 l/min [34 US gal/min]
Weight	0.61 kg [1.34 lb]
Cavity	CP16-4

DIMENSIONS

mm [in]

Cross-sectional view



P102 932

ORDERING INFORMATION

CP712 - 8 - B - 16S - C - 080 - S1

<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</p> <p>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>Spool seal</p> <p>S3 = No seal S4 = Seal included</p> <p>Shift pressure</p> <p>040 = 2.8 bar [40 psi] 080 = 5.5 bar [80 psi] 150 = 10.3 bar [150 psi] shift pressure assumes no seals</p> <p>Configuration</p> <p>O = Normally open C = Normally closed</p>
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Directional control valves
CP712-8



Cartridge Valves Technical Information

Directional Control Valves

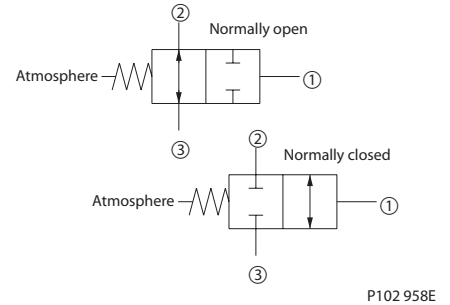
Hydraulic Piloted

CP710-1

OPERATION

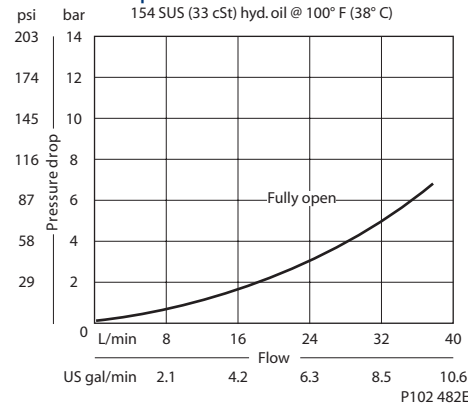
This valve is a hydraulically operated spool with atmospheric vent.

Schematic



SPECIFICATIONS

Theoretical performance



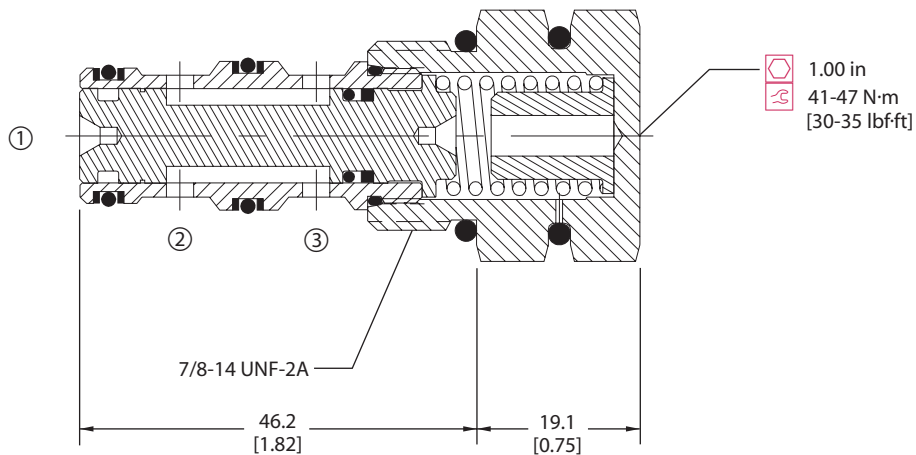
Specifications

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

DIMENSIONS

mm [in]

Cross-sectional view



P102 470E

ORDERING INFORMATION

CP710 - 1 - B - 8S - C - 150 - S1

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

- 120009
- 120010

Housing P/N

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

Spool seals

- S1 = Seal at top of spool
- S2 = Seals at top and bottom of spool

Shift pressure

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

Configuration

- O = Normally open
- C = Normally closed

P102 004E



Cartridge Valves Technical Information

Directional Control Valves

Hydraulic Piloted

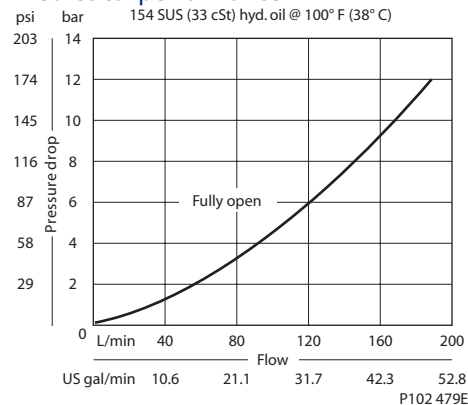
CP712-1

OPERATION

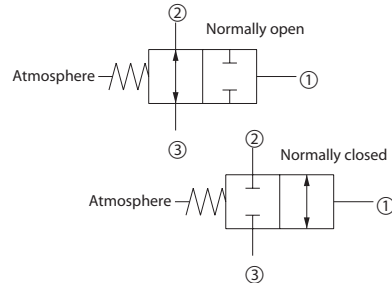
This valve is a hydraulically operated spool with atmospheric vent.

SPECIFICATIONS

Theoretical performance



Schematic



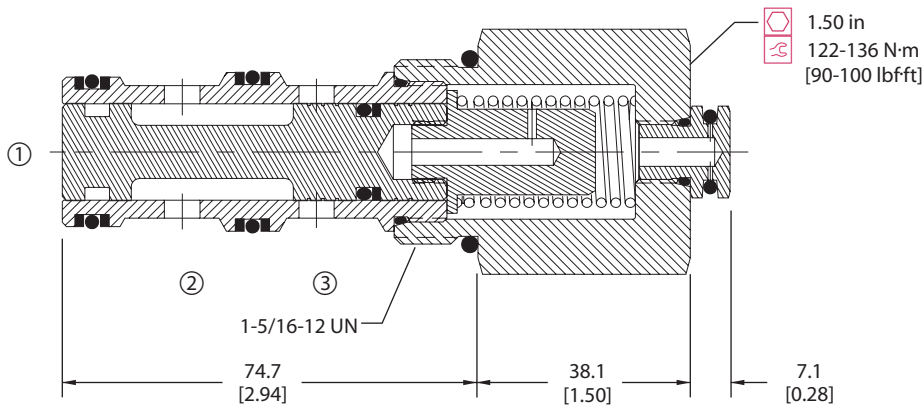
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	130 l/min [34 US gal/min]
Weight	0.57 kg [1.25 lb]
Cavity	SDC16-3

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP712 - 1 - B - 16S - C - 080 - S1

Seals
B = Buna-N
V = Viton
Seal kit 120202
Seal kit 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
No Housing SDC16-3-SE-8B
CP16-3-12S
CP16-3-16S

Spool seals
S1 = Seal at top of spool
S2 = Seals at top and bottom of spool

Shift pressure
040 = 2.8 bar [40] psi
080 = 5.5 bar [80] psi
150 = 10.3 bar [150] psi

Configuration
O = Normally open
C = Normally closed

CP712-1
Directional control valves



Cartridge Valves Technical Information

Directional Control Valves

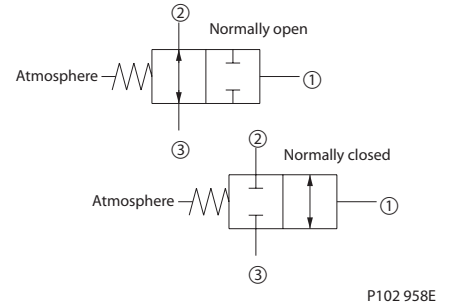
Hydraulic Piloted

CP713-1

OPERATION

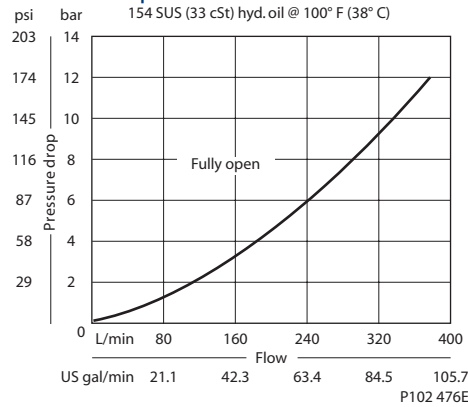
This valve is a hydraulically operated spool with atmospheric vent.

Schematic



SPECIFICATIONS

Theoretical performance



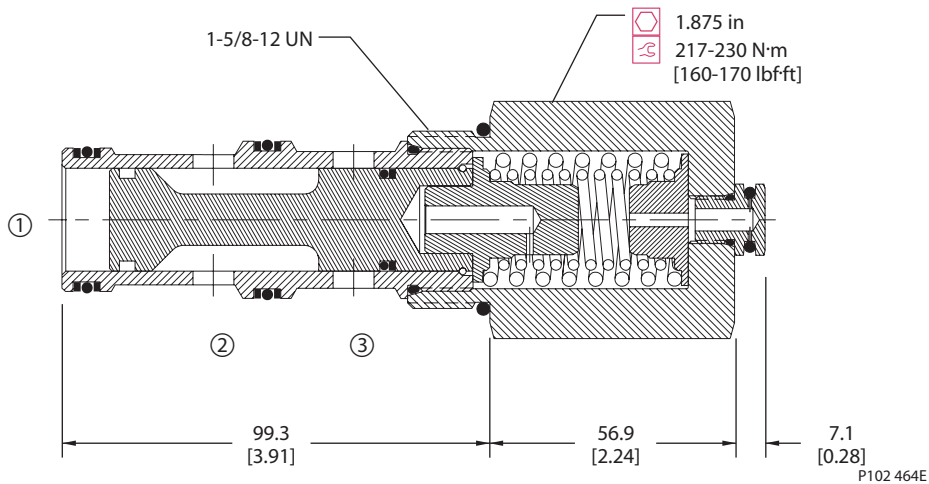
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	265 l/min [70 US gal/min]
Weight	1.26 kg [2.78 lb]
Cavity	SDC20-3

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP713 - 1 - B - 20S - C - 150 - S1

- Seals**
 - B = Buna-N
 - V = Viton
 - Seal kit 120200
 - Seal kit 120201
- 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
 - CP20-3-8B
 - CP20-3-10B
 - CP20-3-16S
 - CP20-3-20S
- Configuration**
 - O = Normally open
 - C = Normally closed
- Spool seals**
 - S1 = Seal at top of spool
 - S2 = Seals at both ends of spool
- Shift pressure**

bar	[psi]
050	3.5 [50]
080	5.5 [80]
100	6.9 [100]
130	9.0 [130]
150	10.3 [150]

Directional control valves CP713-1



Cartridge Valves Technical Information

Directional Control Valves

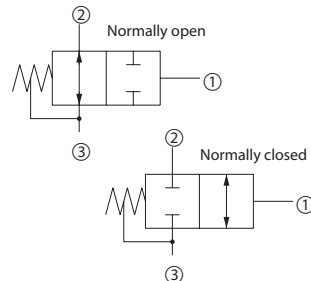
Hydraulic Piloted

CP710-3

OPERATION

This valve is a 2-way hydraulically piloted spool.

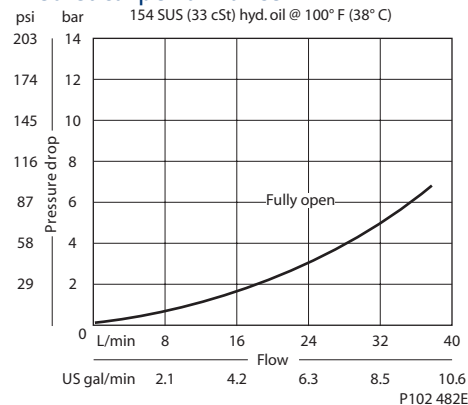
Schematic



P102 756

SPECIFICATIONS

Theoretical performance



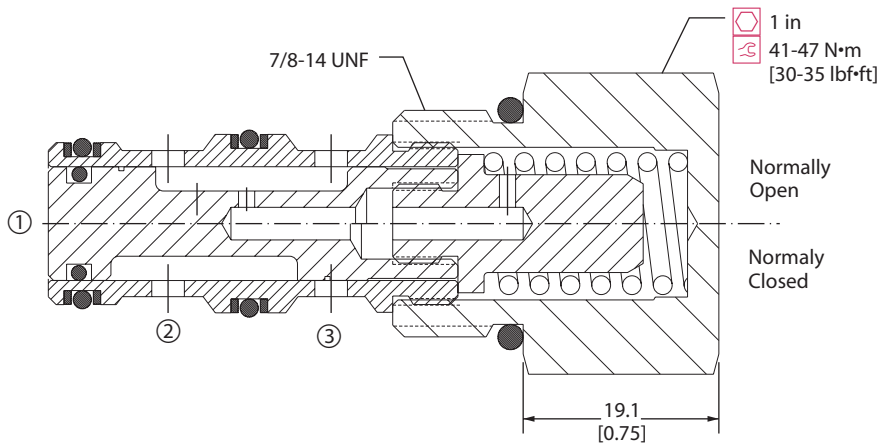
Specifications

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

DIMENSIONS

mm [in]

Cross-sectional view



P102 755

ORDERING INFORMATION

CP710 - 3 - B - 16S - C - 150 - S1

Seals

B = Buna-N
V = Viton

Seal kit
120009
120010

Housing and ports

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

Housing P/N

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

Spool seal

S3 = No seal
S4 = With seal

Shift pressure

bar [psi]
150 = 10.3 [150]
shift pressure assumes no seal

Configuration

O = Normally open
C = Normally closed

P102 754E



Cartridge Valves Technical Information

Directional Control Valves

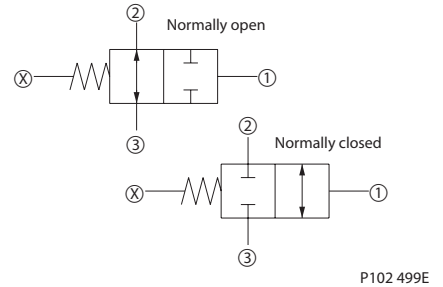
Hydraulic Piloted

CP710-2

OPERATION

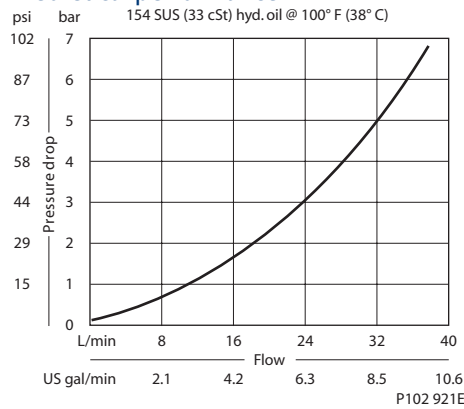
This valve is a 2-way double hydraulically piloted spool.

Schematic



SPECIFICATIONS

Theoretical performance



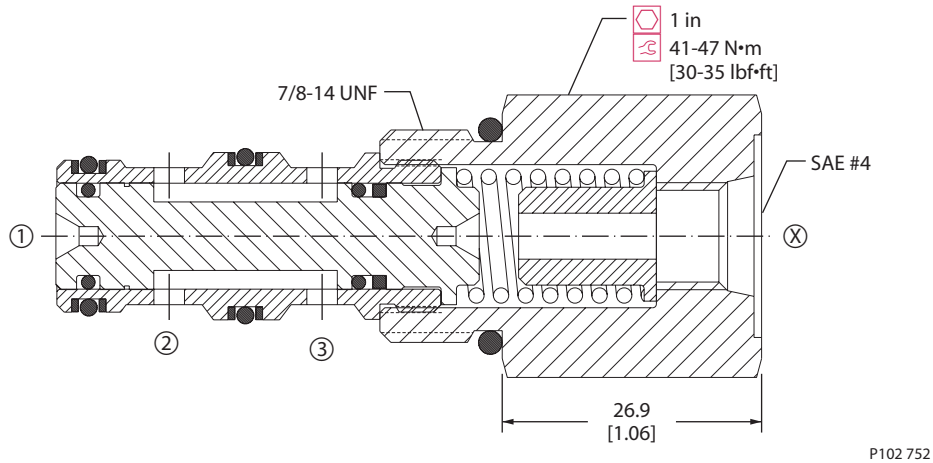
Specifications

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

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP710 - 2 - B - 16S - C - 080 - S1

- Seals**
 - B = Buna-N
 - V = Viton
 - Seal kit 120009
 - Seal kit 120010
- Housing and ports**
 - 0 = No Housing
 - SE3B = AL, 3/8 BSP
 - SE4B = AL, 1/2 BSP
 - 6S = AL, #6 SAE
 - 8S = AL, #8 SAE
 - Other housings available
- Housing P/N**
 - No Housing
 - SDC10-3-SE-3B
 - SDC10-3-SE-4B
 - CP10-3-6S
 - CP10-3-8S
- Configuration**
 - O = Normally open
 - C = Normally closed
- Spool seals**
 - S1 = Seal at top of spool
 - S2 = Seal at top and bottom of spool
 - S3 = No seals
 - S4 = Seal at bottom of spool
- Shift pressure**

	bar	[psi]
040	= 2.8	[40]
050	= 3.4	[50]
080	= 5.5	[80]
125	= 8.6	[125]
150	= 10.3	[150]

shift pressure assumes no seals

Directional control valves CP710-2

P102 753E



Cartridge Valves Technical Information

Directional Control Valves

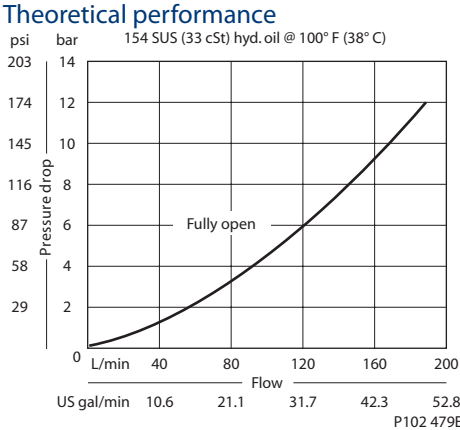
Hydraulic Piloted

CP712-2

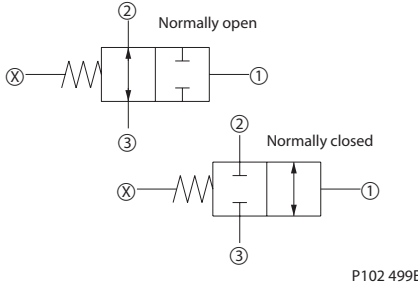
OPERATION

This valve is a 2-way double hydraulically piloted spool.

SPECIFICATIONS



Schematic



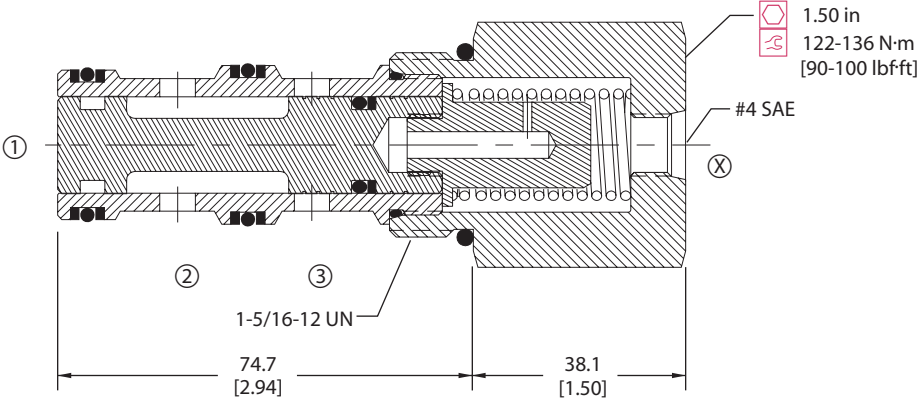
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	130 l/min [34 US gal/min]
Weight	0.57 kg [1.25 lb]
Cavity	SDC16-3

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP712 - 2 - B - 16S - C - 080 - S1

Seals
B = Buna-N
V = Viton
Seal kit 120202 120203

Housing and ports
0 = No Housing
SE6B = AL, 3/4 BSP
SE8B = AL, 1BSP
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

Spool seals
S1 = Seal at top of spool
S2 = Seals at top and bottom of spool
S3 = No seals
S4 = Seal at bottom of spool

Shift pressure
bar [psi]
040 = 2.8 [40]
080 = 5.5 [80]
150 = 10.3 [150]
shift pressure assumes no seals

Configuration
O = Normally open
C = Normally closed

CP712-2 Directional control valves



Cartridge Valves Technical Information

Directional Control Valves

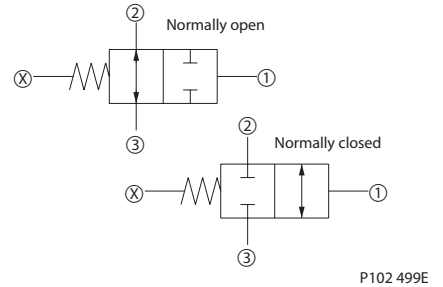
Hydraulic Piloted

CP713-2

OPERATION

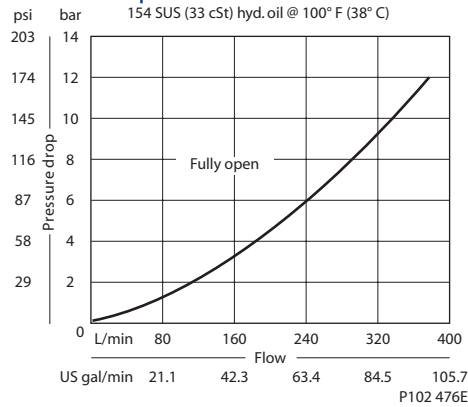
This valve is a 2-way double hydraulically piloted spool.

Schematic



SPECIFICATIONS

Theoretical performance



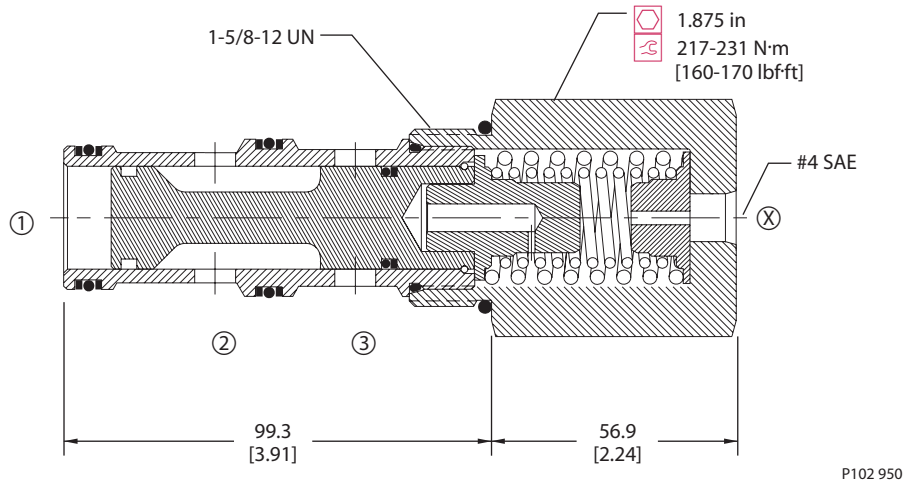
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	265 l/min [70 US gal/min]
Weight	1.26 kg [2.78 lb]
Cavity	SDC20-3

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP713 - 2 - B - 20S - C - 150 - S1

Seals		Seal kit		Spool seals	
B = Buna-N		120200		S1 = Seal at top of spool	
V = Viton		120201		S2 = Seals at top and bottom of spool	
Housing and ports		Housing P/N		S3 = No seals	
0 = No Housing		No Housing		S4 = Seal at bottom of spool	
8B = AL, 1 BSP		CP20-3-8B		Shift pressure	
10B = AL, 1-1/4 BSP		CP20-3-10B		050 = 3.5 [50]	
16S = AL, #16 SAE		CP20-3-16S		080 = 5.5 [80]	
20S = AL, #20 SAE		CP20-3-20S		100 = 6.9 [100]	
Other housings available				130 = 9.0 [130]	
Configuration				150 = 10.3 [150]	
0 = Normally open				shift pressure assumes no seals	
C = Normally closed					

Directional control valves CP713-2



Cartridge Valves Technical Information

Directional Control Valves

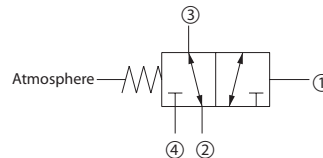
Hydraulic Piloted

CP720-1

OPERATION

This valve is a 3-way hydraulically piloted spool with atmospheric vent.

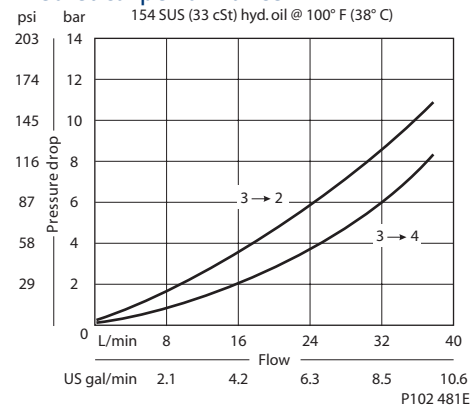
Schematic



P102 498E

SPECIFICATIONS

Theoretical performance



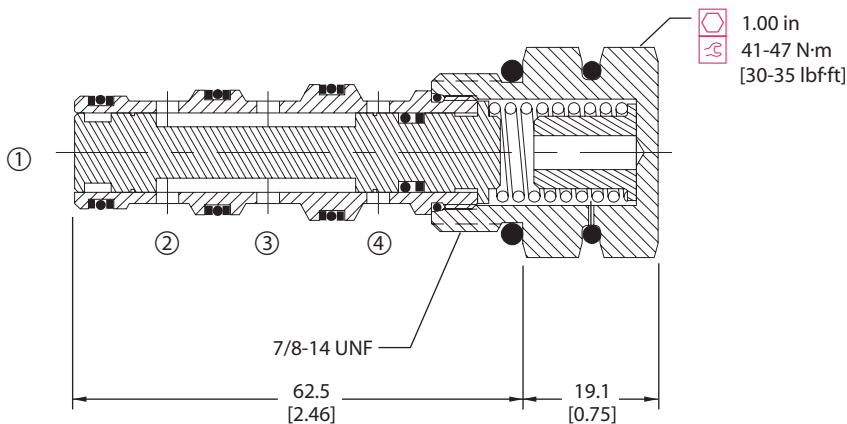
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	30 l/min [8 US gal/min]
Weight	0.15 kg [0.33 lb]
Cavity	SDC10-4

DIMENSIONS

mm [in]

Cross-sectional view



P102 469E

ORDERING INFORMATION

CP720 - 1 - B - 8S - 150 - S1

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

Shift pressure

	bar	[psi]
040	= 2.8	[40]
050	= 3.5	[50]
080	= 5.5	[80]
125	= 8.6	[125]
150	= 10.3	[150]

Spool seals
S1 = Seal at top of spool
S2 = Seals at both ends of spool

P102 005E



Cartridge Valves Technical Information

Directional Control Valves

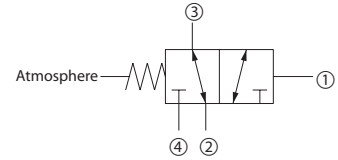
Hydraulic Piloted

CP722-1

OPERATION

This valve is a 3-way hydraulically piloted spool with atmospheric vent.

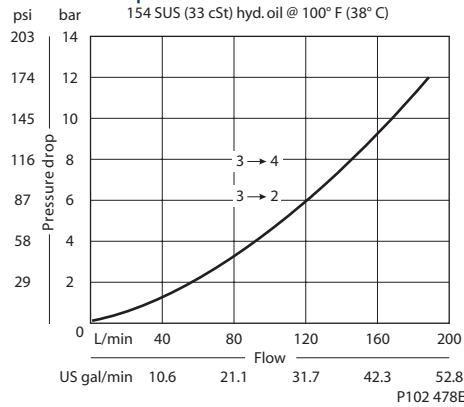
Schematic



P102 498E

SPECIFICATIONS

Theoretical performance



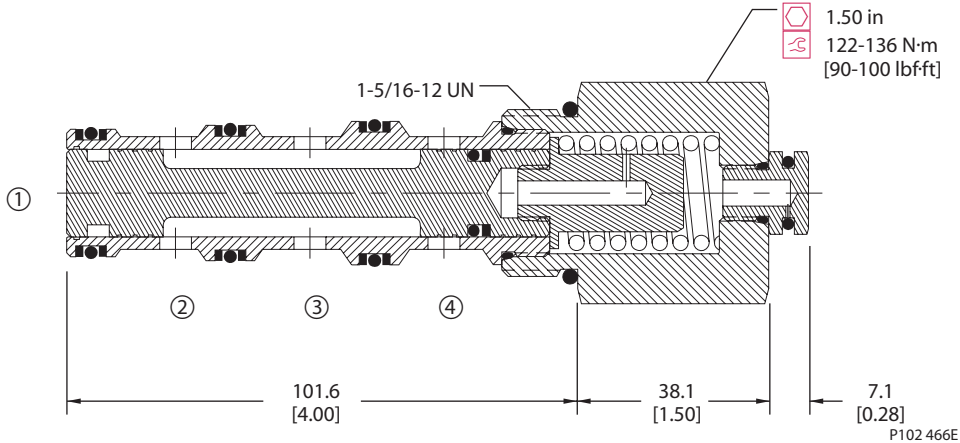
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	130 l/min [34 US gal/min]
Weight	0.61 kg [1.34 lb]
Cavity	CP16-4

DIMENSIONS

mm [in]

Cross-sectional view



Directional control valves CP722-1

ORDERING INFORMATION

CP722 - 1 - B - 16S - 150 - S1

- Seals**
 - B = Buna-N
 - V = Viton
- 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
- Seal kit**
 - 120025 No Housing
 - 120026 CP16-4-6B
 - CP16-4-8B
 - CP16-4-12S
 - CP16-4-16S
- Shift pressure**
 - 040 = 2.8 bar [40] psi
 - 080 = 5.5 bar [80] psi
 - 150 = 10.3 bar [150] psi
 - shift pressure assumes no seals
- Spool seals**
 - S1 = No seals
 - S2 = Seal at bottom of spool

P102 010E



Cartridge Valves Technical Information

Directional Control Valves

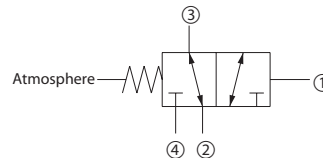
Hydraulic Piloted

CP723-1

OPERATION

This valve is a 3-way hydraulically piloted spool with atmospheric vent.

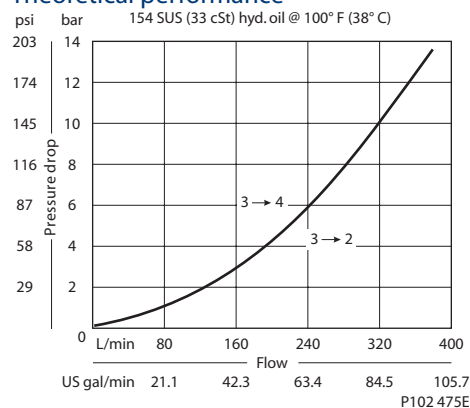
Schematic



P102 498E

SPECIFICATIONS

Theoretical performance



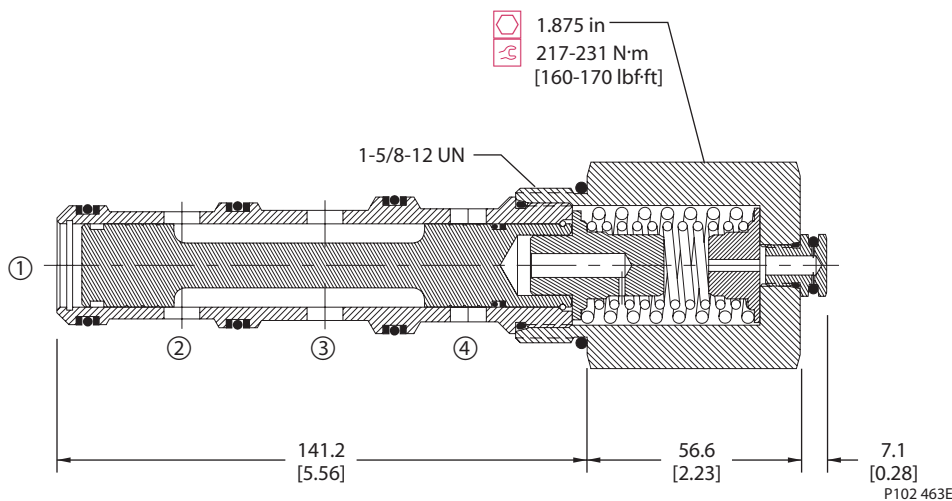
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	265 l/min [70 US gal/min]
Weight	1.22 kg [2.68 lb]
Cavity	SDC20-4

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP723 - 1 - B - 20S - 150 - S1

Seals

B = Buna-N
V = Viton

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

Spool seals

S1 = Seal at top of spool (required)
S2 = Seals at both ends of spool

Shift pressure

	bar	[psi]
050	3.5	[50]
080	5.5	[80]
100	6.9	[100]
130	9.0	[130]
150	10.3	[150]

P102 015E



Cartridge Valves Technical Information

Directional Control Valves

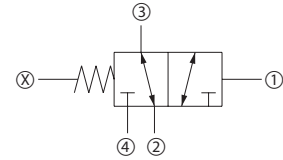
Hydraulic Piloted

CP720-2

OPERATION

This valve is a 3-way double hydraulically piloted spool.

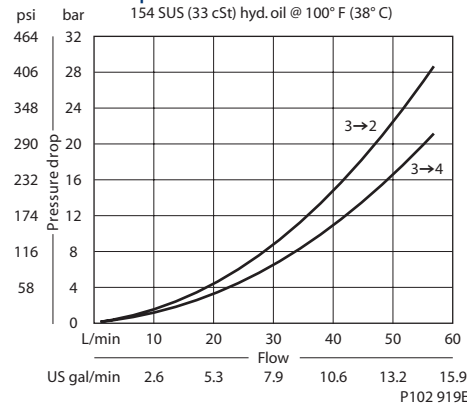
Schematic



P102 938E

SPECIFICATIONS

Theoretical performance



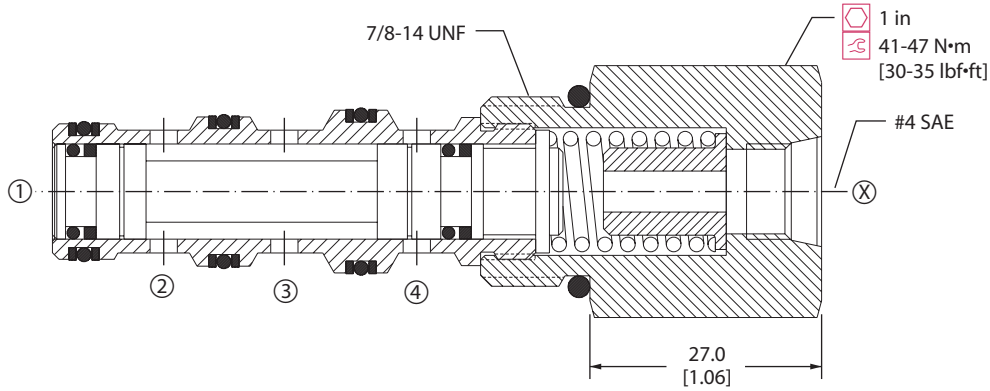
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	25 l/min [7 US gal/min]
Weight	0.15 kg [0.33 lb]
Cavity	SDC10-4

DIMENSIONS

mm [in]

Cross-sectional view



P102 758

Directional control valves CP720-2

ORDERING INFORMATION

CP720 - 2 - B - 4S - 150 - S1

<p>Seals</p> <p>B = Buna-N V = Viton</p> <p>Seal kit 120200 120201</p> <p>Housing and ports</p> <p>0 = No Housing L3B = AL, 3/8 BSP L4B = AL, 1/2 BSP 6S = AL, #6 SAE 8S = AL, #8 SAE Other housings available</p>	<p>Housing P/N</p> <p>No Housing SDC10-4-L-3B SDC10-4-L-4B CP10-4-6S CP10-4-8S</p>	<p>Spool seals</p> <p>S1=Seal at top of spool S2=Seals at both ends of spool S3= No seal S4= Seals at bottom of spool</p> <p>Shift 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>050</td> <td>= 3.5</td> <td>[50]</td> </tr> <tr> <td>080</td> <td>= 5.5</td> <td>[80]</td> </tr> <tr> <td>125</td> <td>= 8.6</td> <td>[125]</td> </tr> <tr> <td>150</td> <td>= 10.3</td> <td>[150]</td> </tr> </table> <p>shift pressure assumes no seals</p>		bar	[psi]	040	= 2.8	[40]	050	= 3.5	[50]	080	= 5.5	[80]	125	= 8.6	[125]	150	= 10.3	[150]
	bar	[psi]																		
040	= 2.8	[40]																		
050	= 3.5	[50]																		
080	= 5.5	[80]																		
125	= 8.6	[125]																		
150	= 10.3	[150]																		

P102 759E



Cartridge Valves Technical Information

Directional Control Valves

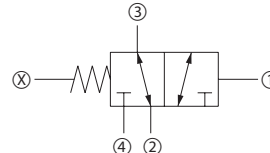
Hydraulic Piloted

CP722-2

OPERATION

This valve is a 3-way double hydraulically piloted spool.

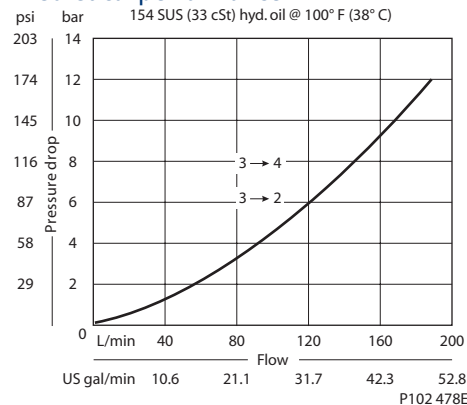
Schematic



P102 938E

SPECIFICATIONS

Theoretical performance



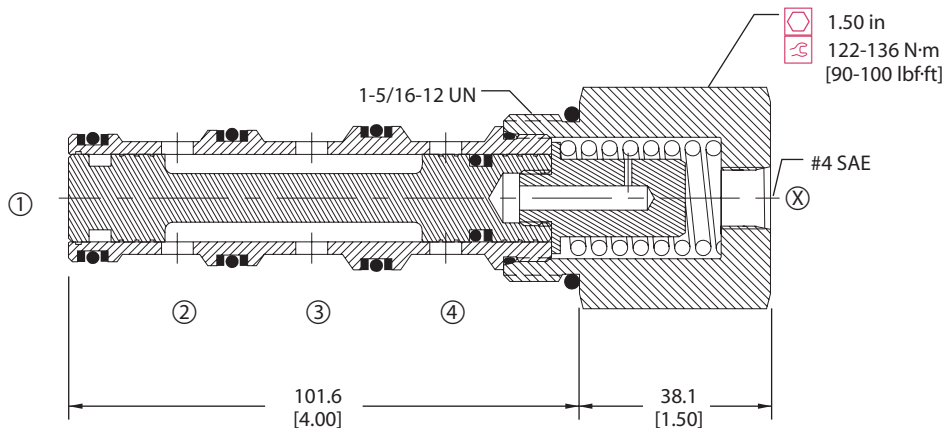
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	130 l/min [34 US gal/min]
Weight	0.61 kg [1.34 lb]
Cavity	CP16-4

DIMENSIONS

mm [in]

Cross-sectional view



P102 951

ORDERING INFORMATION

CP722 - 2 - B - 16S - 150 - S1

Seals

B = Buna-N
V = Viton

Seal kit
120025
120026

Housing and ports

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

Housing P/N

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

Shift pressure

040 = 2.8 [40]
080 = 5.5 [80]
150 = 10.3 [150]
shift pressure assumes no seals

Spool seals

S1 = Seal at top of spool
S2 = Seals at both ends of spool
S3 = No seals
S4 = Seal at bottom of spool

P102 955E



Cartridge Valves Technical Information

Directional Control Valves

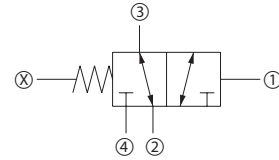
Hydraulic Piloted

CP723-2

OPERATION

This valve is a 3-way double hydraulically piloted spool.

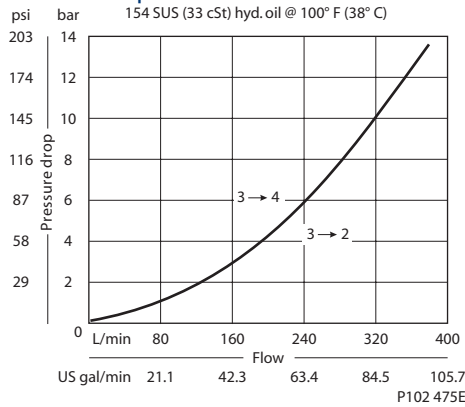
Schematic



P102 938E

SPECIFICATIONS

Theoretical performance



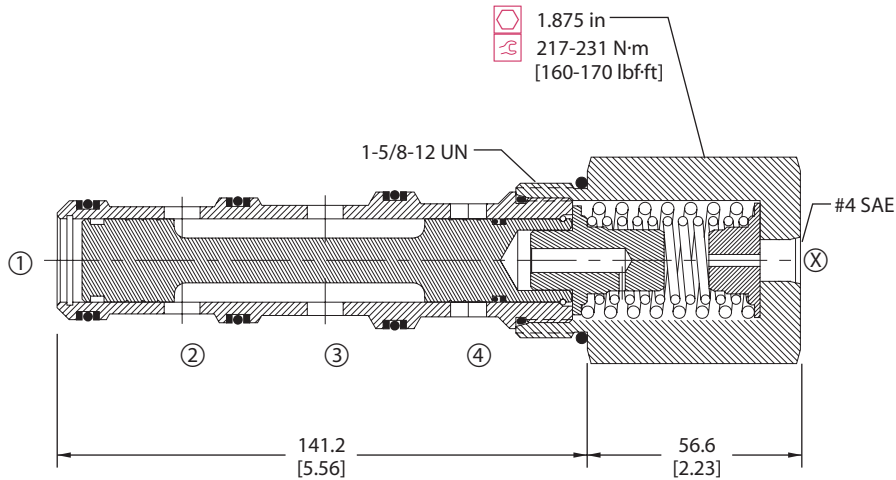
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	265 l/min [70 US gal/min]
Weight	1.22 kg [2.68 lb]
Cavity	SDC20-4

DIMENSIONS

mm [in]

Cross-sectional view



P102 952

Directional control valves CP723-2

ORDERING INFORMATION

CP723 - 2 - B - 20S - 150 - S1

Seals

B = Buna-N
V = Viton

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

Seal kit
120181
120182

Housing P/N

No Housing
CP20-4-8B
CP20-4-10B
CP20-4-16S
CP20-4-20S

Spool seals

S1 = Seal at top of spool
S2 = Seals at top and bottom of spool
S3 = No seals
S4 = Seal at bottom of spool

Shift pressure

bar	[psi]
050	3.5 [50]
080	5.5 [80]
100	6.9 [100]
130	9.0 [130]
150	10.3 [150]

shift pressure assumes no seals

P102 956E



Cartridge Valves Technical Information

Directional Control Valves

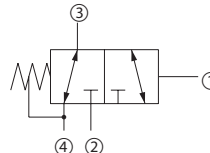
Hydraulic Piloted

CP720-5

OPERATION

This valve is a 3-way hydraulically piloted spool.

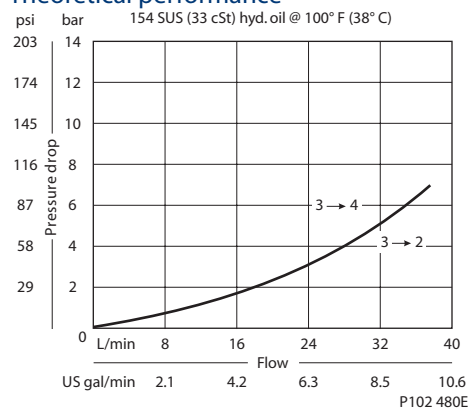
Schematic



P102 500E

SPECIFICATIONS

Theoretical performance



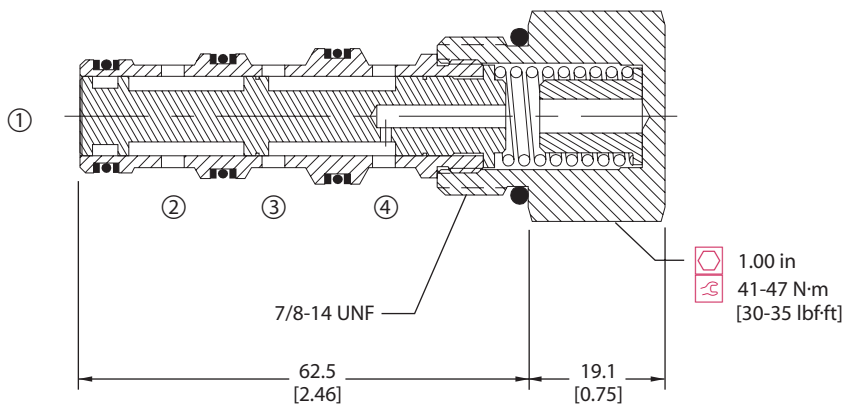
Specifications

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

DIMENSIONS

mm [in]

Cross-sectional view



P102 468E

ORDERING INFORMATION

CP720 - 5 - B - 8S - 150 - S3

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

Spool seals

S3 = No seal
S4 = Seal at bottom of spool

Shift pressure

bar [psi]
050 = 3.5 [50]
080 = 5.5 [80]
125 = 8.6 [125]
150 = 10.3 [150]

shift pressure assumes no seals

P102 006E



Cartridge Valves Technical Information

Directional Control Valves

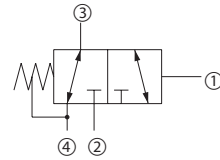
Hydraulic Piloted

CP722-11

OPERATION

This valve is a 3-way hydraulically-piloted spool.

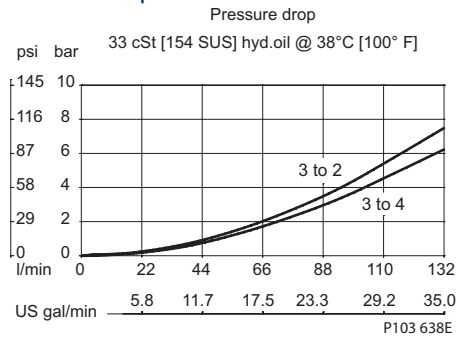
Schematic



P102 500E

SPECIFICATIONS

Theoretical performance



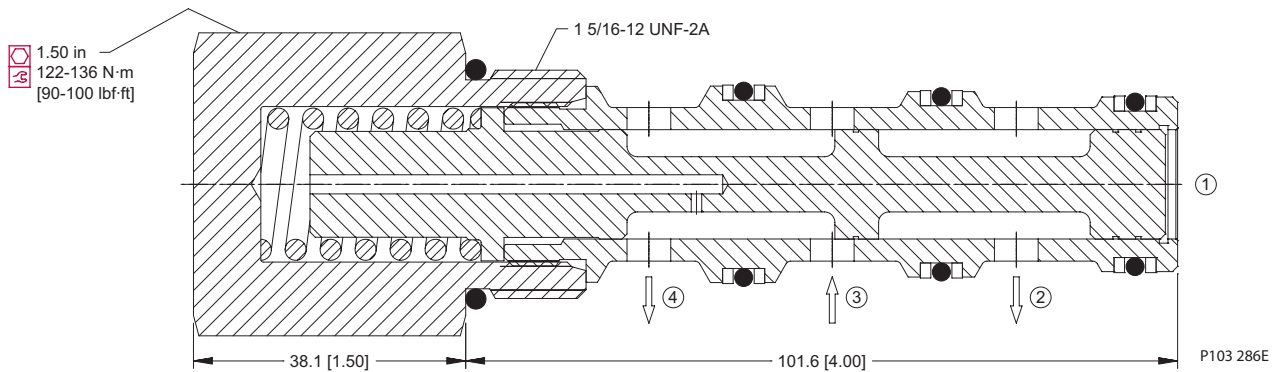
Specifications

Rated pressure	450 bar [6500 psi]
Rated flow at 7 bar [100 psi]	125 l/min [33 US gal/min]
Leakage	164 cm ³ /min [10 in ³ /min] @ Oil temperature range -20° to 80°C [-4° to 180°F]
Weight	0.61 kg [1.34 lb]
Cavity	CP16-4

DIMENSIONS

mm [in]

Cross-sectional view



Directional control valves CP722-11

ORDERING INFORMATION

CP722-11-U-6B-040

Seals	Seal kit	Shift pressure
U = Urethane	120677	bar [psi]
		040 = 2.8 40
		080 = 5.5 80
Housing and ports	Housing P/N	
0 = No Housing	No Housing	
6B = AL, 3/4 BSP	CP16-4-6B	
8B = AL, 1 BSP	CP16-4-8B	
12S = AL, #12 SAE	CP16-4-12S	
16S = AL, #16 SAE	CP16-4-16S	
Other housings available		

P103 287E



Cartridge Valves Technical Information

Directional Control Valves

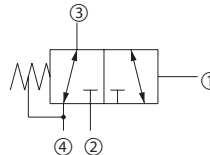
Hydraulic Piloted

CP722-5

OPERATION

This valve is a 3-way hydraulically piloted spool.

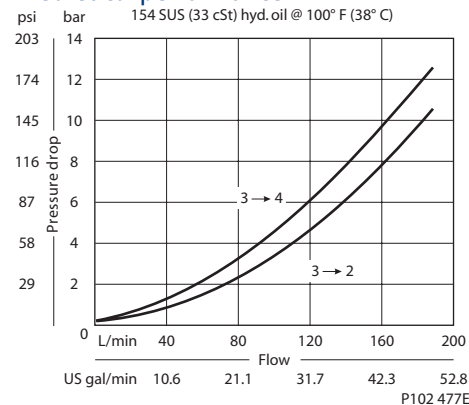
Schematic



P102 500E

SPECIFICATIONS

Theoretical performance



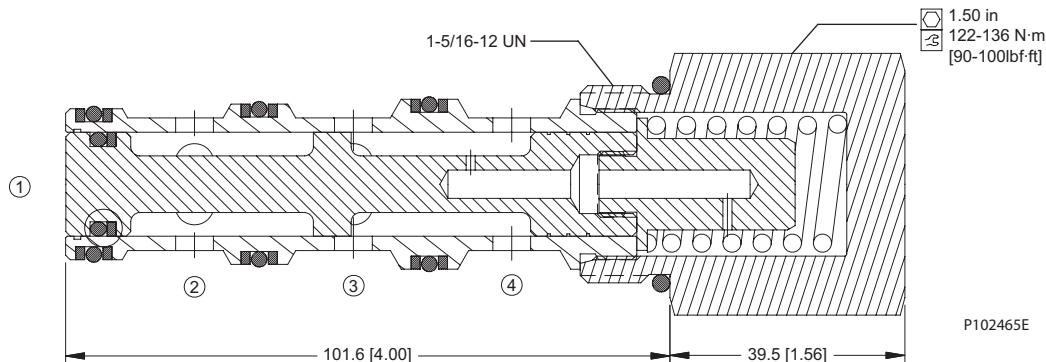
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	130 l/min [34 US gal/min]
Weight	0.61 kg [1.34 lb]
Cavity	CP16-4

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP722 - 5 - B - 16S - 150 - S3

Seals

B = Buna-N
V = Viton

Seal kit
120025
120026

Housing and ports

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

Housing P/N

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

Spool seals

S3 = No seal
S4 = Seal at bottom of spool

Shift pressure

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

shift pressure assumes no seals

P102 013E



Cartridge Valves Technical Information

Directional Control Valves

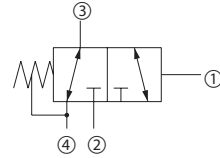
Hydraulic Piloted

CP723-5

OPERATION

This valve is a 3-way hydraulically piloted spool.

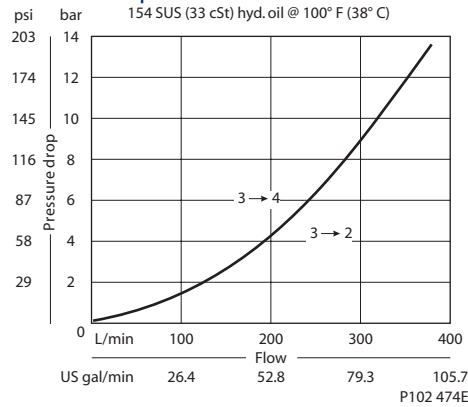
Schematic



P102 500E

SPECIFICATIONS

Theoretical performance



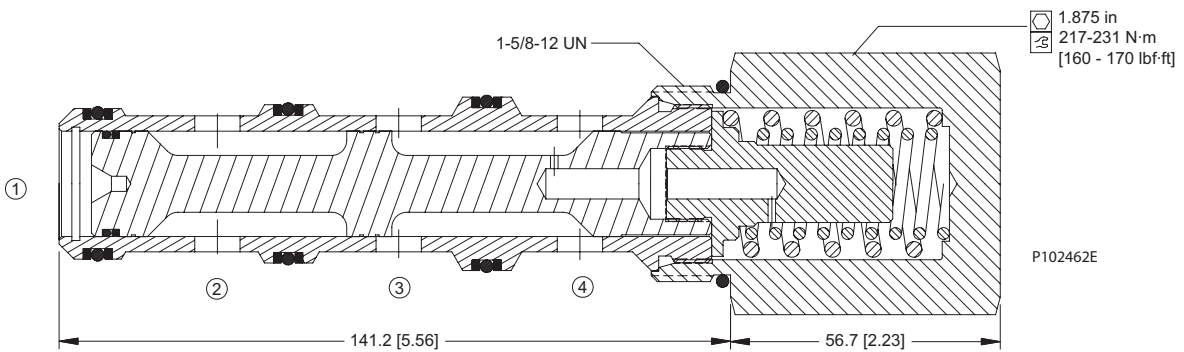
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	265 l/min [70 US gal/min]
Weight	1.22 kg [2.68 lb]
Cavity	SDC20-4

DIMENSIONS

mm [in]

Cross-sectional view



Directional control valves CP723-5

ORDERING INFORMATION

CP723 - 5 - B - 20S - 150 - S3

Seals

B = Buna-N
V = Viton

Housing and ports

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

Seal kit

120181
120182

Housing P/N

No Housing
CP20-4-8B
CP20-4-10B
CP20-4-16S
CP20-4-20S

Spool seals

S3 = No seal
S4 = Seal at bottom of spool

Shift pressure

Shift pressure (bar)	Shift pressure (psi)
050 = 3.5	[50]
080 = 5.5	[80]
100 = 6.9	[100]
130 = 9.0	[130]
150 = 10.3	[150]

shift pressure assumes no seals

P102 018E



Cartridge Valves Technical Information

Directional Control Valves

Hydraulic Piloted

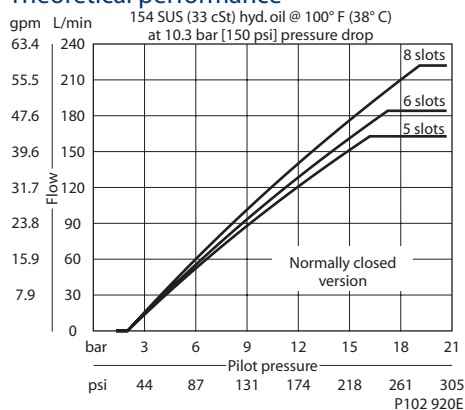
CP712-7

OPERATION

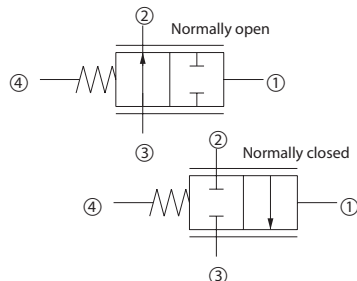
This valve is a hydraulically piloted proportional flow control.

SPECIFICATIONS

Theoretical performance



Schematic



P102 937E

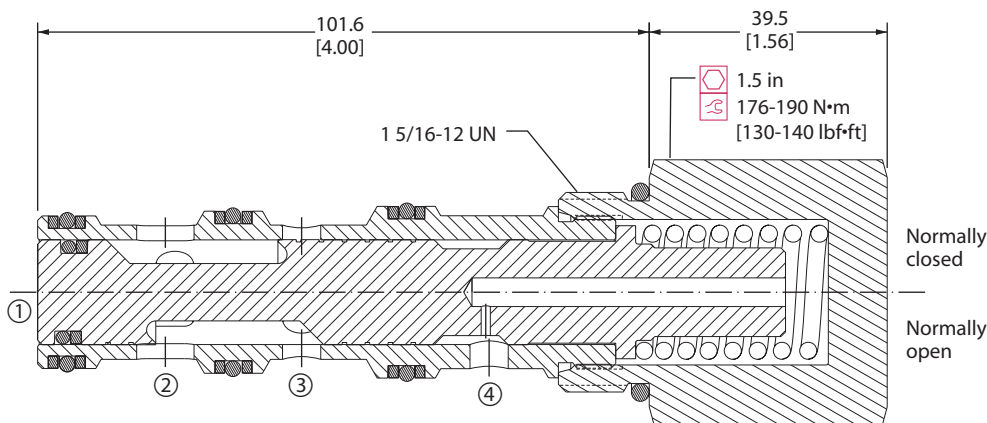
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 10 bar [150 psi]	220 l/min [58 US gal/min]
Weight	0.61 kg [1.34 lb]
Cavity	CP16-4

DIMENSIONS

mm [in]

Cross-sectional view



P102 936E

ORDERING INFORMATION

CP712-7-B-12S-C-5-S4

Spool seal

S3 = No spool seal
S4 = With spool seal

Sleeve option

5 = 5 slots
6 = 6 slots
8 = 8 slots

Spool configuration

C = Normally closed
O = Normally open

Seals

B = Buna-N
V = Viton

Seal kit
120025
120026

Housing and ports

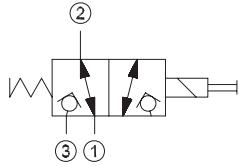
0 = No Housing
6B = AL, 3/4 BSP
8B = AL, 1 BSP
12S = AL, #12 SAE
16S = AL, #16 SAE
Other housings available

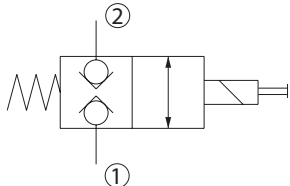
Housing P/N

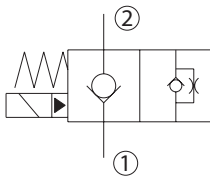
No Housing
CP16-4-6B
CP16-4-8B
CP16-4-12S
CP16-4-16S

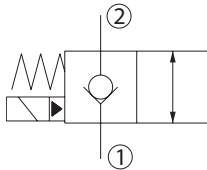
P102 894E

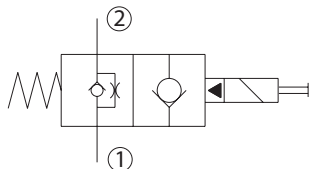
Directional control valves
CP712-7

3-Way, 2-Position Poppet	Model No.	Cavity	Description	Flow*	Pressure	Page
	EVH 06/D5	NCS06/3	Solenoid Valve, Poppet Type, 3-Way, 2-Position	20 l/min [5 US gal/min]	230 bar [3300 psi]	10.16

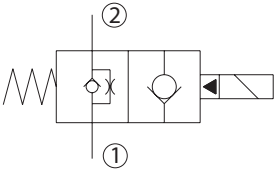
2-Way Poppet	Model No.	Cavity	Description	Flow*	Pressure	Page
	SVP08-CDB	SDC08-2	Solenoid Valve, Poppet Type, Double-Blocking, Normally Closed	16 l/min [4 US gal/min]	230 bar [3300 psi]	10.17
	EVK 06/C5	NCS06/2		50 l/min [13 US gal/min]	210 bar [3000 psi]	10.18

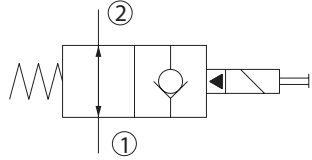
2-Way Poppet	Model No.	Cavity	Description	Flow*	Pressure	Page
	SVP08-NC	SDC08-2	Solenoid Valve, Poppet Type, Normally Closed, Pilot Operated	35 l/min [9 US gal/min]	230 bar [3300 psi]	10.19
	SVP10-NC	SDC10-2		80 l/min [21 US gal/min]	230 bar [3300 psi]	10.20
	CP501-1	CP12-2		115 l/min [30 US gal/min]	210 bar [3000 psi]	10.21

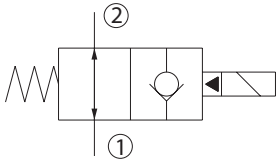
2-Way Poppet	Model No.	Cavity	Description	Flow*	Pressure	Page
	SVP08-NCR	SDC08-2	Solenoid Valve, Poppet Type, Normally Closed, Pilot Operated with Reverse Free Flow	35 l/min [9 US gal/min]	230 bar [3300 psi]	10.22
	SVP10-NCR	SDC10-2		80 l/min [21 US gal/min]	230 bar [3300 psi]	10.23
	CP501-3	CP12-2		115 l/min [30 US gal/min]	210 bar [3000 psi]	10.24
	CP502-3	SDC16-2		130 l/min [34 US gal/min]	210 bar [3000 psi]	10.25
	CP503-3	SDC20-2		230 l/min [61 US gal/min]	210 bar [3000 psi]	10.26

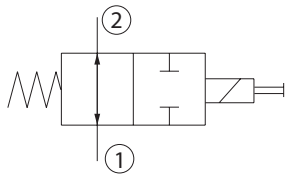
2-Way Poppet	Model No.	Cavity	Description	Flow*	Pressure	Page
	SVP08-NO	SDC08-2	Solenoid Valve, Poppet Type, Normally Open, Pilot Operated	35 l/min [9 US gal/min]	230 bar [3300 psi]	10.27
	SVP10-NO	SDC10-2		80 l/min [21 US gal/min]	230 bar [3300 psi]	10.28

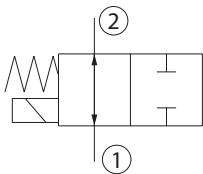
* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

2-Way Poppet	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP501-2	CP12-2	Solenoid Valve, Poppet Type, Normally Open, Pilot Operated	115 l/min [30 US gal/min]	210 bar [3000 psi]	10.29

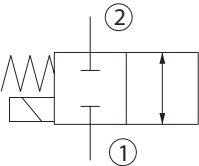
2-Way Poppet	Model No.	Cavity	Description	Flow*	Pressure	Page
	SVP08-NOR	SDC08-2	Solenoid Valve, Poppet Type, Normally Open, Pilot Operated with reverse Free Flow	35 l/min [9 US gal/min]	230 bar [3300 psi]	10.30
	SVP10-NOR	SDC10-2			80 l/min [21 US gal/min]	230 bar [3300 psi]

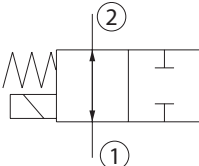
2-Way Poppet	Model No.	Cavity	Description	Flow*	Pressure	Page	
	CP501-4	CP12-2	Solenoid Valve, Poppet Type, Normally Open, Pilot Operated with reverse Free Flow	115 l/min [30 US gal/min]	210 bar [3000 psi]	10.32	
	CP502-4	SDC16-2			130 l/min [34 US gal/min]	210 bar [3000 psi]	10.33
	CP503-4	SDC20-2			230 l/min [61 US gal/min]	210 bar [3000 psi]	10.34

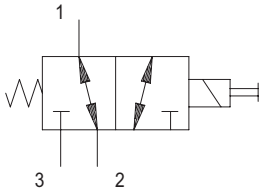
2-Way Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV08-22-01	SDC08-2	Solenoid Valve, Spool Type, 2-Way, 2-Position, Normally Open, Push Type	16 l/min [4 US gal/min]	230 bar [3300 psi]	10.35

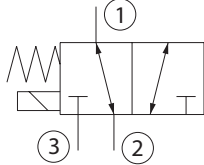
2-Way Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV10-22-01	SDC10-2	Solenoid Valve, Spool Type, 2-Way, 2-Position, Normally Open, Pull Type	27 l/min [7 US gal/min]	230 bar [3300 psi]	10.36

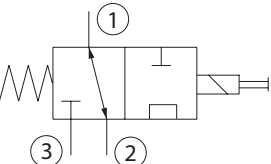
* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

2-Way Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV08-22-02	SDC08-2	Solenoid Valve, Spool Type, 2-Way, 2-Position, Normally Closed, Pull Type	14 l/min [4 US gal/min]	230 bar [3300 psi]	10.37
	SV10-22-02	SDC10-2		35 l/min [9 US gal/min]	230 bar [3300 psi]	10.38

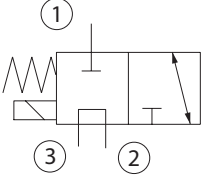
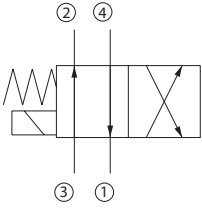
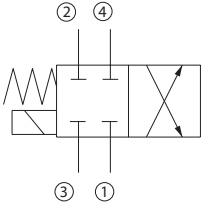
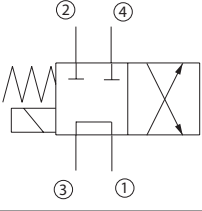
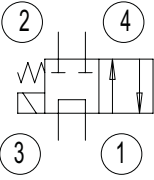
2-Way Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV08-22-03	SDC08-2	Solenoid Valve, Spool Type, 2-Way, 2-Position, Normally Open, Pull Type	12 l/min [3 US gal/min]	230 bar [3300 psi]	10.39

3-Way, 2-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV08-23-01	SDC08-3	Solenoid Valve, Spool Type, 3-Way, 2-Position	17 l/min [5 US gal/min]	230 bar [3300 psi]	10.40
	SV10-23-01	SDC10-3		28 l/min [7 US gal/min]	230 bar [3300 psi]	10.41
	CP521-21	CP12-3		60 l/min [16 US gal/min]	240 bar [3500 psi]	10.42

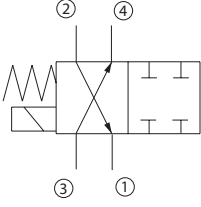
3-Way, 2-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV08-23-02	SDC08-3	Solenoid Valve, Spool Type, 3-Way, 2-Position	10 l/min [3 US gal/min]	230 bar [3300 psi]	10.43
	SV10-23-02	SDC10-3		15 l/min [4 US gal/min]	230 bar [3300 psi]	10.44

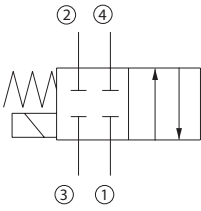
3-Way, 2-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV08-23-03	SDC08-3	Solenoid Valve, Spool Type, 3-Way, 2-Position	18 l/min [5 US gal/min]	230 bar [3300 psi]	10.45

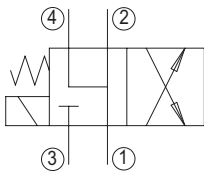
* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

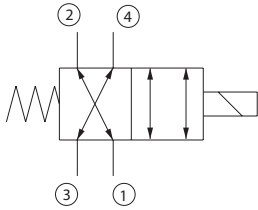
3-Way, 2-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV08-23-04	SDC08-3	Solenoid Valve, Spool Type, 3-Way, 2-Position	10 l/min [3 US gal/min]	230 bar [3300 psi]	10.46
	SV10-23-04	SDC10-3		20 l/min [5 US gal/min]	230 bar [3300 psi]	10.47
4-Way, 2-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV08-24-01	SDC08-4	Solenoid Valve, Spool Type, 4-Way, 2-Position	8 l/min [2 US gal/min]	230 bar [3300 psi]	10.48
	SV10-24-01	SDC10-4		15 l/min [4 US gal/min]	230 bar [3300 psi]	10.49
4-Way, 2-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV08-24-02	SDC08-4	Solenoid Valve, Spool Type, 4-Way, 2-Position	10 l/min [3 US gal/min]	230 bar [3300 psi]	10.50
4-Way, 2-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV08-24-04	SDC08-4	Solenoid Valve, Spool Type, 4-Way, 2-Position	8 l/min [2 US gal/min]	230 bar [3300 psi]	10.51
4-Way, 2-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV10-24-12	SDC10-4	Solenoid Valve, Spool Type, 4-Way, 2-Position	18 l/min [5 US gal/min]	230 bar [3300 psi]	10.52

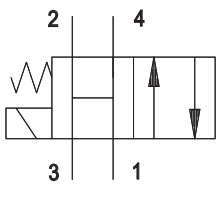
* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

4-Way, 2-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV10-24-05	SDC10-4	Solenoid Valve, Spool Type, 4-Way, 2-Position	25 l/min [7 US gal/min]	230 bar [3300 psi]	10.53

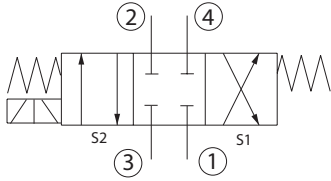
4-Way, 2-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV10-24-07	SDC10-4	Solenoid Valve, Spool Type, 4-Way, 2-Position	24 l/min [6 US gal/min]	230 bar [3300 psi]	10.54

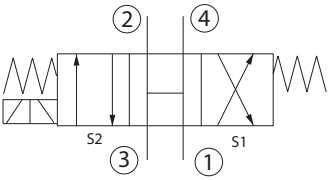
4-Way, 2-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV08-24-08	SDC08-4	Solenoid Valve, Spool Type, 4-Way, 2-Position	24 l/min [6 US gal/min]	230 bar [3300 psi]	10.55

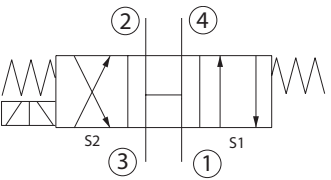
4-Way, 2-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	CP531-21	CP12-4	Solenoid Valve, Spool Type, 4-Way, 2-Position	32 l/min [8 US gal/min]	240 bar [3500 psi]	10.56

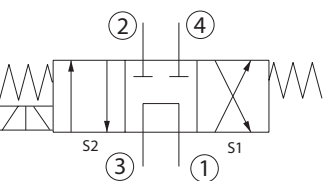
4-Way, 2-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV10-24-13	SDC10-4	Solenoid Valve, Spool Type, 4-Way, 2-Position	21 l/min [6 US gal/min]	230 bar [3300 psi]	10.57

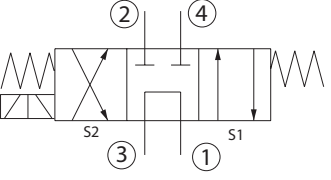
* Flow ratings are based on a pressure drop of 7 bar [100 psi] unless otherwise noted. They are for comparison purposes only.

4-Way, 3-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV08-34-02	SDC08-4	Solenoid Valve, Spool Type, 4-Way, 3-Position	10 l/min [2 US gal/min]	230 bar [3300 psi]	10.58
	SV10-34-02	SDC10-4		20 l/min [6 US gal/min]	230 bar [3300 psi]	10.59

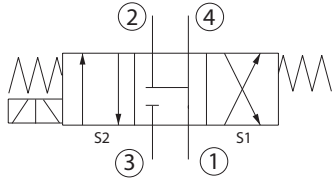
4-Way, 3-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV08-34-03	SDC08-4	Solenoid Valve, Spool Type, 4-Way, 3-Position	8 l/min [2 US gal/min]	230 bar [3300 psi]	10.60

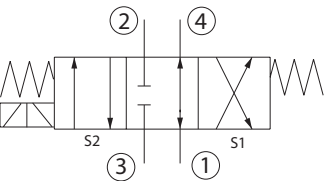
4-Way, 3-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV10-34-03	SDC10-4	Solenoid Valve, Spool Type, 4-Way, 3-Position	16 l/min [4 US gal/min]	230 bar [3300 psi]	10.61

4-Way, 3-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV08-34-04	SDC08-4	Solenoid Valve, Spool Type, 4-Way, 3-Position	6 l/min [2 US gal/min]	230 bar [3300 psi]	10.62

4-Way, 3-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV10-34-04	SDC10-4	Solenoid Valve, Spool Type, 4-Way, 3-Position	15 l/min [4 US gal/min]	230 bar [3300 psi]	10.63

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

4-Way, 3-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV08-34-05	SDC08-4	Solenoid Valve, Spool Type, 4-Way, 3-Position	10 l/min [2 US gal/min]	230 bar [3300 psi]	10.64
	SV10-34-05	SDC10-4		20 l/min [6 US gal/min]	230 bar [3300 psi]	10.65

4-Way, 3-Position Spool	Model No.	Cavity	Description	Flow*	Pressure	Page
	SV10-34-11	SDC10-4	Solenoid Valve, Spool Type, 4-Way, 3-Position	24 l/min [6 US gal/min]	230 bar [3300 psi]	10.66

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

SOLENOID VALVES

Solenoid valves are electrically-operated, on-off poppet or spool-type valves for load holding, blocking, or directional control applications.

Solenoid valves



P103 227

PLUS+1™ COMPLIANT

Sauer-Danfoss solenoid valves are PLUS+1™ compliant. PLUS+1 compliance means our valves are directly compatible with the PLUS+1 machine control architecture. Adding solenoid valves to your application using PLUS+1 GUIDE software is as easy as *drag-and-drop*. Software development that used to take months can now be done in just a few hours. For more information on PLUS+1 GUIDE, visit www.sauer-danfoss.com/plus1. The table below details available GUIDE function blocks for controlling Sauer-Danfoss solenoid valves.

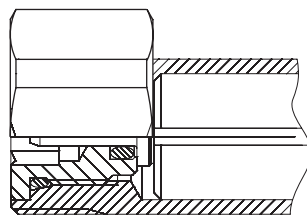
GUIDE function blocks

On-off	10106088
On-off-on	10106102

SV AND SVP COIL OPTIONS

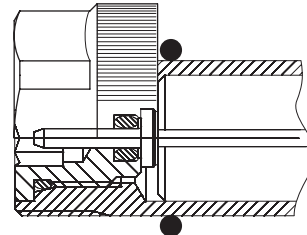
All SV and SVP valves may be ordered with a robust coil option. The robust coil option uses a steel nut and does not use O-rings on the top and bottom of the coil. The standard coil option uses a plastic nut with one O-ring on the top of the coil and one O-ring on the bottom of the coil.

Robust Coil Nut



No O-rings needed
 Torque is same as standard nut

Standard Coil Nut



Standard Coil Nut Kit includes O-rings

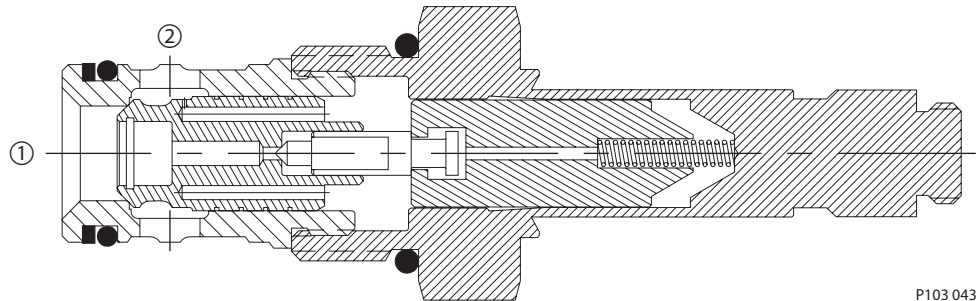
P108 282E

POPPET-TYPE SOLENOID VALVES

Poppet-type solenoid valves are two-way, normally open or normally-closed valves.

Normally-closed

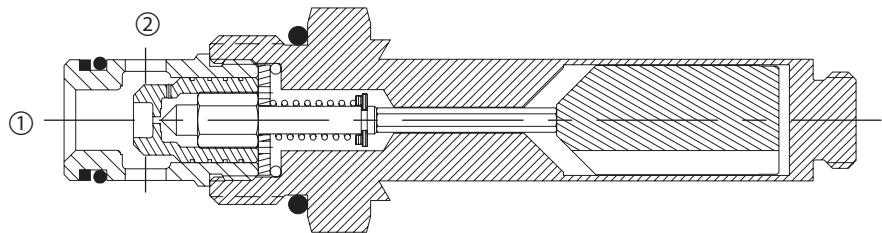
Normally-closed poppet valves block flow from 2 to 1 when de-energized. When the solenoid coil is energized, magnetic force lifts the small pilot dart from its seat, creating a pressure differential across the main poppet that provides the force to lift the main poppet off its seat. Models with free-reverse-flow also act as a low-pressure, free-flow check valve from 1 to 2 when energized; standard models provide an orifice-connection to 2 when pressure is applied at 1.

Normally closed poppet-type solenoid valve


P103 043

Normally-open

Normally-open poppet valves provide free flow from 2 to 1 when de-energized. When the solenoid coil is energized, magnetic force seats the small pilot dart, creating a pressure differential that provides the force to seat the main poppet and block flow. Models with free-reverse flow also act as a low-pressure, free-flow check valve from 1 to 2 when de-energized; standard models provide an orifice-connection to 2 when pressure is applied at 1.

Normally open poppet-type solenoid valve


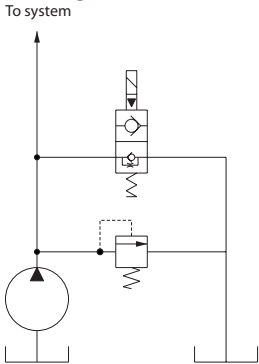
P103 044

POPPET-TYPE SOLENOID VALVES (continued)

Applications
 Common applications for normally-open and normally-closed poppet valves include:

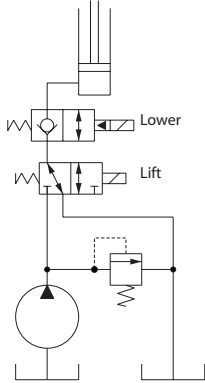
- Load holding and lowering with single-acting cylinders.
- Unloading of a fixed-displacement pump.
- Use in combination to duplicate four-way, three-position valve functions. These circuits create low-cost, compact alternatives to subplate- or stack-type directional control valves. As an added advantage these poppet valve circuits do not need load holding checks as the poppets provide the same low-leakage function.

Pump unloading



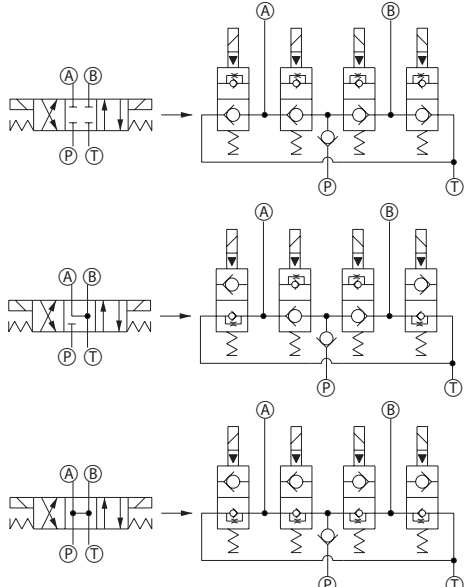
P103 103E

Lift, hold, & lower single acting cylinder



P103 102E

4-way 3-position directional valve circuits



P103 104

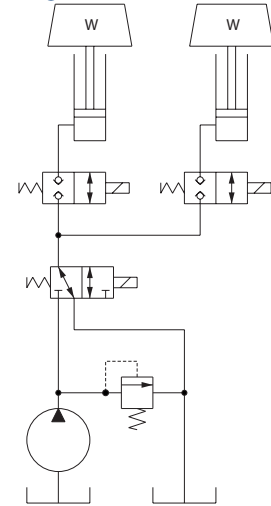
BI-DIRECTIONAL POPPET-TYPE SOLENOID VALVES

Bi-directional poppet-type solenoid valves are two-way, normally open or normally-closed valves. The poppets are pressure-balanced so that the spring holds the poppet in its de-energized position. When the solenoid coil is energized, magnetic force overcomes the spring and causes the poppet to shift.

Normally-closed

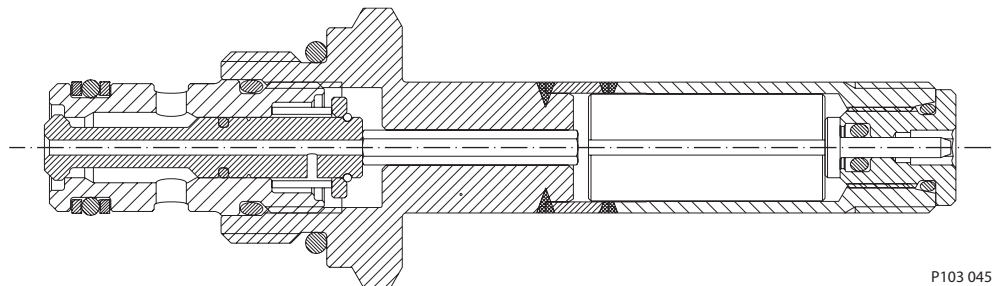
Normally-closed bi-directional poppet valves block flow in both directions when de-energized and allow free-flow when energized. These valves are typically used as directional controls for single-acting cylinders or uni-directional motors where low-leakage load holding is required, or where multiple functions must be separated.

Independent cylinder operation and load-holding



P103 105

Normally closed bi-directional poppet-type solenoid valve



P103 045

SPOOL-TYPE SOLENOID VALVES

Spool-type valves are available in 2-way 2-position, 3-way 2-position, 4-way 2-position, and 4-way 3 position configurations. For all these valves the spools are pressure-balanced and are held in position by a spring when de-energized. When the solenoid coil is energized, magnetic force overcomes the spring and shifts the spool. As the spool moves, flow forces, also known as Bernoulli forces, act on the spool and can prevent proper operation. These forces are a function of pressure and flow, and the catalog ratings show the operating limits for each valve. These limits are based on the valve's ability to shift at 85% of nominal voltage at 140°F ambient temperature. For this reason flow and pressure ratings for solenoid spool valves should not be exceeded.

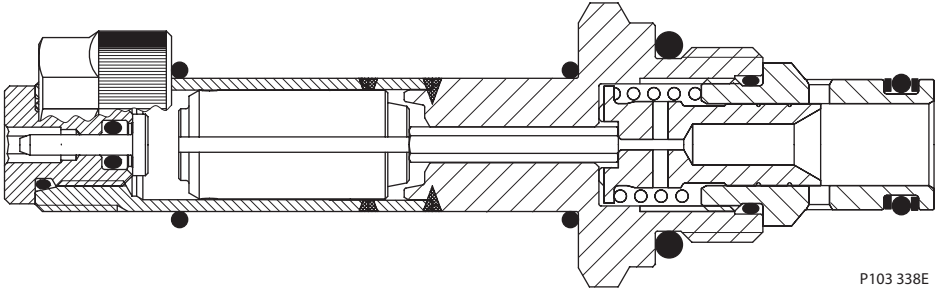
Consult your Sauer-Danfoss representative for extreme applications.

SPOOL-TYPE SOLENOID VALVES (continued)

Two-way, two-position

Two-way, two-position spool-type valves are either normally open or normally closed.

Two-way, two-position spool-type solenoid valve

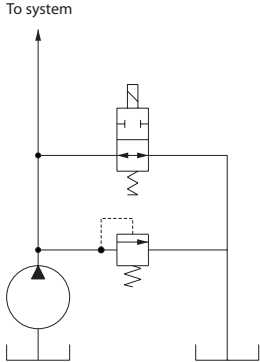


P103 338E

Common applications for two-way, two-position spool type solenoid valves are:

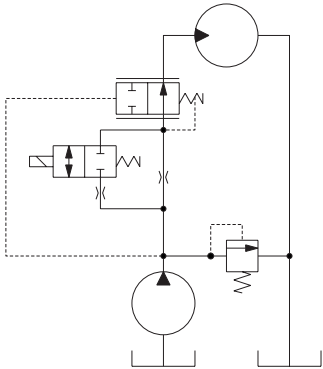
- Unloading of a fixed-displacement pump.
- Cylinder regeneration. When the two-way two-position spool valve is energized the cylinder circuit is in regeneration mode for faster cylinder extension.
- Two-speed motor (or cylinder) operation. By using multiple valves and circuit logic, similar circuits can be used for three-speed, four-speed, etc.

Pump unloading



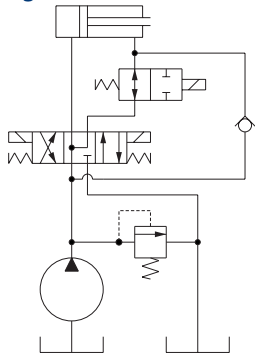
P103 106E

Two-speed motor circuit



P103 108

Cylinder regeneration circuit



P103 107

Energize 2-way spool valve for faster extension

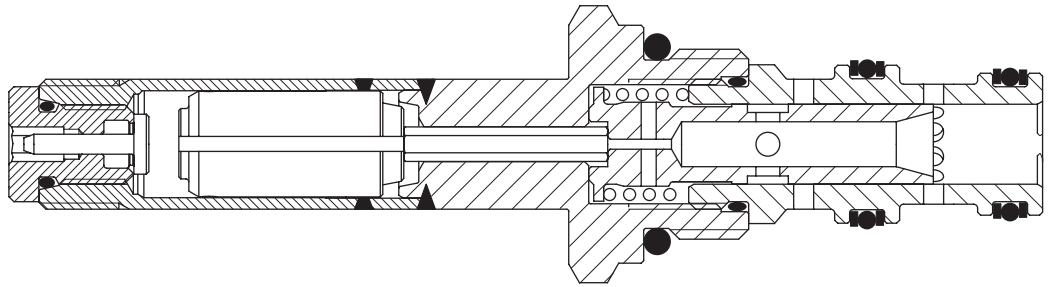
SPOOL-TYPE SOLENOID VALVES (continued)

Three-way, two-position

Three-way, two-position spool-type valves are available with a variety of porting and flow paths.

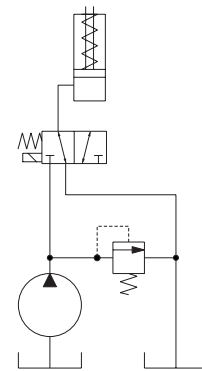
Common applications for three-way, two-position spool type solenoid valves:

Three-way, two-position spool-type solenoid valves



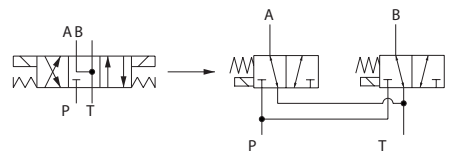
- Control of a single-acting cylinder, clutch, or brake.
- Circuit selector
- Pilot control for a large directional spool.
- Use in combination to duplicate four-way, three-position valve functions, creating low-cost, compact alternatives to subplate- or stack-type directional control valves.

Single acting cylinder, clutch, or brake



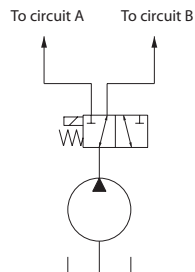
P103 109

4-way 3-position directional valve circuits



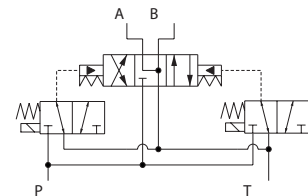
P103 112

Selector circuit



P103 110E

Pilot for directional valve



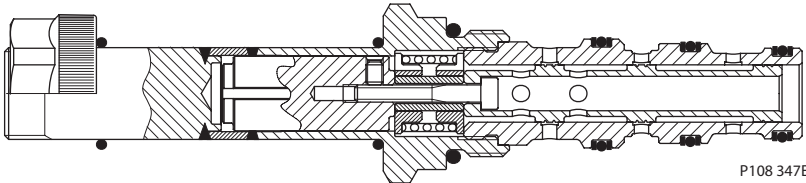
P103 111

SPOOL-TYPE SOLENOID VALVES (continued)

Four-way, two-position

Four-way, two-position spool-type valves are available with normally-open, normally-closed, reversing, and single-acting spool options.

Four-way, two-position spool-type solenoid valves

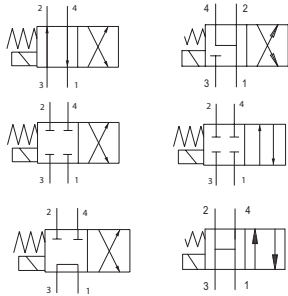


P108 347E

Common applications for four-way, two-position spool type solenoid valves are:

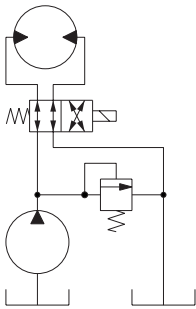
- Directional control for motors or cylinders.
- Use in combination to duplicate four-way, three-position valve functions, creating low-cost, compact alternatives to subplate- or stack-type directional control valves.

4-way 2-position spool options



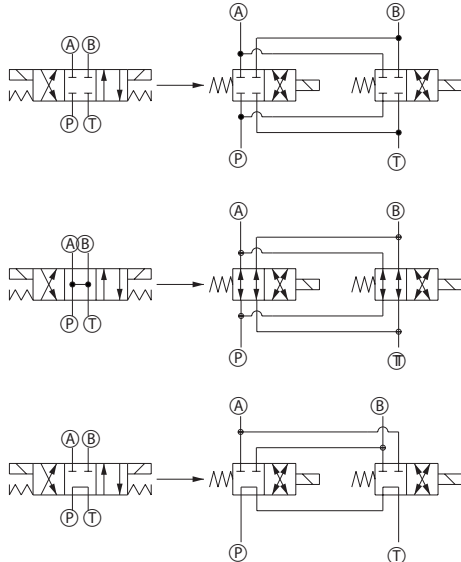
P103 113

Motor directional control



P103 114

4-way 3-position directional valve circuits



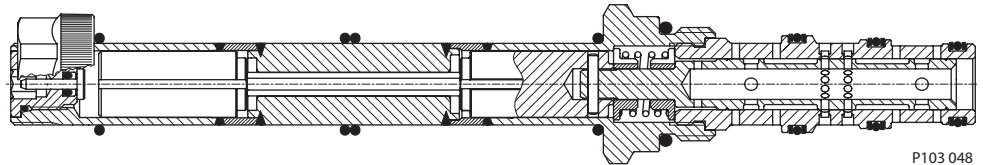
P103 115

SPOOL-TYPE SOLENOID VALVES (continued)

Four-way, three-position

Four-way, three-position spool-type valves are available with normally-open, normally-closed, motor, and tandem spools.

Four-way, three-position spool-type solenoid valve

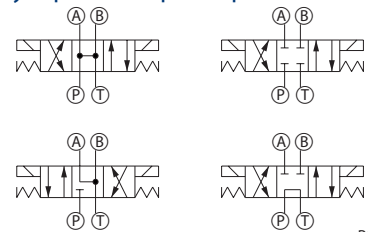


P103 048

These valves are typically used for directional control for motor or cylinder functions.

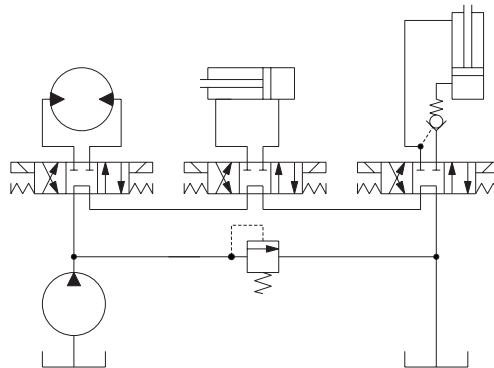
Typical series (or open-center) and parallel (or closed-center) circuits are shown below.

4-way 3-position spool options



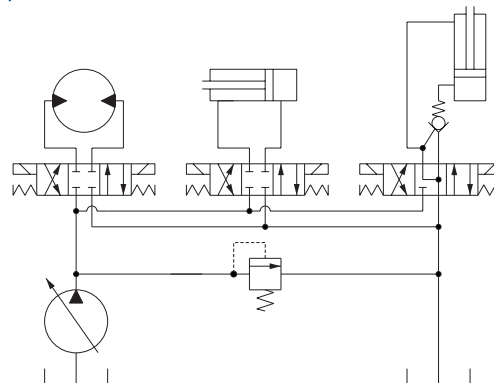
P103 116

Series (open-center) circuit



P103 117

Parallel (closed-center) circuit



P103 118



Cartridge Valves Technical Information

Solenoid Valves

2-Way, 2-Position Poppet

EVH 06/D5



OPERATION

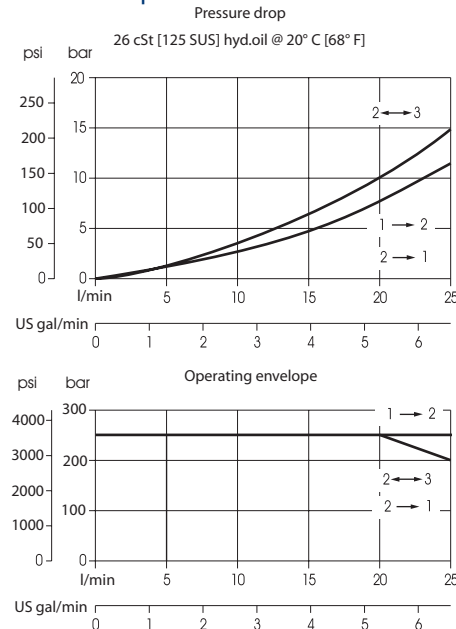
This is a direct-acting, 2-position, 3-way, poppet-type solenoid valve.

SPECIFICATIONS

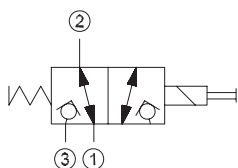
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	20 l/min [5 US gal/min]
Weight	0.44 kg [0.97 lb]
Cavity	NCS06/3
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic

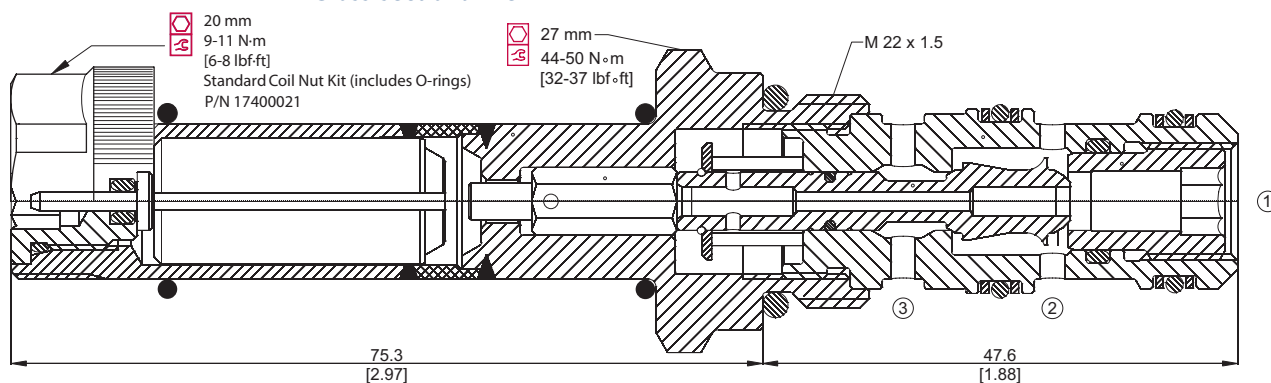


P103 536

DIMENSIONS

mm [in]

Cross-sectional view



P103 611

ORDERING INFORMATION

EVH 06/D5-12D-DN-00-V

Coil voltage
 00 = No Coil
 12D = 12 VDC (Standard Coil)
 24D = 24 VDC (Standard Coil)
 R12D = 12 VDC (R-Coil)
 R24D = 24 VDC (R-Coil)
 Coil termination:
 00 = No Coil
 FL = Flying Lead
 AJ = Amp Junior *
 DN = DIN 43650 *
 DE = Deutsch
 AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Seals Seal kit
 Omit = Buna 230000110
 V = Viton 230000070

Body and ports
 00 = Cartridge only
 SE3/8 = Al, 3/8 BSP
 SE1/2 = Al, 1/2 BSP
 SE6S = Al, #6 SAE
 SE8S = Al, #8 SAE
 Other housings available

Body Nomenclature
 No Body
 NCS06/3-SE-3/8
 NCS06/3-SE-1/2
 NCS06/3-SE-6S
 NCS06/3-SE-8S

P103 619E

* These terminations are not available on robust coil (R12D, R24D)

Solenoid valves
EVH 06/D5



Cartridge Valves Technical Information

Solenoid Valves

2-Way Poppet

SVP08-CDB



OPERATION

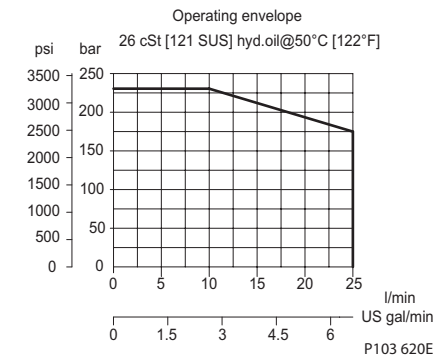
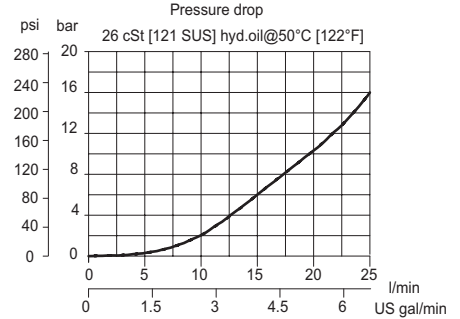
This is a normally-closed, double-blocking poppet-type solenoid valve.

SPECIFICATIONS

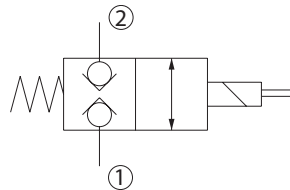
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	16 l/min [4 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.32 kg [0.71 lb]
Cavity	SDC08-2
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic

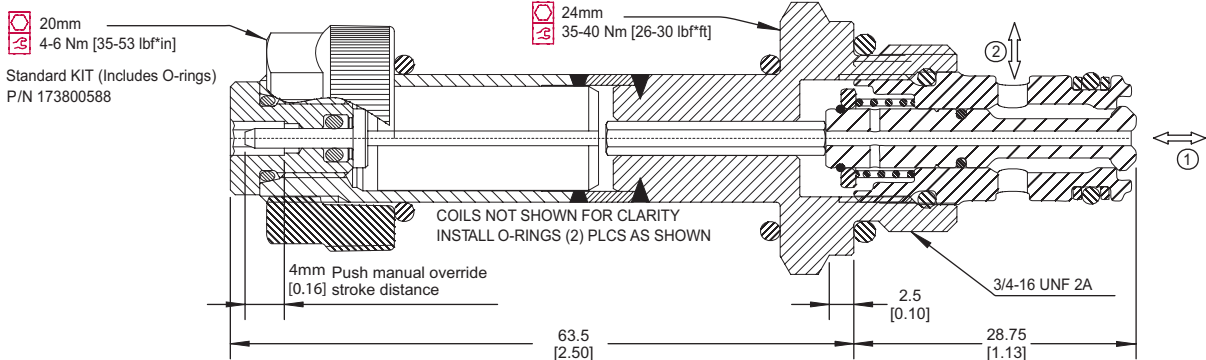


P102 716

DIMENSIONS

mm [in]

Cross-sectional view



P103 488

ORDERING INFORMATION

SVP08-CDB-12D-DN-B-F-00

Coil voltage
00 = No Coil
12D = 12 VDC (Standard Coil)
24D = 24 VDC (Standard Coil)
R12D = 12 VDC (R-Coil)
R24D = 24 VDC (R-Coil)
Coil termination:

00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1
* These terminations are not available on robust coil (R12D, R24D)

Body and Ports
Omit = Cartridge only
4S = Al, #4 SAE
6S = Al, #6 SAE
DG2B = Al, 1/4 BSP
DG3B = Al, 3/8 BSP
Other housings available

Filter

Omit = No Filter
F = Filter 300 µm

Seals
B = Buna-N seals
V = Viton seals

Seal Kit
354001619
354001719

Body Nomenclature
No Body
CP08-2-4S
CP08-2-6S
SDC08-2-DG2B
SDC08-2-DG3B

P103 545E

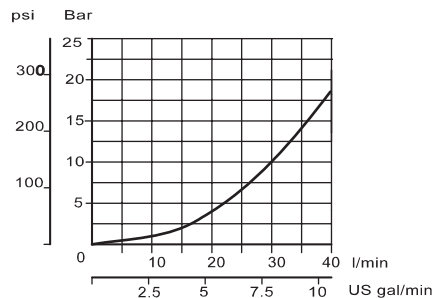
Solenoid valves
SVP08-CDB

OPERATION

This is a normally-closed, double-blocking poppet-type solenoid valve.

Theoretical performance

Pressure drop
26 cSt [121 SUS] hyd.oil at 50°C [122 °F]

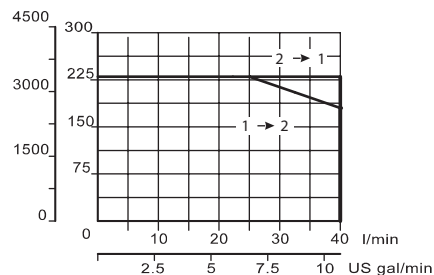


SPECIFICATIONS

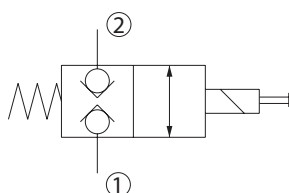
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	50 l/min [13 US gal/min]
Weight	0.43 kg [0.95 lb]
Cavity	NCS06/2
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Operating envelope
26 cSt [121 SUS] hyd.oil at 50°C [122 °F]



Schematic



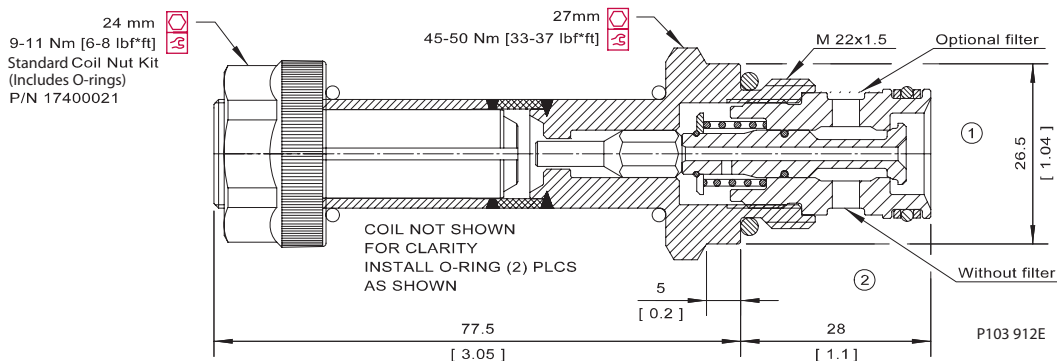
P102 716

P103 861E

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

EVK 06/C5-F-12D-DN-00-V

Filter	Seals	Seal kit	
Omit = No Filter	Omit = Buna	230000440	
F = Filter 300 µm	V = Viton	230000710	
Coil voltage	Body and ports		Body Nomenclature
00 = No Coil	00 = Cartridge only		No Body
12D = 12 VDC (Standard Coil)	DG3/8 = Al, 3/8 BSP		NCS06/2-DG-3/8
24D = 24 VDC (Standard Coil)	DG1/2 = Al, 1/2 BSP		NCS06/2-DG-1/2
R12D = 12 VDC (R-Coil)	DG6S = Al, #6 SAE		NCS06/2-DG-6S
R24D = 24 VDC (R-Coil)	DG8S = Al, #8 SAE		NCS06/2-DG-8S
Coil termination:	Other housings available		
00 = No Coil			
FL = Flying Lead			P103 850E
AJ = Amp Junior *			
DN = DIN 43650 *			
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1			
DE = Deutsch			

* These terminations are not available on robust coil (R12D, R24D)



Cartridge Valves Technical Information

Solenoid Valves

2-Way Poppet

SVP08-NC

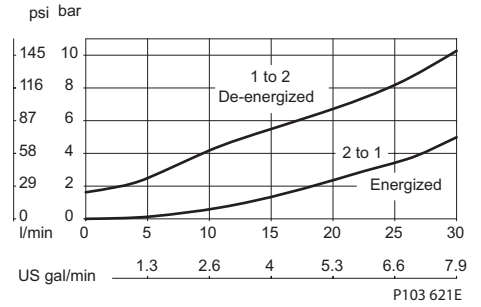


OPERATION

This is a normally-closed, pilot-operated, poppet-type solenoid valve.

Theoretical performance

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

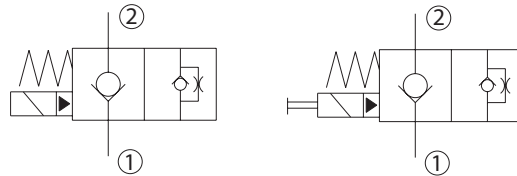


SPECIFICATIONS

Specifications

Rated pressure	230 bar [3300 psi]
Maximum flow at rated pressure	35 l/min [9 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.23 kg [0.51 lb]
Cavity	SDC08-2
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

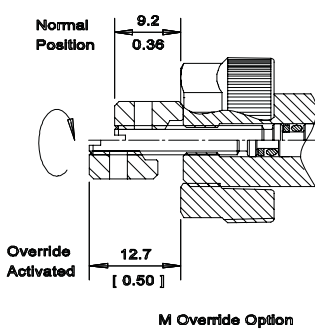
Schematic



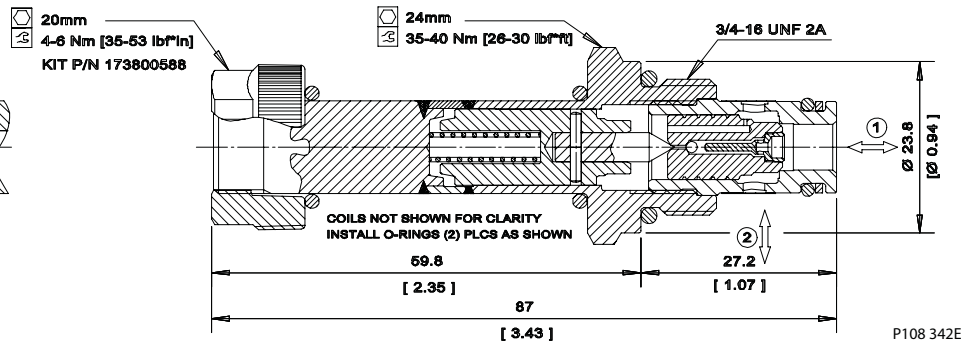
P102 384

DIMENSIONS

mm [in]



Cross-sectional view



P108 342E

ORDERING INFORMATION

SVP08-NC-12-DN-M-B-F-00

Coil voltage:
00 = No Coil
12D = 12VDC (Standard Coil)
24D = 24VDC (Standard Coil)
R12D = 12VDC (R-Coil)
R24D = 24VDC (R-Coil)

Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1
*These terminations are not available on robust coil (R12D,R24D)

Body and ports:
00 = Cartridge only
DG2B = Al, 1/4 BSP
DG3B = Al, 3/8 BSP
4S = Al, #4 SAE
6S = Al, #8 SAE
Other housings available

Filter:
Omit = No Filter
F = Filter 300 mm

Seals: Seal kit
B = Buna-n 354000119
V = Viton 354000219

Override Type:
Omit = No Override
M = Manual Override (Screw type)

Body Nomenclature
No Body
SDC08-2-DG-2B
SDC08-2-DG-3B
CP08-2-4S
CP08-2-6S

P103 543F

OPERATION

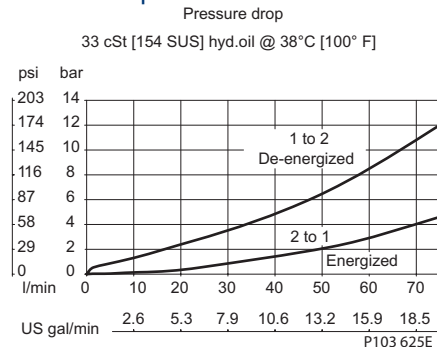
This is a normally-closed, pilot-operated, poppet-type solenoid valve.

SPECIFICATIONS

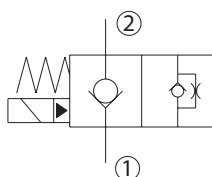
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	80 l/min [21 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.43 kg [0.95 lb]
Cavity	SDC10-2
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



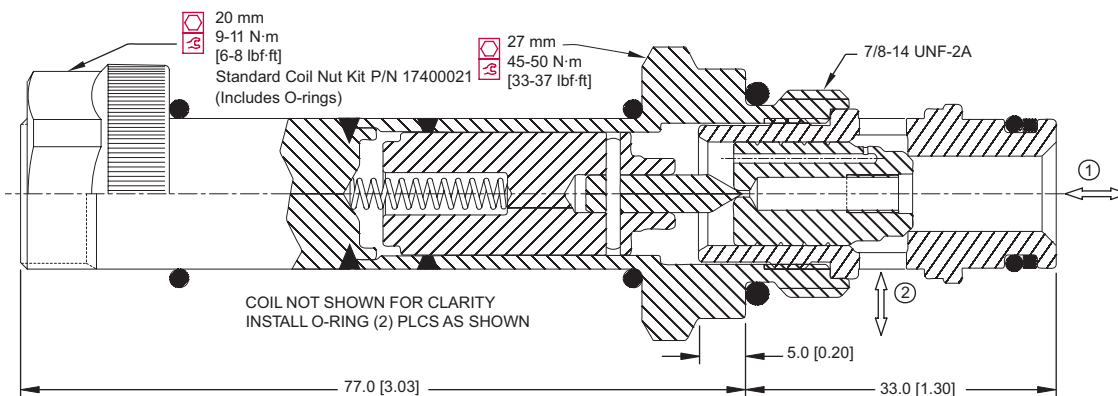
Schematic



DIMENSIONS

mm [in]

Cross-sectional view



P103 491

ORDERING INFORMATION

SVP10-NC-12D-DN-B-F-00

- Coil voltage
- 00 = No Coil
- 12D = 12 VDC (Standard Coil)
- 24D = 24 VDC (Standard Coil)
- R12D = 12 VDC (R-Coil)
- R24D = 24 VDC (R-Coil)
- Coil termination:
- 00 = No Coil
- FL = Flying Lead
- DN = DIN 43650 *
- DE = Deutsch
- AJ = Amp Junior *
- SP = Spade *
- AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1
- *These terminations are not available on robust coil (R12D, R24D)

- Body and ports
- 00 = Cartridge only
- DG3B = Al, 3/8 BSP
- DG4B = Al, 1/2 BSP
- 6S = Al, #6 SAE
- 8S = Al, #8 SAE
- Other housings available
- Filter
- Omit = No Filter
- F = Filter 300 µm
- Seals
- B = Buna-N
- V = Viton

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

P103 548E

Solenoid valves
SVP10-NC



Cartridge Valves Technical Information Solenoid Valves



2-Way Poppet CP501-1

OPERATION

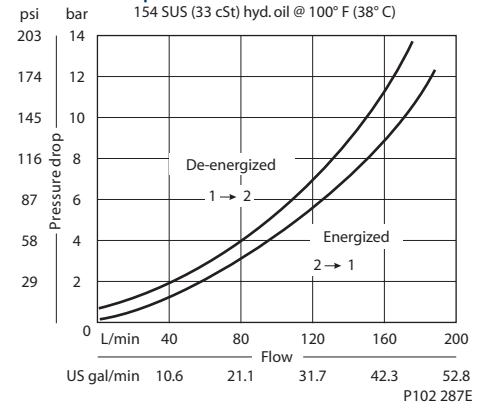
This valve is a normally closed, pilot operated, poppet type solenoid.

SPECIFICATIONS

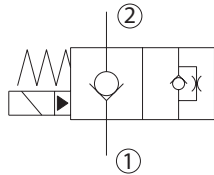
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	115 l/min [30 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.53 kg [1.16 lb]
Cavity	CP12-2
Standard Coil	D10 16 Watt
Coil nut	620186

Theoretical performance



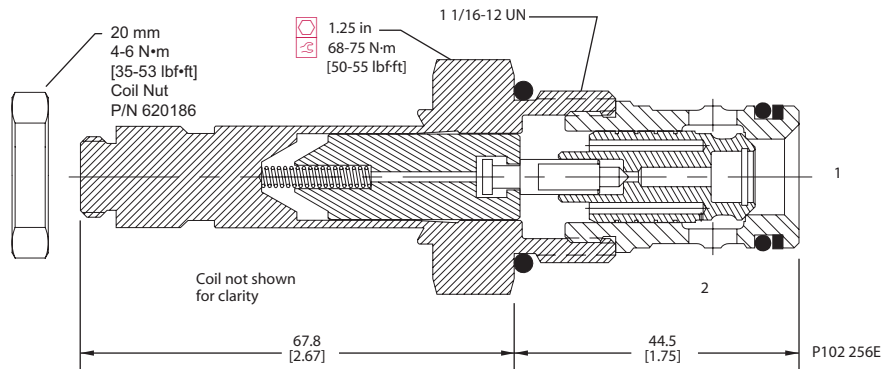
Schematic



DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

Seals

B = Buna-N
V = Viton

Housing and ports

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

Seal kit

120265
120264

Housing P/N

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

CP501 - 1 - B - 12S - 24D - S

Termination

0 = No connector
S = Spade
L = Lead
H = DIN 43650
DE = Deutsch
M2 = Metri-Pak 150 Type 1

Voltage

000 = No coil
12D = 12 VDC
24D = 24 VDC

Solenoid valves
CP501-1

Cartridge Valves Technical Information
Solenoid Valves
2-Way Poppet
SVP08-NCR

OPERATION

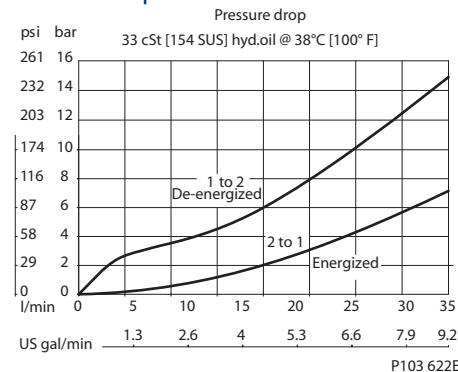
This is a normally-closed, pilot-operated, poppet-type solenoid valve with free reverse flow.

SPECIFICATIONS

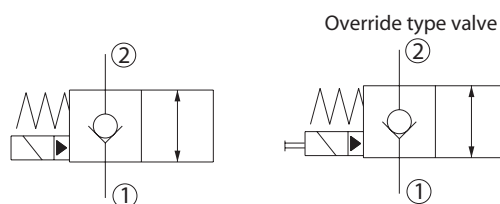
Specifications

Rated pressure	230 bar [3300 psi]
Maximum flow at rated pressure	35 l/min [9 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.23 kg [0.51 lb]
Cavity	SDC08-2
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



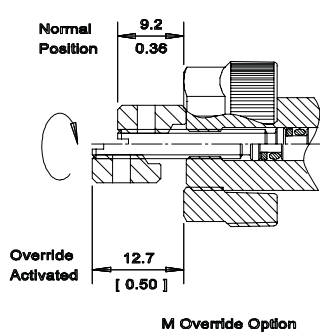
Schematic



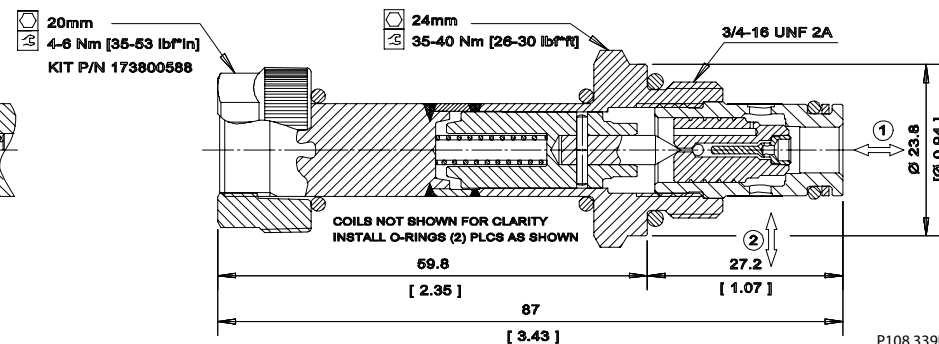
P102 386

DIMENSIONS

mm [in]



Cross-sectional view



ORDERING INFORMATION

SVP08-NCR-12-DN-M-B-F-00

Coil voltage:
00 = No Coil
12D = 12VDC (Standard Coil)
24D = 24VDC (Standard Coil)
R12D = 12VDC (R-Coil)
R24D = 24VDC (R-Coil)

Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1
*These terminations are not available on robust coil (R12D,R24D)

Body and ports:
00 = Cartridge only
DG2B = Al, 1/4 BSP
DG3B = Al, 3/8 BSP
4S = Al, #4 SAE
6S = Al, #6 SAE
Other housings available

Filter:
Omit = No Filter
F = Filter 300 mm

Seals: Seal kit
B = Buna-n 354000119
V = Viton 354000219

Override Type:
Omit = No Override
M = Manual Override (Screw type)

Body Nomenclature
No Body
SDC08-2-DG-2B
SDC08-2-DG-3B
CP08-2-4S
CP08-2-6S

P103 544E

Solenoid valves
SVP08-NCR



Cartridge Valves Technical Information

Solenoid Valves

2-Way Poppet

SVP10-NCR



OPERATION

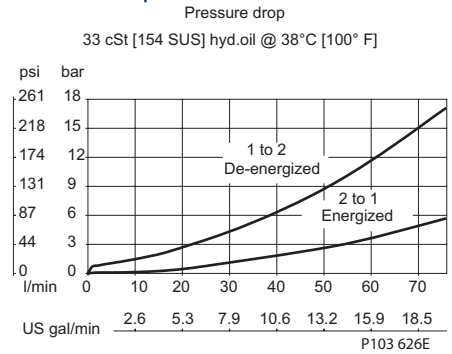
This is a normally-closed, pilot-operated, poppet-type solenoid valve with free reverse flow.

SPECIFICATIONS

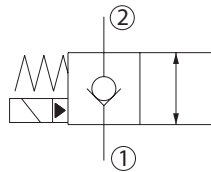
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	80 l/min [21 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.43 kg [0.95 lb]
Cavity	SDC10-2
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



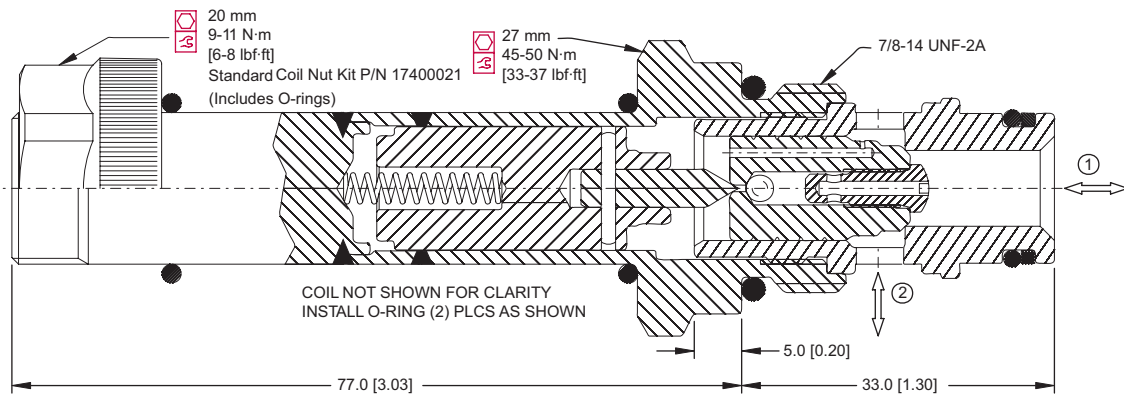
Schematic



DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

SVP10-NCR-12D-DN-B-F-00		
Coil voltage	Body and ports	Body Nomenclature
00 = No Coil	00 = Cartridge only	No Body
12D = 12 VDC (Standard Coil)	DG3B = Al, 3/8 BSP	SDC10-2-DG-3B
24D = 24 VDC (Standard Coil)	DG4B = Al, 1/2 BSP	SDC10-2-DG-4B
R12D = 12 VDC (R-Coil)	6S = Al, #6 SAE	CP10-2-6S
R24D = 24 VDC (R-Coil)	8S = Al, #8 SAE	CP10-2-8S
Coil termination:	Other housings available	
00 = No Coil		
FL = Flying Lead	Filter	
DN = DIN 43650 *	Omit = No Filter	
DE = Deutsch	F = Filter 300 µm	
AJ = Amp Junior *	Seals	
SP = Spade *	Seals kit	
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1	B = Buna-N 354000719	
* These terminations are not available on robust coil (R12D, R24D)	V = Viton 354000819	

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Solenoïd valves
SVP10-NCR



Cartridge Valves Technical Information

Solenoid Valves

2-Way Poppet

CP501-3



OPERATION

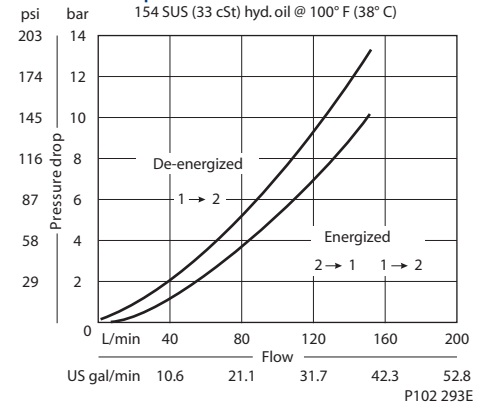
This valve is a normally closed, pilot operated, poppet type solenoid valve with free reverse flow.

SPECIFICATIONS

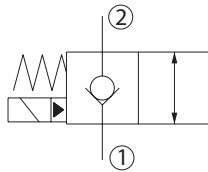
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	115 l/min [30 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.53 kg [1.16 lb]
Cavity	CP12-2
Standard Coil	D10 16 Watt
Coil nut	620186

Theoretical performance



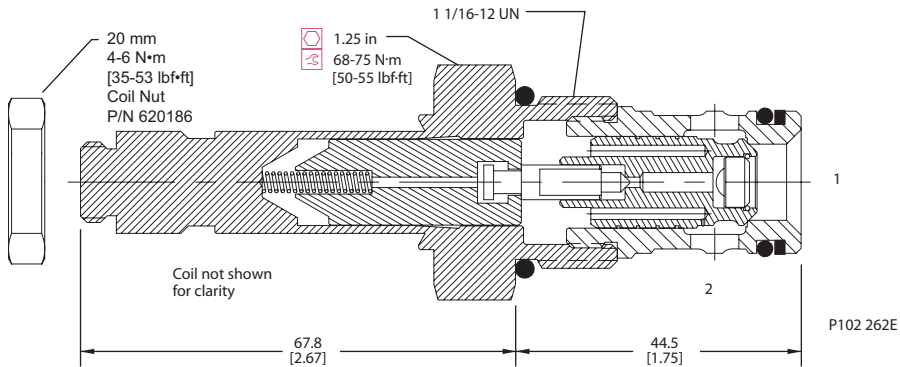
Schematic



DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

Seal

- B = Buna-N
- V = Viton

Housing and ports

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

Seal kit

- 120265
- 120264

Housing P/N

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

Voltage

- 000 = No coil
- 12D = 12 VDC
- 24D = 24 VDC

Termination

- 0 = No connector
- S = Spade
- L = Lead
- H = DIN 43650
- DE = Deutsch
- M2 = Metri-Pak 150 Type 1

CP501 - 3 - B - 12S - 24D - S



Cartridge Valves Technical Information

Solenoid Valves

2-Way Poppet

CP502-3



OPERATION

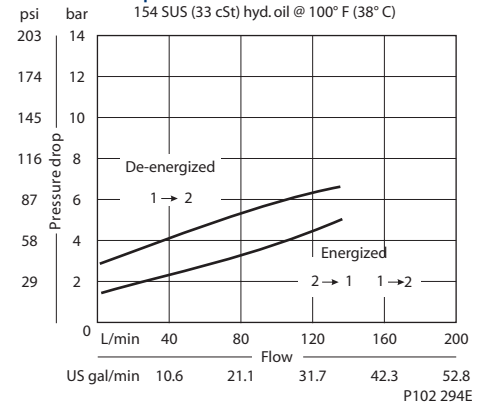
This valve is a normally closed, pilot operated, poppet type solenoid valve with free reverse flow.

SPECIFICATIONS

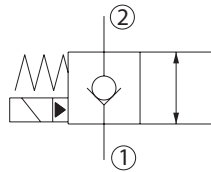
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	130 l/min [34 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.66 kg [1.45 lb]
Cavity	SDC16-2
Standard Coil	D10 16 Watt
Coil nut	620186

Theoretical performance



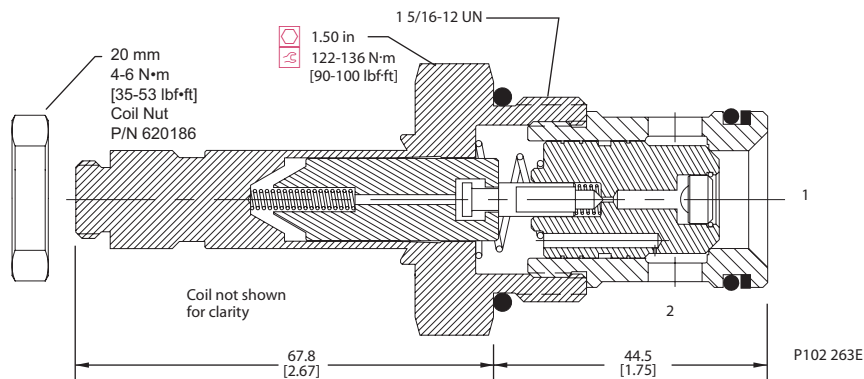
Schematic



DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP502 - 3 - B - 16S - 24D - S

Seals B = Buna-N V = Viton	Seal kit 120019 120020	Termination 0 = No connector S = Spade L = Lead H = DIN 43650 DE = Deutsch M2 = Metri-Pak 150 Type 1
Housing and ports 0 = No Housing DG6B = AL, 3/4 BSP DG8B = AL, 1 BSP 12S = AL, #12 SAE 16S = AL, #16 SAE Other housings available	Housing P/N No Housing SDC16-2-DG-6B SDC16-2-DG-8B CP16-2-12S CP16-2-16S	Voltage 000 = No coil 12D = 12 VDC 24D = 24 VDC

Solenoid valves
CP502-3

P102 318E



Cartridge Valves Technical Information

Solenoid Valves

2-Way Poppet

CP503-3



OPERATION

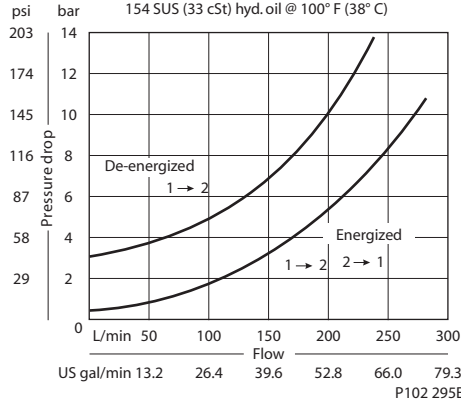
This valve is a normally closed, pilot operated, poppet type solenoid valve with free reverse flow.

SPECIFICATIONS

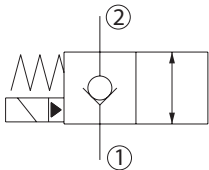
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	230 l/min [61 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.91 kg [2.00 lb]
Cavity	SDC20-2
Standard Coil	D10 16 Watt
Coil nut	620186

Theoretical performance



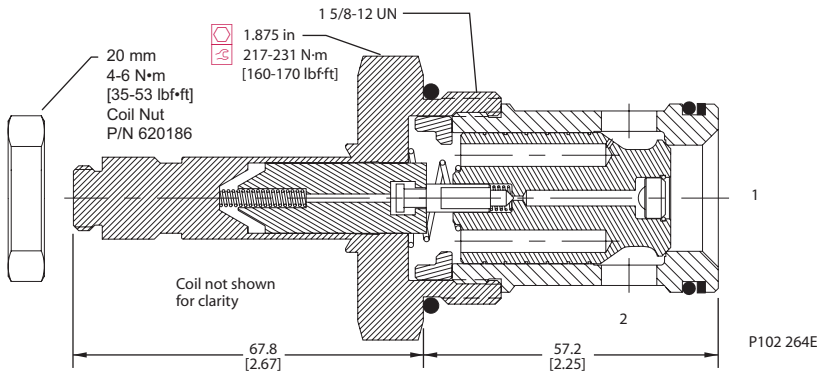
Schematic



DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

CP503 - 3 - B - 20S - 24D - S

<p>Seals B = Buna-N V = Viton</p> <p>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</p>	<p>Seal kit 120011 120012</p> <p>Housing P/N No Housing CP20-2-8B CP20-2-10B CP20-2-16S CP20-2-20S</p>	<p>Voltage 000 = No coil 12D = 12 VDC 24D = 24 VDC</p> <p>Termination 0 = No connector S = Spade L = Lead H = DIN 43650 DE = Deutsch M2 = Metri-Pak 150 Type 1</p>
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Solenoid valves
CP503-3



Cartridge Valves Technical Information Solenoid Valves



2-Way Poppet SVP08-NO

OPERATION

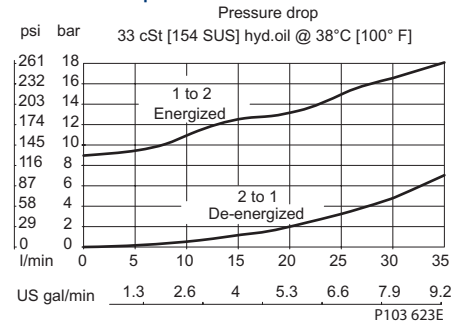
This is a normally-open, pilot-operated, poppet-type solenoid valve.

SPECIFICATIONS

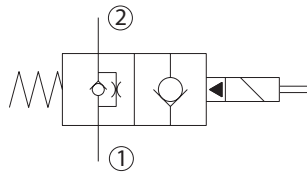
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	35 l/min [9 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.23 kg [0.51 lb]
Cavity	SDC08-2
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic

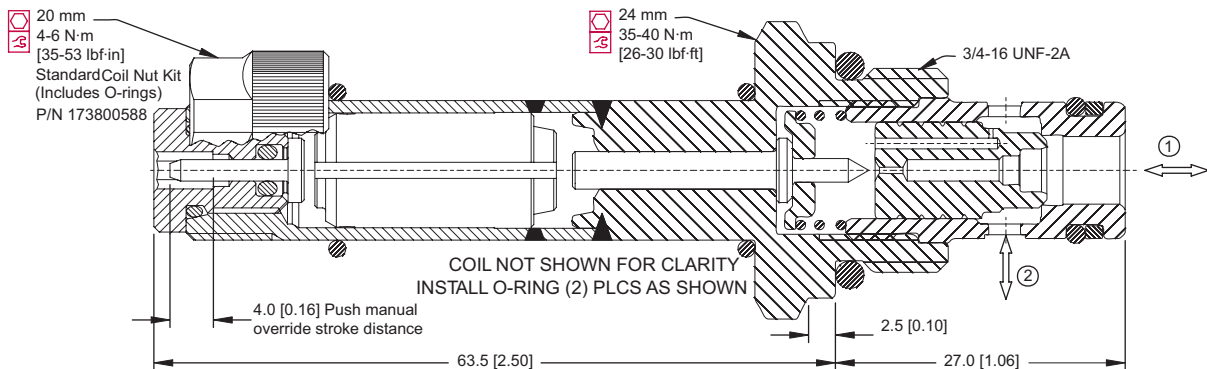


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DIMENSIONS

mm [in]

Cross-sectional view



P103 489

ORDERING INFORMATION

SVP08-NO-12D-DN-B-F-00

Coil voltage
00 = No Coil
12D = 12 VDC (Standard Coil)
24D = 24 VDC (Standard Coil)
R12D = 12 VDC (R-Coil)
R24D = 24 VDC (R-Coil)
Coil termination:

00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1
* These terminations are not available on robust coil (R12D, R24D)

Body and ports
00 = Cartridge only
DG2B = Al, 1/4 BSP
DG3B = Al, 3/8 BSP
4S = Al, #4 SAE
6S = Al, #6 SAE
Other housings available

Filter
Omit = No Filter
F = Filter 300 µm

Seals Seals kit
B = Buna-N 354003119
V = Viton 354003619

Body Nomenclature
No Body
SDC08-2-DG-2B
SDC08-2-DG-3B
CP08-2-4S
CP08-2-6S

P103 546E

Solenoid valves
SVP08-NO

Cartridge Valves Technical Information
Solenoid Valves
2-Way Poppet
SVP10-NO

OPERATION

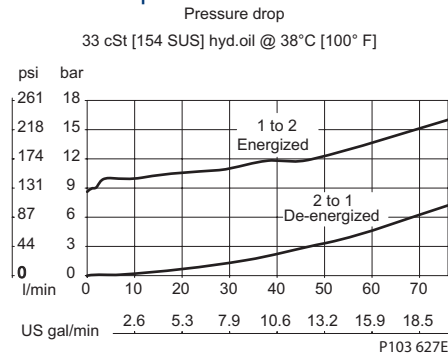
This is a normally-open, pilot-operated, poppet-type solenoid valve.

SPECIFICATIONS

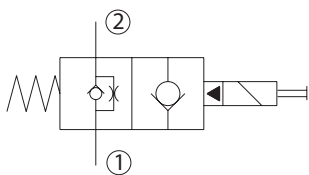
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	80 l/min [21 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.43 kg [0.95 lb]
Cavity	SDC10-2
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic

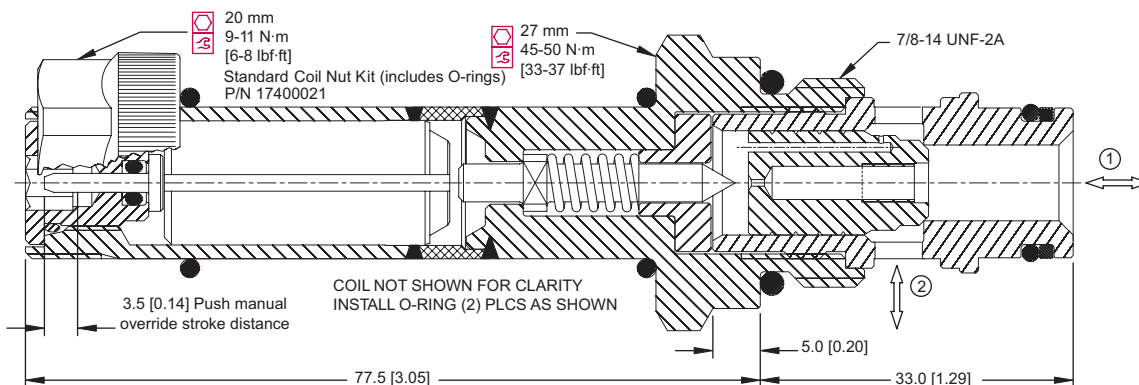


P102 385

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

SVP10-NO-12D-DN-B-F-00

Coil voltage	00 = No Coil 12D = 12 VDC (Standard Coil) 24D = 24 VDC (Standard Coil) R12D = 12 VDC (R-Coil) R24D = 24 VDC (R-Coil) Coil termination:	00 = No Coil FL = Flying Lead DN = DIN 43650 * DE = Deutsch AJ = Amp Junior * SP = Spade * AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1 * These terminations are not available on robust coil (R12D, R24D)	Body and ports	00 = Cartridge only DG3B = Al, 3/8 BSP DG4B = Al, 1/2 BSP 6S = Al, #6 SAE 8S = Al, #8 SAE Other housings available	Body Nomenclature	No Body SDC10-2-DG-3B SDC10-2-DG-4B CP10-2-6S CP10-2-8S
			Filter	Omit = No Filter F = Filter 300 µm		
			Seals	Seals kit B = Buna-N 354000719 V = Viton 354000819		

P103 550E



Cartridge Valves Technical Information

Solenoid Valves

2-Way Poppet

CP501-2



OPERATION

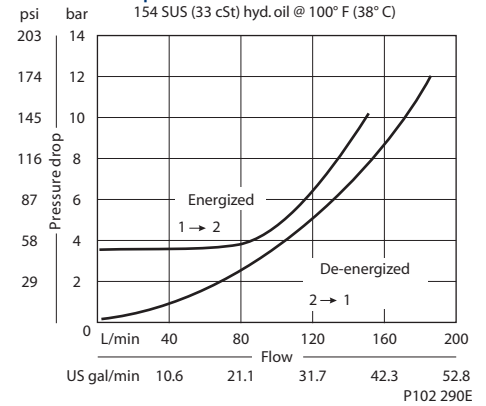
This valve is a normally open, pilot operated, poppet type solenoid.

SPECIFICATIONS

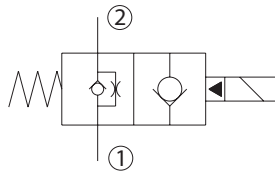
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	115 l/min [30 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.54 kg [1.19 lb]
Cavity	CP12-2
Standard Coil	D10 16 Watt
Coil nut	621468 (Std.), 622477 (Option M)

Theoretical performance



Schematic

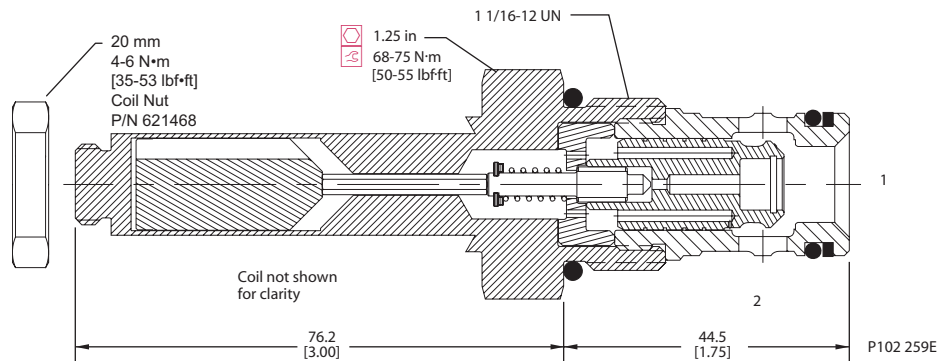


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DIMENSIONS

mm [in]

Cross-sectional view



P102 259E

ORDERING INFORMATION

CP501 - 2 - B - 10S - 24D - S

<p>Seals</p> <p>B = Buna-N V = Viton</p>	<p>Seal kit</p> <p>120265 120264</p>	<p>Housing P/N</p> <p>No Housing CP12-2-4B CP12-2-6B CP12-2-10S CP12-2-12S</p>	<p>Voltage</p> <p>000 = No coil 12D = 12 VDC 24D = 24 VDC</p>	<p>Termination</p> <p>0 = No connector S = Spade L = Lead H = DIN 43650 DE = Deutsch M2 = Metri-Pak 150 Type 1</p>
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Other housings available

P102 322E

Solenoid valves
CP501-2

Cartridge Valves Technical Information
Solenoid Valves
2-Way Poppet
SVP08-NOR

OPERATION

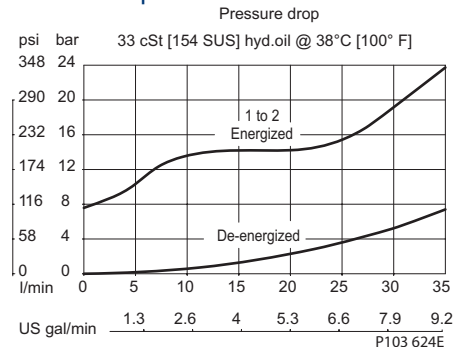
This is a normally-open, pilot-operated, poppet-type solenoid valve with free reverse flow.

SPECIFICATIONS

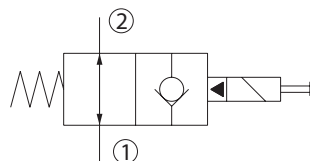
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	35 l/min [9 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.23 kg [0.51 lb]
Cavity	SDC08-2
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic

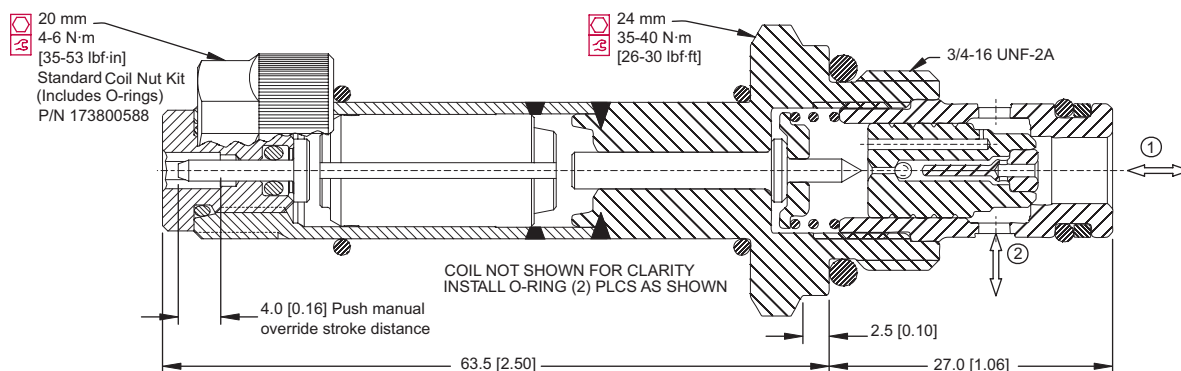


P102 387

DIMENSIONS

mm [in]

Cross-sectional view



P103 490

ORDERING INFORMATION

SVP08-NOR-12D-DN-B-F-00

- Coil voltage
- 00 = No Coil
- 12D = 12 VDC (Standard Coil)
- 24D = 24 VDC (Standard Coil)
- R12D = 12 VDC (R-Coil)
- R24D = 24 VDC (R-Coil)
- Coil termination:
- 00 = No Coil
- FL = Flying Lead
- DN = DIN 43650 *
- DE = Deutsch
- AJ = Amp Junior *
- SP = Spade *
- AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1
- * These terminations are not available on robust coil (R12D, R24D)

- Body and ports
- 00 = Cartridge only
- DG2B = Al, 1/4 BSP
- DG3B = Al, 3/8 BSP
- 4S = Al, #4 SAE
- 6S = Al, #6 SAE
- Other housings available
- Filter
- Omit = No Filter
- F = Filter 300 µm
- Seals
- B = Buna-N
- V = Viton

- Body Nomenclature
- No Body
- SDC08-2-DG-2B
- SDC08-2-DG-3B
- CP08-2-4S
- CP08-2-6S

P103 547E

Solenoid valves
SVP08-NOR

2-Way Poppet
SVP10-NOR

OPERATION

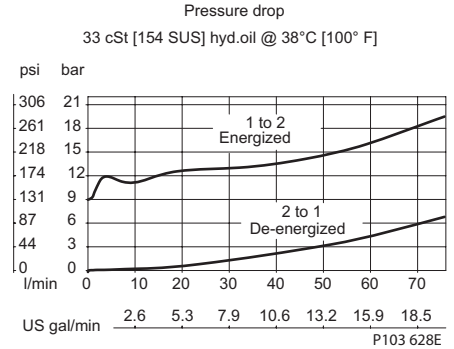
This is a normally-open, pilot-operated, poppet-type solenoid valve with free reverse flow.

SPECIFICATIONS

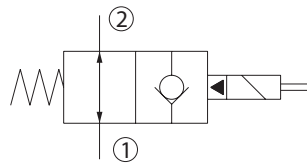
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	80 l/min [21 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.43 kg [0.95 lb]
Cavity	SDC10-2
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic

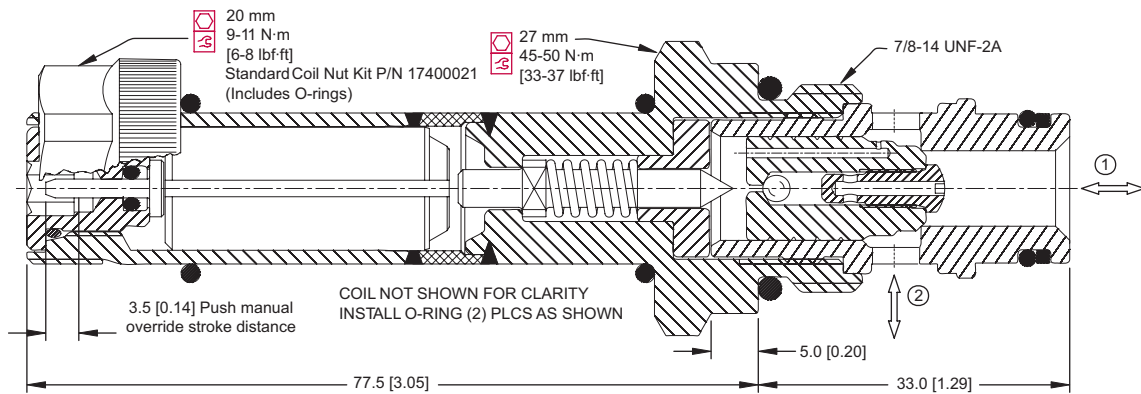


P102 387

DIMENSIONS

mm [in]

Cross-sectional view



P103 494

ORDERING INFORMATION

SVP10-NOR-12D-DN-B-F-00

Coil voltage	00 = No Coil 12D = 12 VDC (Standard Coil) 24D = 24 VDC (Standard Coil) R12D = 12 VDC (R-Coil) R24D = 24 VDC (R-Coil) Coil termination:	00 = No Coil FL = Flying Lead DN = DIN 43650 * DE = Deutsch AJ = Amp Junior * SP = Spade * AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1 * These terminations are not available on robust coil (R12D, R24D)	Body and ports	00 = Cartridge only DG3B = Al, 3/8 BSP DG4B = Al, 1/2 BSP 6S = Al, #6 SAE 8S = Al, #8 SAE Other housings available	Body Nomenclature	No Body SDC10-2-DG-3B SDC10-2-DG-4B CP10-2-6S CP10-2-8S
			Filter	Omit = No Filter F = Filter 300 µm		
			Seals	Seals kit B = Buna-N 354000719 V = Viton 354000819		

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Solenoid valves
SVP10-NOR



Cartridge Valves Technical Information

Solenoid Valves

2-Way Poppet

CP501-4



OPERATION

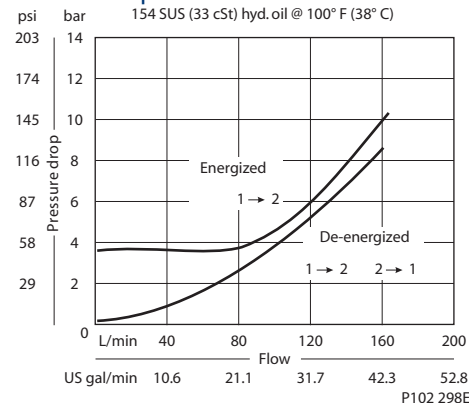
This valve is a normally open, pilot operated, poppet type solenoid valve with free reverse flow.

SPECIFICATIONS

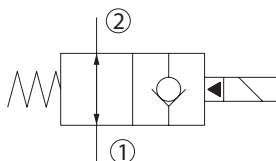
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	115 l/min [30 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.54 kg [1.19 lb]
Cavity	CP12-2
Standard Coil	D10 16 Watt
Coil nut	621468 (Std.), 622477 (Option M)

Theoretical performance



Schematic

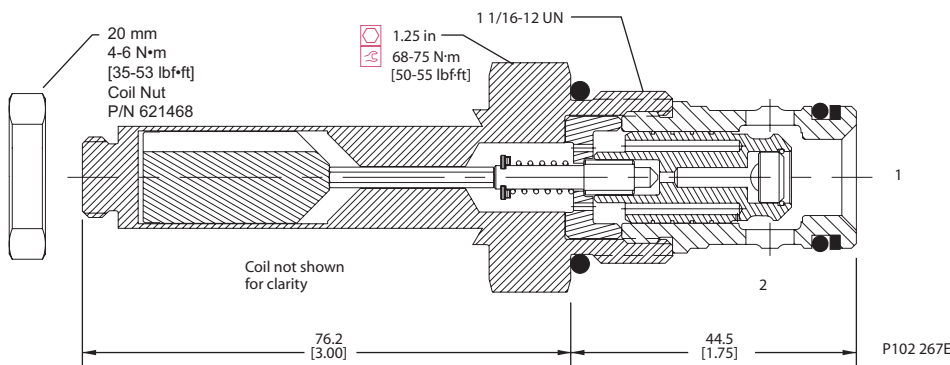


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DIMENSIONS

mm [in]

Cross-sectional view



P102 267E

ORDERING INFORMATION

Seals

B = Buna-N
V = Viton

Seal kit

120265
120264

Housing and ports

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

Housing P/N

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

Voltage

000 = No coil
12D = 12 VDC
24D = 24 VDC

Termination

0 = No connector
S = Spade
L = Lead
H = DIN 43650
DE = Deutsch
M2 = Metri-Pak 150 Type 1

P102 320E

CP501 - 4 - B - 10S - 24D - S



Cartridge Valves Technical Information

Solenoid Valves

2-Way Poppet

CP502-4



OPERATION

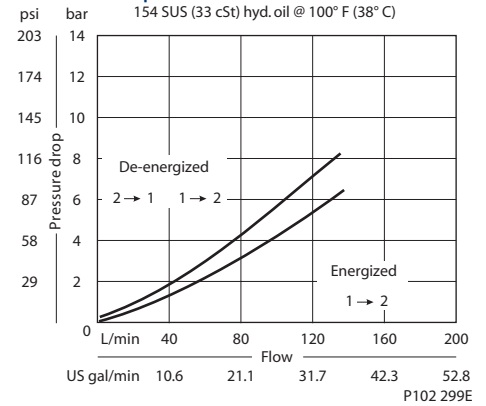
This valve is a normally open, pilot operated, poppet type solenoid.

SPECIFICATIONS

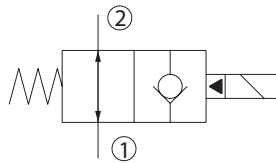
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	130 l/min [34 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.68 kg [1.50 lb]
Cavity	SDC16-2
Standard Coil	D10 16 Watt
Coil nut	621468 (Std.), 622477 (Option M)

Theoretical performance



Schematic

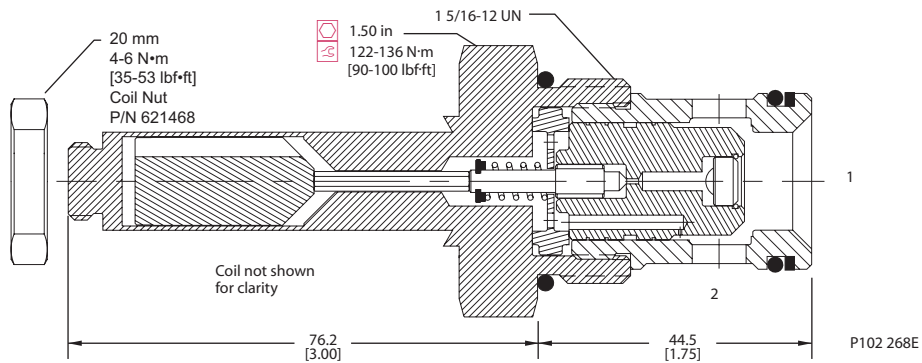


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DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

Seals

B = Buna-N
V = Viton

Seal kit

120019
120020

Housing and ports

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

Housing P/N

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

Voltage

000 = No coil
12D = 12 VDC
24D = 24 VDC

Termination

0 = No connector
S = Spade
L = Lead
H = DIN 43650
DE = Deutsch
M2 = Metri-Pak 150 Type 1

P102 317E



Cartridge Valves Technical Information

Solenoid Valves

2-Way Poppet

CP503-4



COMPLIANT

OPERATION

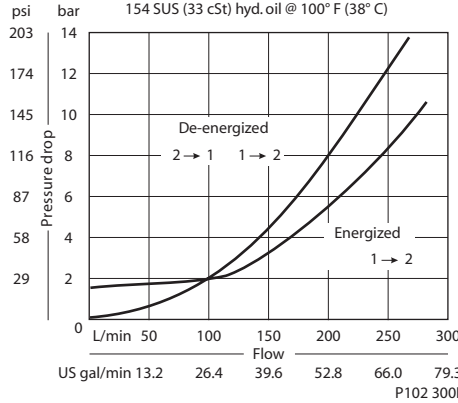
This valve is a normally open, pilot operated, poppet type solenoid.

SPECIFICATIONS

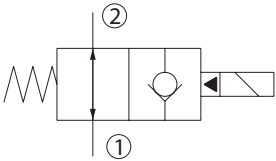
Specifications

Rated pressure	210 bar [3000 psi]
Rated flow at 7 bar [100 psi]	230 l/min [61 US gal/min]
Leakage	6 drops/min @ Rated pressure
Weight	0.91 kg [2.00 lb]
Cavity	SDC20-2
Standard Coil	D10 16 Watt
Coil nut	621468 (Std.), 622477 (Option M)

Theoretical performance



Schematic

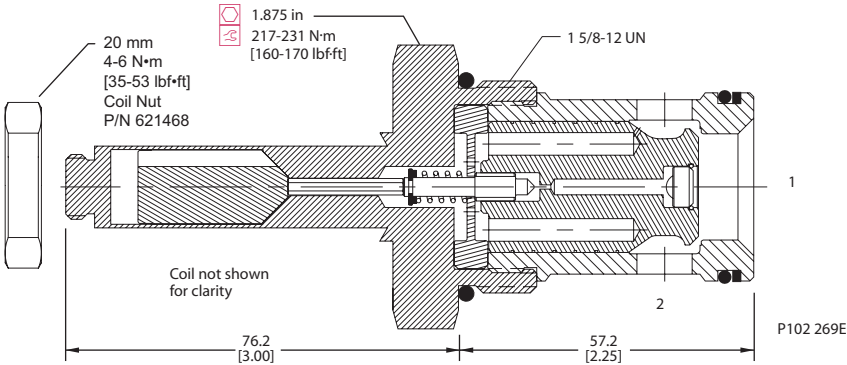


P108 262

DIMENSIONS

mm [in]

Cross-sectional view



P102 269E

ORDERING INFORMATION

CP503 - 4 - B - 16S - 24D - S

Seals

- B = Buna-N
- V = Viton

Housing and ports

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

Housing P/N

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

Voltage

- 000 = No coil
- 12D = 12 VDC
- 24D = 24 VDC

Termination

- 0 = No connector
- S = Spade
- L = Lead
- H = DIN 43650
- DE = Deutsch
- M2 = Metri-Pak 150
- Type 1 P102 345E

Solenoid valves CP503-4

2-Way Spool
SV08-22-01

OPERATION

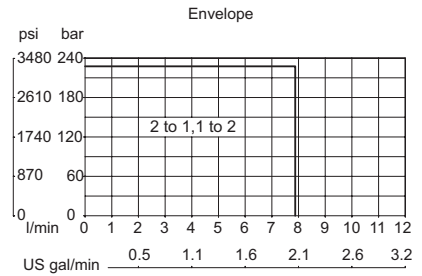
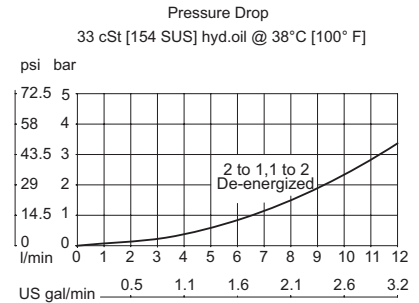
This is a normally-open, direct-acting, 2-way, 2-position, spool-type solenoid valve.

SPECIFICATIONS

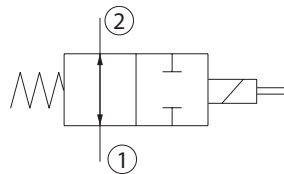
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	16 l/min [4 US gal/min]
Weight	0.29 kg [0.64 lb]
Cavity	SDC08-2
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic

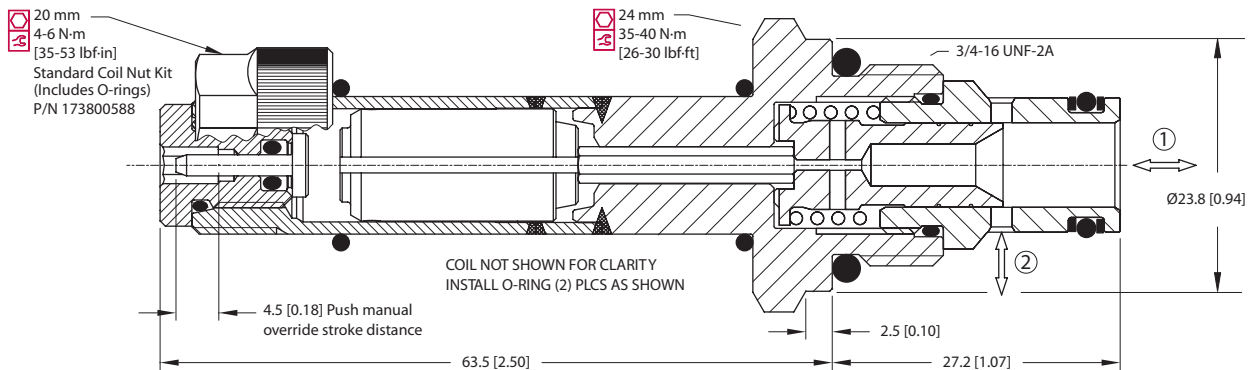


P108 284

DIMENSIONS

mm [in]

Cross-sectional view



P103 461

ORDERING INFORMATION

SV08-22-01-12D-DN-B-00

Coil voltage

- 00 = No Coil
- 12D = 12 VDC (Standard Coil)
- 24D = 24 VDC (Standard Coil)
- R12D = 12 VDC (R-Coil)
- R24D = 24 VDC (R-Coil)

Coil termination:

- 00 = No Coil
- FL = Flying Lead
- DN = DIN 43650 *
- DE = Deutsch
- AJ = Amp Junior *
- SP = Spade *
- AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports

- 00 = Cartridge only
- DG2B = Al, 1/4 BSP
- DG3B = Al, 3/8 BSP
- 4S = Al, #4 SAE
- 6S = Al, #6 SAE
- Other housings available

Seals

- B = Buna-N 354003119
- V = Viton 354003619

Body Nomenclature

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

P103 423E

* These terminations are not available on robust coil (R12D, R24D)

Cartridge Valves Technical Information

Solenoid Valves

2-Way Spool

SV10-22-01

OPERATION

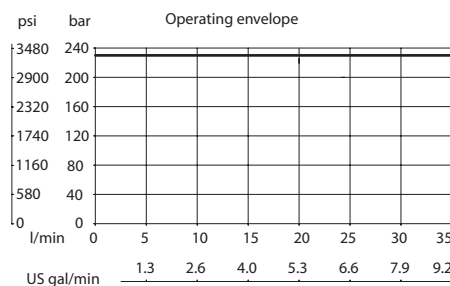
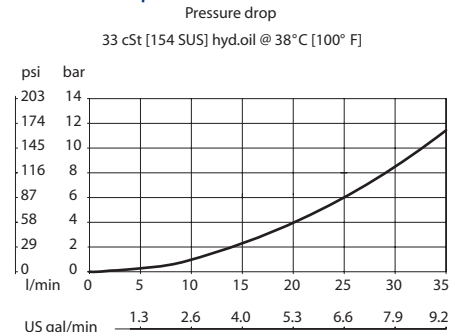
This is a normally-open, direct-acting, 2-way, 2-position, spool-type solenoid valve.

SPECIFICATIONS

Specifications

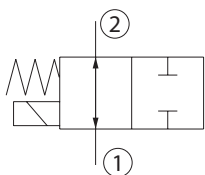
Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	27 l/min [7 US gal/min]
Weight	0.43 kg [0.95 lb]
Cavity	SDC10-2
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



P103 577E

Schematic

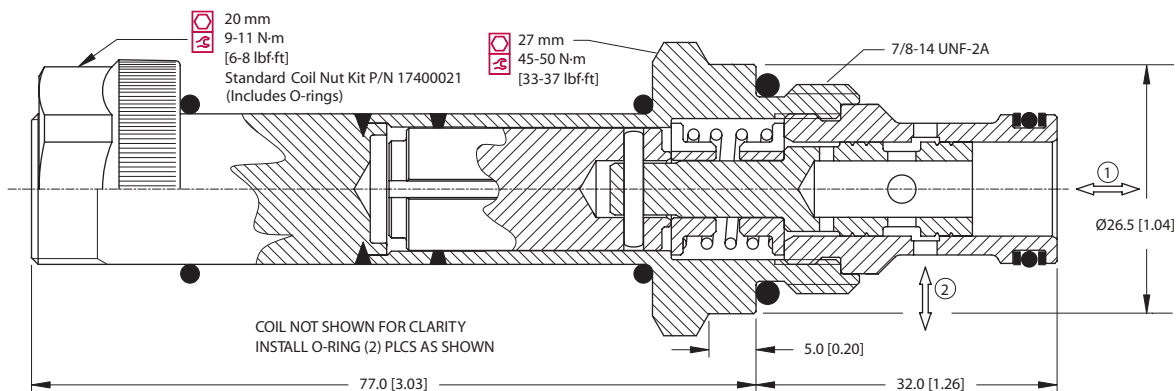


P102 389

DIMENSIONS

mm [in]

Cross-sectional view



P103 476

ORDERING INFORMATION

SV10-22-01-12D-DN-B-00

Coil voltage

- 00 = No Coil
- 12D = 12 VDC (Standard Coil)
- 24D = 24 VDC (Standard Coil)
- R12D = 12 VDC (R-Coil)
- R24D = 24 VDC (R-Coil)

Coil termination:

- 00 = No Coil
- FL = Flying Lead
- DN = DIN 43650 *
- DE = Deutsch
- AJ = Amp Junior *
- SP = Spade *
- AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports

- 00 = Cartridge only
- 6S = Al, #6 SAE
- 8S = Al, #8 SAE
- DG3B = Al, 3/8 BSP
- DG4B = Al, 1/2 BSP
- Other housings available

- | | |
|--------------|------------------|
| Seals | Seals kit |
| B = Buna-N | 354004019 |
| V = Viton | 354003419 |

Body Nomenclature

- No Body
- CP10-2-6S
- CP10-2-8S
- SDC10-2-DG3B
- SDC10-2-DG4B

P103 438E

* These terminations are not available on robust coil (R12D, R24D)

Solenoid valves
SV10-22-01

OPERATION

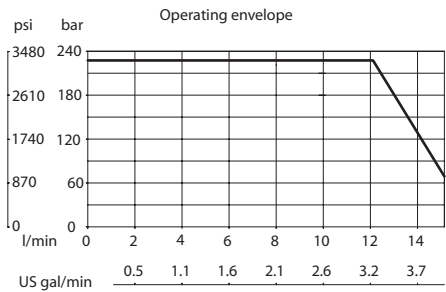
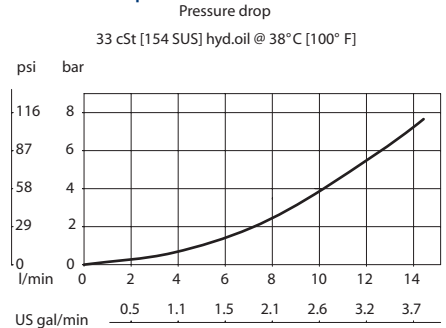
This is a normally-closed, direct-acting, 2-way, 2-position, spool-type solenoid valve.

SPECIFICATIONS

Specifications

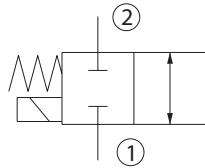
Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	14 l/min [4 US gal/min]
Weight	0.29 kg [0.64 lb]
Cavity	SDC08-2
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



P103 564E

Schematic

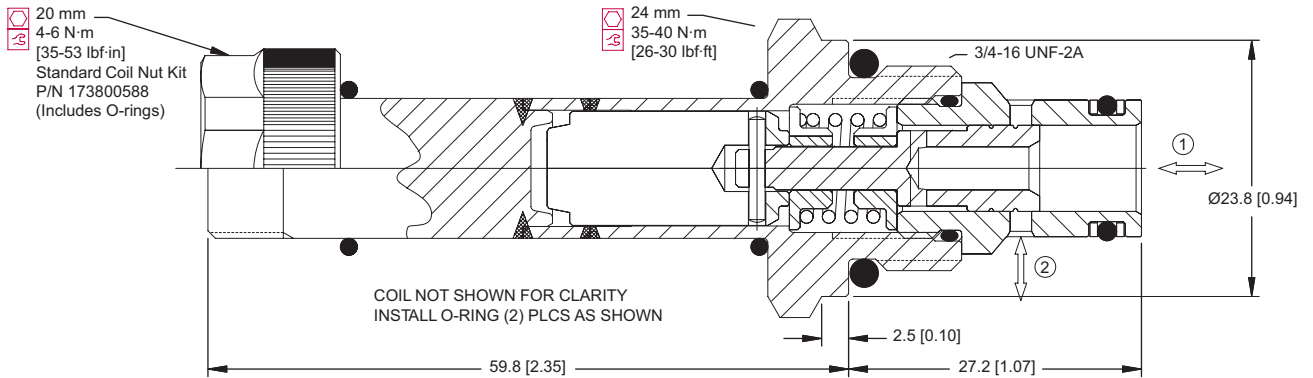


P102 388

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

SV08-22-02-12D-DN-B-00

Coil voltage
00 = No Coil
12D = 12 VDC (Standard Coil)
24D = 24 VDC (Standard Coil)
R12D = 12 VDC (R-Coil)
R24D = 24 VDC (R-Coil)
Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
00 = Cartridge only
DG2B = Al, 1/4 BSP
DG3B = Al, 3/8 BSP
4S = Al, #4 SAE
6S = Al, #6 SAE
Other housings available

Seals Seal kit
B = Buna-N 354003119
V = Viton 354003619

Body Nomenclature
No Body
SDC08-2-DG-2B
SDC08-2-DG-3B
CP08-2-4S
CP08-2-6S

P103 386E

* These terminations are not available on robust coil (R12D, R24D)

Solenoid valves
SV08-22-02

OPERATION

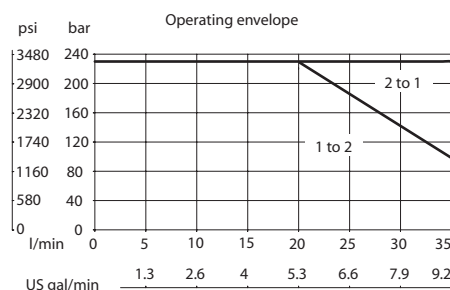
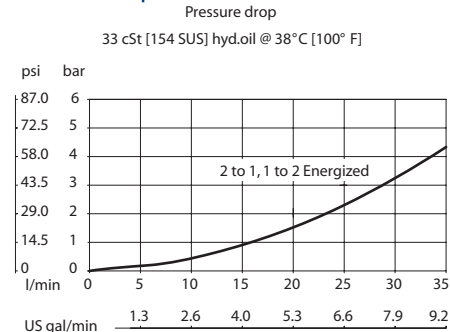
This is a normally-closed, direct-acting, 2-way, 2-position, spool-type solenoid valve.

SPECIFICATIONS

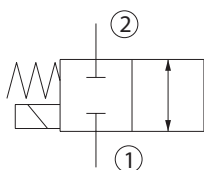
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	35 l/min [9 US gal/min]
Weight	0.43 kg [0.95 lb]
Cavity	SDC10-2
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic

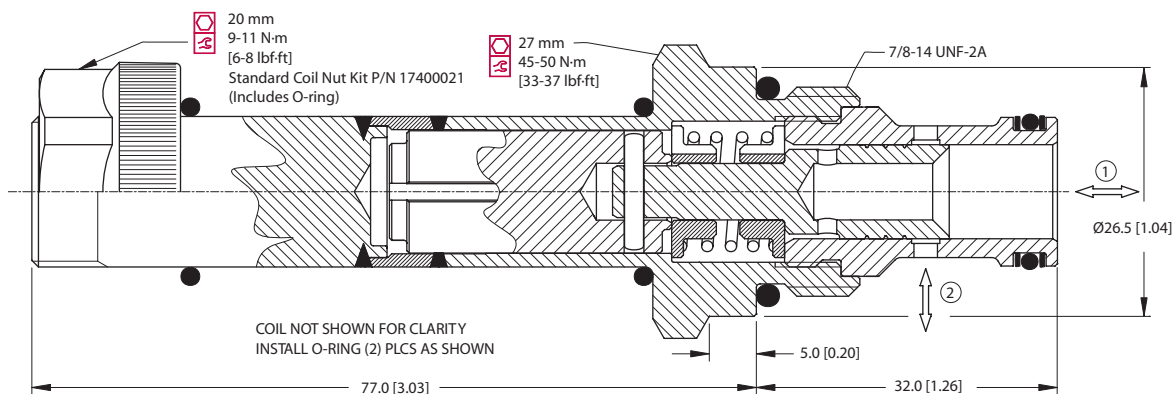


P102 388

DIMENSIONS

mm [in]

Cross-sectional view



P103 477

ORDERING INFORMATION

SV10-22-02-12D-DN-B-00

Coil voltage

- 00 = No Coil
- 12D = 12 VDC (Standard Coil)
- 24D = 24 VDC (Standard Coil)
- R12D = 12 VDC (R-Coil)
- R24D = 24 VDC (R-Coil)

Coil termination:

- 00 = No Coil
- FL = Flying Lead
- DN = DIN 43650 *
- DE = Deutsch
- AJ = Amp Junior *
- SP = Spade *
- AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports

- 00 = Cartridge only
- 6S = Al, #6 SAE
- 8S = Al, #8 SAE
- DG3B = Al, 3/8 BSP
- DG4B = Al, 1/2 BSP
- Other housings available

- Seals** **Seals kit**
- B = Buna-N 354004019
 - V = Viton 354003419

Body Nomenclature

- No Body
- CP10-2-6S
- CP10-2-8S
- SDC10-2-DG3B
- SDC10-2-DG4B

P103 439E

* These terminations are not available on robust coil (R12D, R24D)



Cartridge Valves Technical Information

Solenoid Valves

2-Way Spool

SV08-22-03



OPERATION

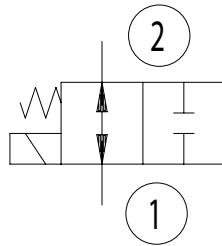
This is a direct-acting, 2-position, 2-way, spool-type solenoid valve.

SPECIFICATIONS

Specifications

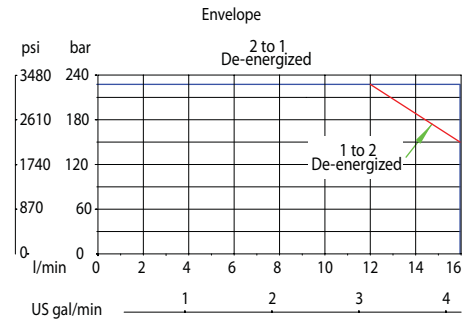
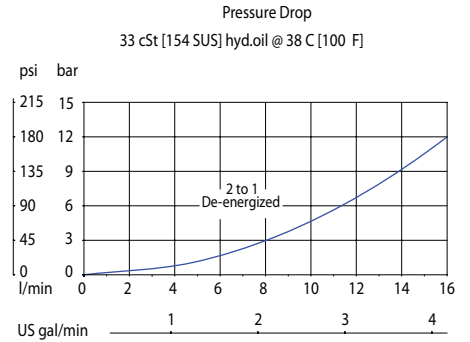
Rated pressure	230 bar [3300 psi]
Maximum flow at rated pressure	12 l/min [3.2 US gal/min]
Weight	0.29 kg [0.64 lb]
Cavity	SDC08-2
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Schematic



P108 327E

Theoretical performance

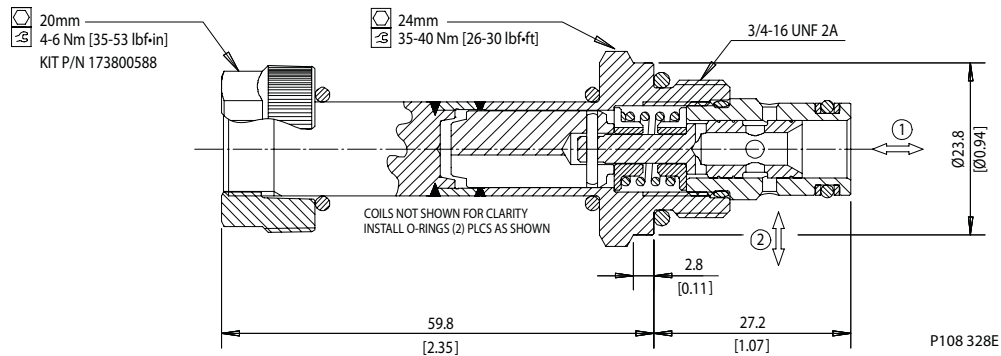


P108 329E

DIMENSIONS

mm [in]

Cross-sectional view



P108 328E

ORDERING INFORMATION

SV08-22-03-12D-DN-B-00

Coil voltage:
00 = No Coil
12D = 12VDC (Standard Coil)
24D = 24VDC (Standard Coil)
R12D = 12VDC (R-Coil)
R24D = 24VDC (R-Coil)

Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1
*These terminations are not available on robust coil (R12D,R24D)

Body and ports:
00 = Cartridge only
DG2B = Al, 1/4 BSP
DG3B = Al, 3/8 BSP
4S = Al, #4 SAE
6S = Al, #6 SAE
Other housings available

Seals: Seal kit
B = Buna-n 354003119
V = Viton 354003619

Body Nomenclature
No Body
SDC08-2-DG-2B
SDC08-2-DG-3B
CP08-2-4S
CP08-2-6S

P108 326E

Solenoid valves
SV08-22-03

Cartridge Valves Technical Information
Solenoid Valves
2-Way, 2-Position Spool
SV08-23-01

OPERATION

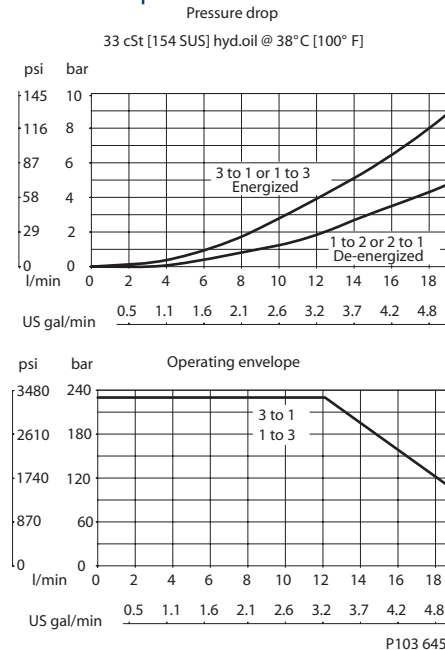
This is a direct-acting, 2-position, 3-way, spool-type solenoid valve.

SPECIFICATIONS

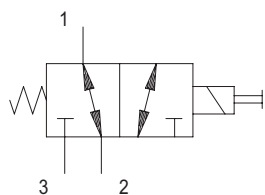
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	17 l/min [5 US gal/min]
Weight	0.31 kg [0.68 lb]
Cavity	SDC08-3
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic

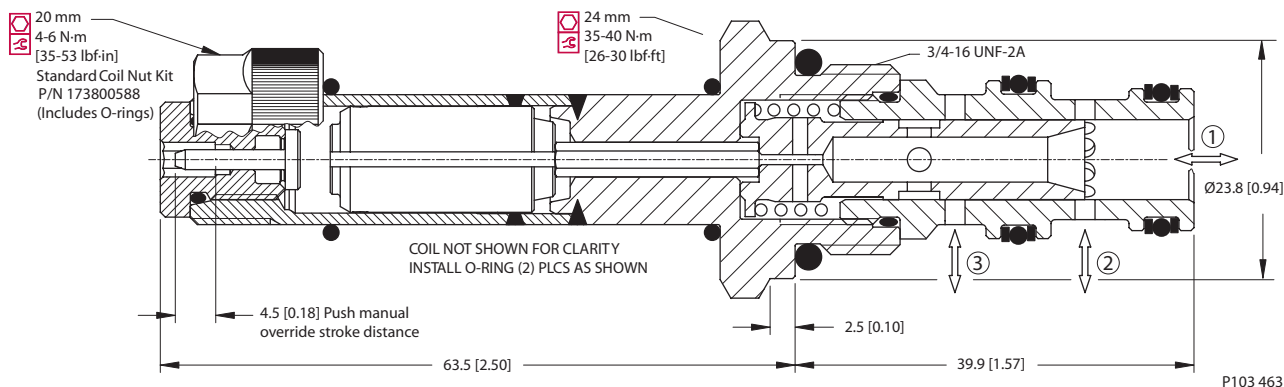


P108 332E

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

SV08-23-01-12D-DN-B-00

Coil voltage

- 00 = No Coil
- 12D = 12 VDC (Standard Coil)
- 24D = 24 VDC (Standard Coil)
- R12D = 12 VDC (R-Coil)
- R24D = 24 VDC (R-Coil)

Coil termination:

- 00 = No Coil
- FL = Flying Lead
- DN = DIN 43650 *
- DE = Deutsch
- AJ = Amp Junior *
- SP = Spade *
- AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports

- 00 = Cartridge only
- SE2B = Al, 1/4 BSP
- SE3B = Al, 3/8 BSP
- 4S = Al, #4 SAE
- 6S = Al, #6 SAE
- Other housings available

Seals

- B = Buna-N
- V = Viton

Body Nomenclature

- No Body
- SDC08-3-SE2B
- SDC08-3-SE3B
- CP08-3-4S
- CP08-3-6S

P103 425E

* These terminations are not available on robust coil (R12D, R24D)



Cartridge Valves Technical Information

Solenoid Valves

2-Way, 2-Position Spool

SV10-23-01



OPERATION

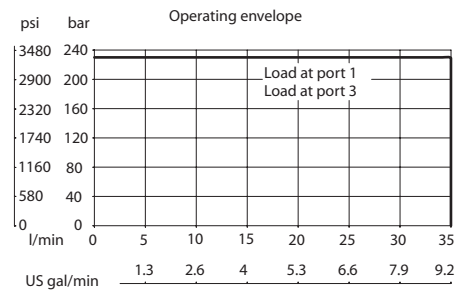
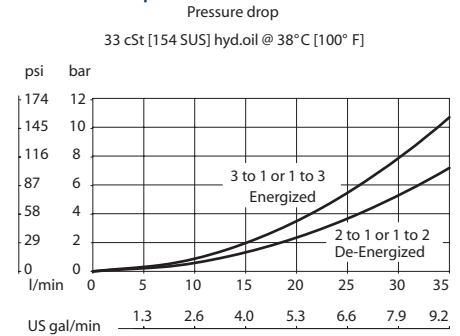
This is a direct-acting, 2-position, 3-way, spool-type solenoid valve.

SPECIFICATIONS

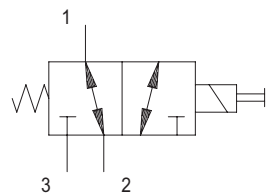
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	28 l/min [7 US gal/min]
Weight	0.42 kg [0.93 lb]
Cavity	SDC10-3
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic



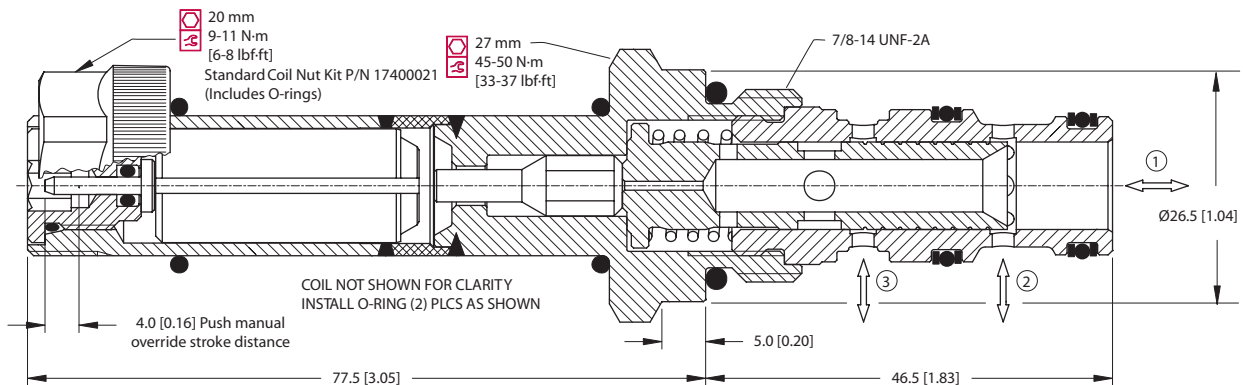
P108 332E

P103 579E

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

SV10-23-01-12D-DN-B-00

Coil voltage
00 = No Coil
12D = 12 VDC (Standard Coil)
24D = 24 VDC (Standard Coil)
R12D = 12 VDC (R-Coil)
R24D = 24 VDC (R-Coil)
Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
00 = Cartridge only
6S = Al, #6 SAE
8S = Al, #8 SAE
SE3B = Al, 3/8 BSP
SE4B = Al, 1/2 BSP
Other housings available

Seals
B = Buna-N
V = Viton

Seals kit
354004210
354003719

Body Nomenclature
No Body
CP10-3-6S
CP10-3-8S
SDC10-3-SE3B
SDC10-3-SE4B

P103 440E

* These terminations are not available on robust coil (R12D, R24D)

Solenoid valves
SV10-23-01



Cartridge Valves Technical Information

Solenoid Valves

2-Way, 2-Position Spool

CP521-21



COMPLIANT

OPERATION

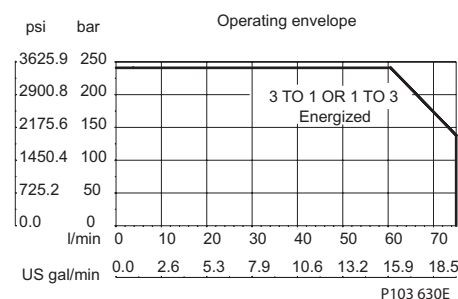
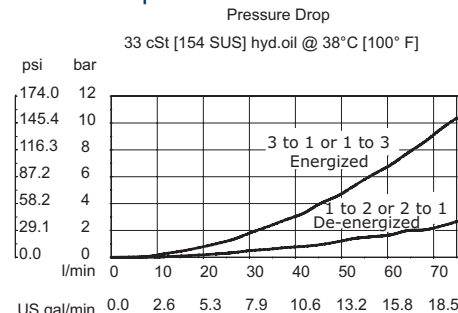
This is a direct-acting, 2-position, 3-way, spool-type solenoid valve.

SPECIFICATIONS

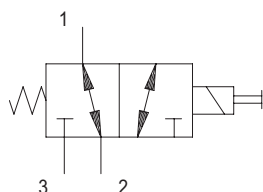
Specifications

Rated pressure	240 bar [3500 psi]
Rated flow at 7 bar [100 psi]	60 l/min [16 US gal/min]
Weight	0.80 kg [1.76 lb]
Cavity	CP12-3
Standard Coil	D14E 30 Watt
Coil nut	321567

Theoretical performance



Schematic

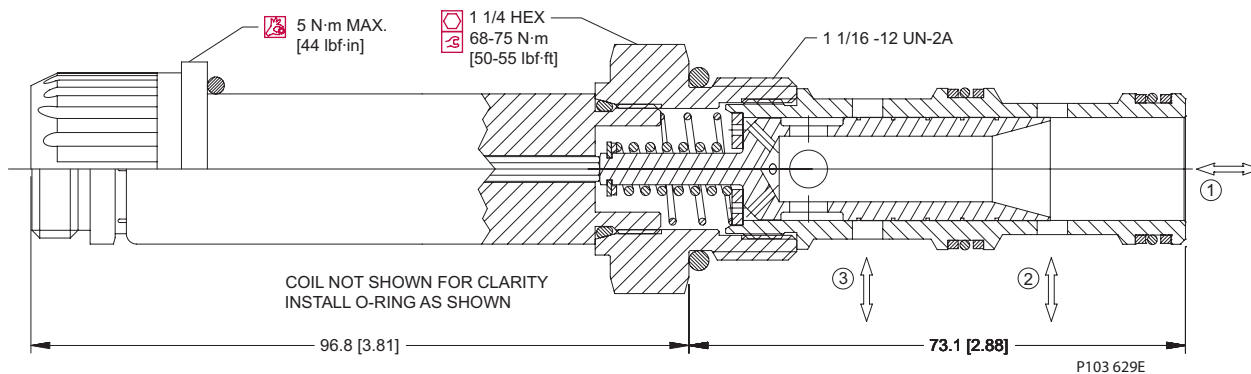


P108 332E

DIMENSIONS

mm [in]

Cross-sectional view



P103 629E

ORDERING INFORMATION

CP521-21-B-10S-24D-S

Seals

B = Buna-N
V = Viton

Housing and ports

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

Housing P/N

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

Termination

0 = No connector
S = Spade
L = Lead wire
H = DIN 43640
M2 = Metripak 150 Type 1
DE = Deutsch
AJ = Amp Junior

Coil Voltage

000 = No coil
12D = 12 VDC
24D = 24 VDC

Solenoid valves
CP521-21

P103 631E



Cartridge Valves Technical Information

Solenoid Valves

2-Way, 2-Position Spool

SV08-23-02



OPERATION

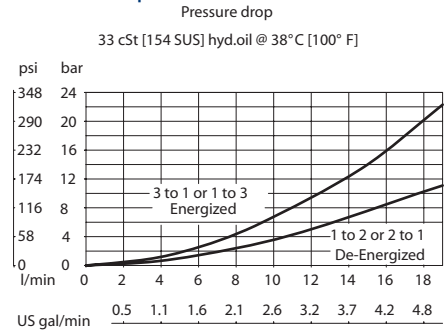
This is a direct-acting, 2-position, 3-way, spool-type solenoid valve.

SPECIFICATIONS

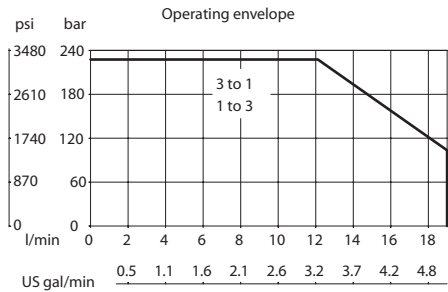
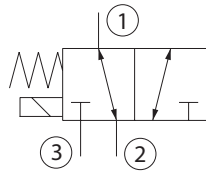
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	10 l/min [3 US gal/min]
Weight	0.31 kg [0.68 lb]
Cavity	SDC08-3
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic



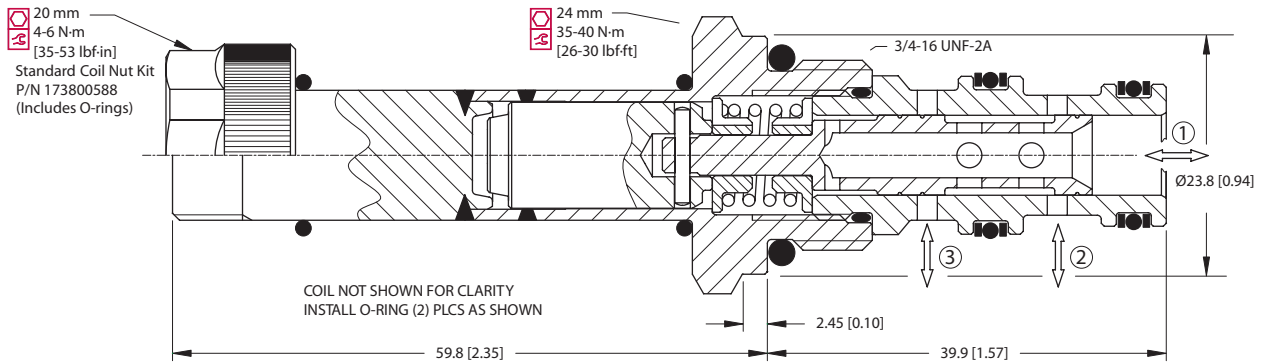
P103 565E

P108 285

DIMENSIONS

mm [in]

Cross-sectional view



P103 464

ORDERING INFORMATION

SV08-23-02-12D-DN-B-00

Coil voltage
00 = No Coil
12D = 12 VDC (Standard Coil)
24D = 24 VDC (Standard Coil)
R12D = 12 VDC (R-Coil)
R24D = 24 VDC (R-Coil)
Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
00 = Cartridge only
SE2B = Al, 1/4 BSP
SE3B = Al, 3/8 BSP
45 = Al, #4 SAE
65 = Al, #6 SAE
Other housings available

Seals
B = Buna-N
V = Viton

Seals kit
354003210
354003819

Body Nomenclature
No Body
SDC08-3-SE2B
SDC08-3-SE3B
CP08-3-45
CP08-3-65

P103 426E

* These terminations are not available on robust coil (R12D, R24D)

Solenoid valves
SV08-23-02

Cartridge Valves Technical Information
Solenoid Valves
2-Way, 2-Position Spool
SV10-23-02

OPERATION

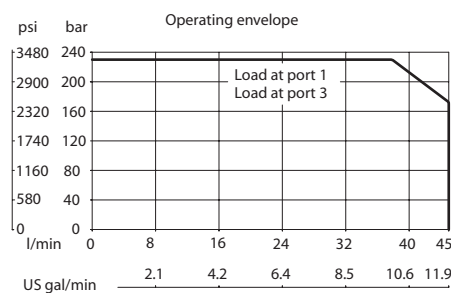
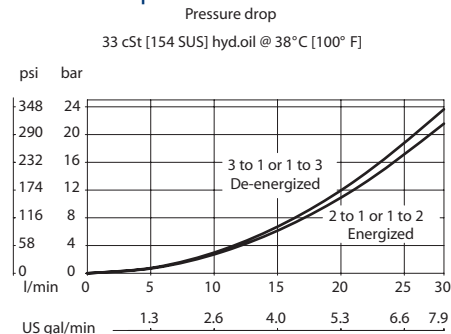
This is a direct-acting, 2-position, 3-way, spool-type solenoid valve.

SPECIFICATIONS

Specifications

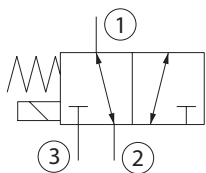
Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	15 l/min [4 US gal/min]
Weight	0.42 kg [0.93 lb]
Cavity	SDC10-3
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



P103 580E

Schematic

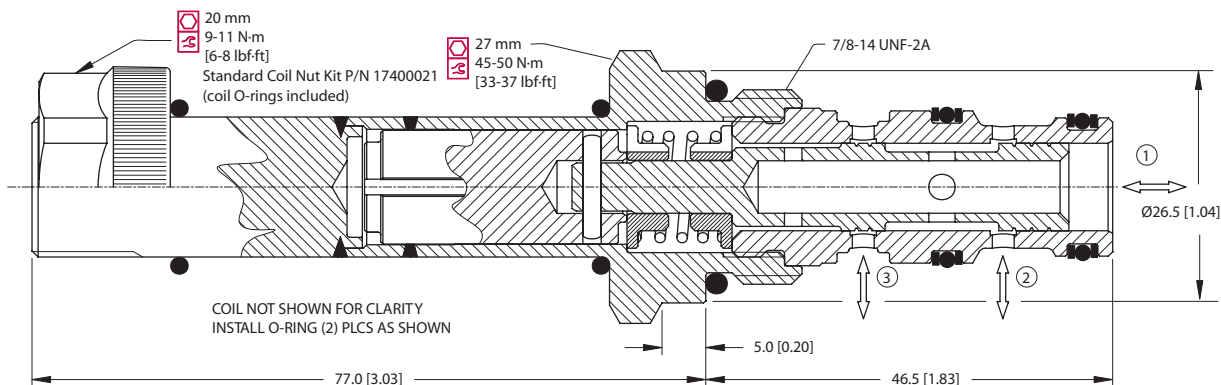


P102 720

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

SV10-23-02-12D-DN-B-00

Coil voltage

- 00 = No Coil
- 12D = 12 VDC (Standard Coil)
- 24D = 24 VDC (Standard Coil)
- R12D = 12 VDC (R-Coil)
- R24D = 24 VDC (R-Coil)

Coil termination:

- 00 = No Coil
- FL = Flying Lead
- DN = DIN 43650 *
- DE = Deutsch
- AJ = Amp Junior *
- SP = Spade *
- AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports

- 00 = Cartridge only
- 6S = Al, #6 SAE
- 8S = Al, #8 SAE
- SE3B = Al, 3/8 BSP
- SE4B = Al, 1/2 BSP
- Other housings available

- Seals** **Seals kit**
- B = Buna-N 354004210
 - V = Viton 354003719

Body Nomenclature

- No Body
- CP10-3-6S
- CP10-3-8S
- SDC10-3-SE3B
- SDC10-3-SE4B

P103 441E

* These terminations are not available on robust coil (R12D, R24D)



Cartridge Valves Technical Information

Solenoid Valves

2-Way, 2-Position Spool

SV08-23-03



OPERATION

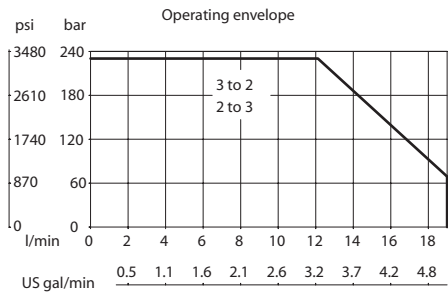
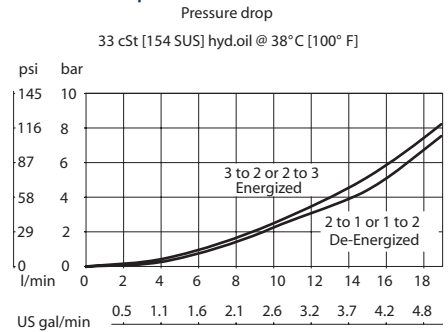
This is a direct-acting, 2-position, 3-way, spool-type solenoid valve.

SPECIFICATIONS

Specifications

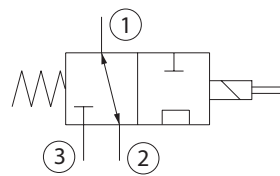
Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	18 l/min [5 US gal/min]
Weight	0.31 kg [0.68 lb]
Cavity	SDC08-3
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



P103 566E

Schematic

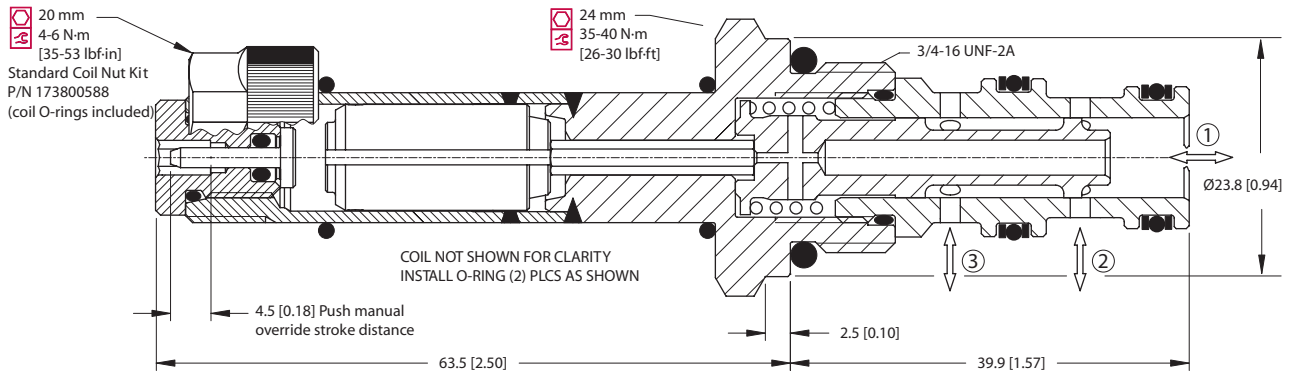


P108 264

DIMENSIONS

mm [in]

Cross-sectional view



P103 465

ORDERING INFORMATION

SV08-23-03-12D-DN-B-00

Coil voltage
 00 = No Coil
 12D = 12 VDC (Standard Coil)
 24D = 24 VDC (Standard Coil)
 R12D = 12 VDC (R-Coil)
 R24D = 24 VDC (R-Coil)
Coil termination:
 00 = No Coil
 FL = Flying Lead
 DN = DIN 43650 *
 DE = Deutsch
 AJ = Amp Junior *
 SP = Spade *
 AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
 00 = Cartridge only
 SE2B = Al, 1/4 BSP
 SE3B = Al, 3/8 BSP
 4S = Al, #4 SAE
 6S = Al, #6 SAE
 Other housings available

Seals
 B = Buna-N
 V = Viton

Seals kit
 354003210
 354003819
 P103 427E

Body Nomenclature
 No Body
 SDC08-3-SE2B
 SDC08-3-SE3B
 CP08-3-4S
 CP08-3-6S

* These terminations are not available on robust coil (R12D, R24D)

Solenoid valves
SV08-23-03

Cartridge Valves Technical Information
Solenoid Valves
2-Way, 2-Position Spool
SV08-23-04

OPERATION

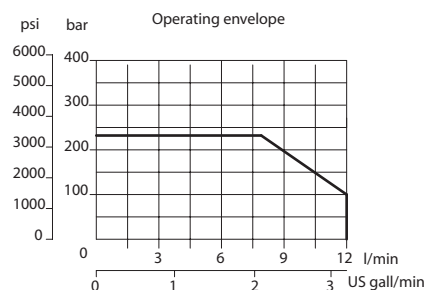
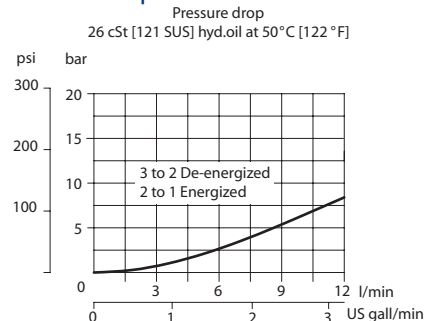
This is a direct-acting, 2-position, 3-way, spool-type solenoid valve.

SPECIFICATIONS

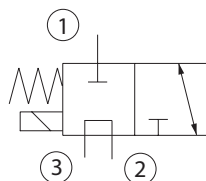
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	10 l/min [3 US gal/min]
Weight	0.31 kg [0.68 lb]
Cavity	SDC08-3
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic



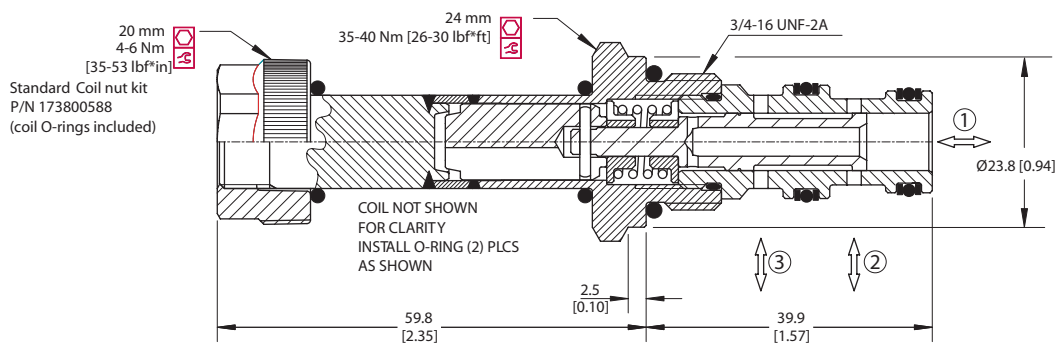
P108 265

P103 567E

DIMENSIONS

mm [in]

Cross-sectional view



P103 466

ORDERING INFORMATION

SV08-23-04-12D-DN-B-00

Coil voltage

- 00 = No Coil
- 12D = 12 VDC (Standard Coil)
- 24D = 24 VDC (Standard Coil)
- R12D = 12 VDC (R-Coil)
- R24D = 24 VDC (R-Coil)

Coil termination:

- 00 = No Coil
- FL = Flying Lead
- DN = DIN 43650 *
- DE = Deutsch
- AJ = Amp Junior *
- SP = Spade *
- AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports

- 00 = Cartridge only
- SE2B = Al, 1/4 BSP
- SE3B = Al, 1/4 BSP
- 4S = Al, #4 SAE
- 6S = Al, #6 SAE
- Other housings available

Seals

- B = Buna-N
- V = Viton

Body Nomenclature

- No Body
- SDC08-3-SE2B
- SDC08-3-SE3B
- CP08-3-4S
- CP08-3-6S

P103 428E

* These terminations are not available on robust coil (R12D, R24D)



Cartridge Valves Technical Information Solenoid Valves



2-Way, 2-Position Spool SV10-23-04

OPERATION

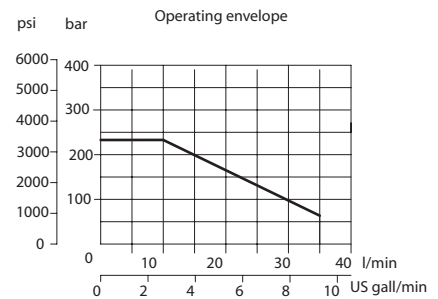
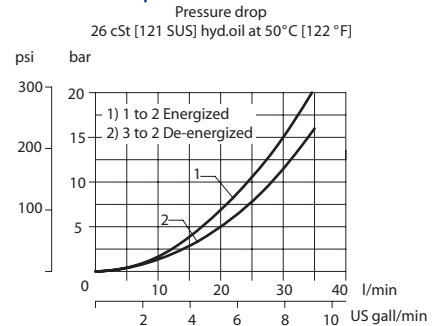
This is a direct-acting, 2-position, 3-way, spool-type solenoid valve.

SPECIFICATIONS

Specifications

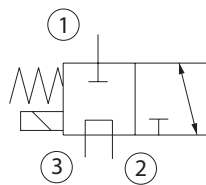
Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	20 l/min [5 US gal/min]
Weight	0.42 kg [0.93 lb]
Cavity	SDC10-3
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



P103 581E

Schematic

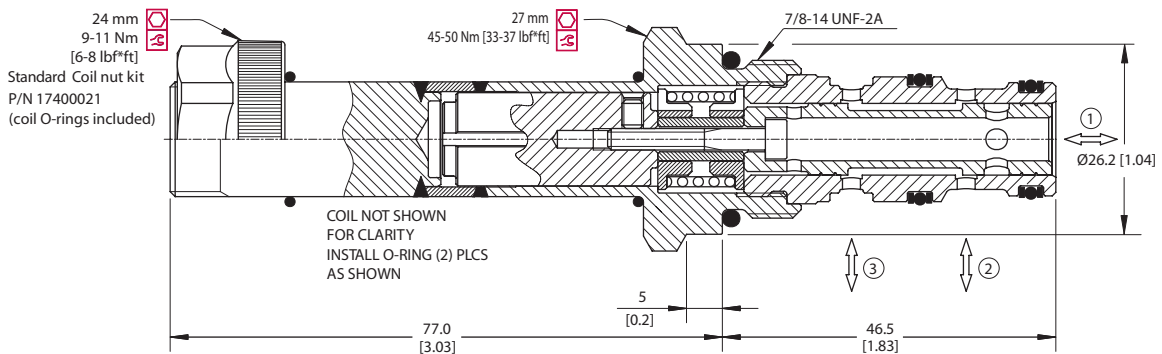


P108 265

DIMENSIONS

mm [in]

Cross-sectional view



P103 480

ORDERING INFORMATION

SV10-24-05-12D-DN-B-00

Coil voltage
00 = No Coil
12D = 12 VDC (Standard Coil)
24D = 24 VDC (Standard Coil)
R12D = 12 VDC (R-Coil)
R24D = 24 VDC (R-Coil)
Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
00 = Cartridge only
6S = Al, #6 SAE
8S = Al, #8 SAE
L3B = Al, 3/8 BSP
L4B = Al, 1/2 BSP
Other housings available

Seals
B = Buna-N
V = Viton

Seals kit
354001919
354002019

Body Nomenclature
No Body
CP10-4-6S
CP10-4-8S
SDC10-4-L3B
SDC10-4-L4B

P103 442E

* These terminations are not available on robust coil (R12D, R24D)

Solenoid valves
SV10-23-04

Cartridge Valves Technical Information
Solenoid Valves
4-Way, 2-Position Spool
SV08-24-01

OPERATION

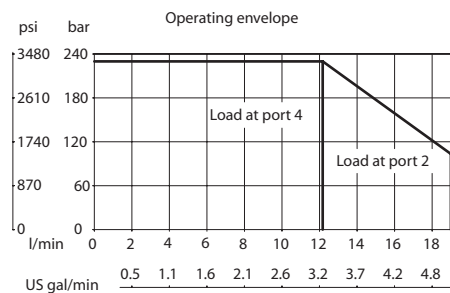
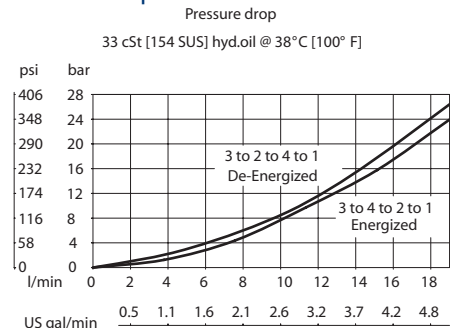
This is a direct-acting, 2-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

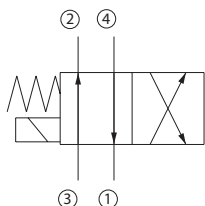
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	8 l/min [2 US gal/min]
Weight	0.32 kg [0.71 lb]
Cavity	SDC08-4
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic

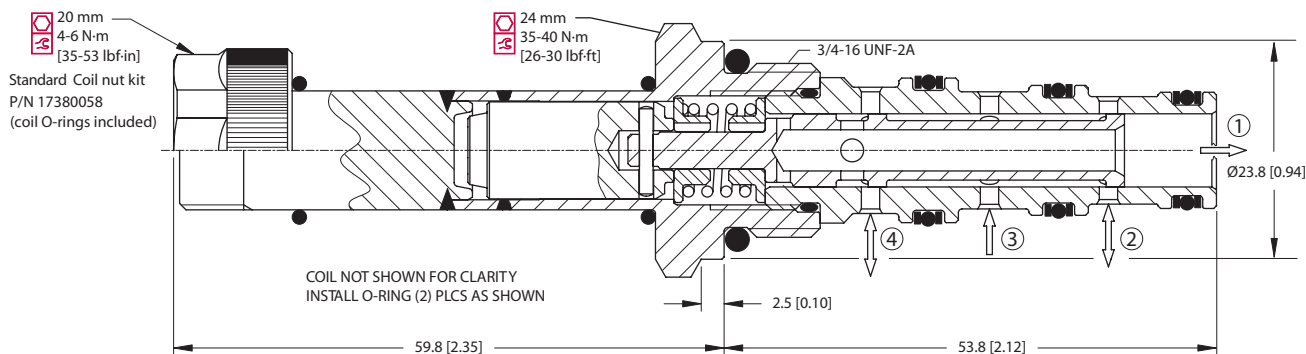


P108266

DIMENSIONS

mm [in]

Cross-sectional view



P103 467

ORDERING INFORMATION

SV08-24-01-12D-DN-B-00

Coil voltage

- 00 = No Coil
- 12D = 12 VDC (Standard Coil)
- 24D = 24 VDC (Standard Coil)
- R12D = 12 VDC (R-Coil)
- R24D = 24 VDC (R-Coil)

Coil termination:

- 00 = No Coil
- FL = Flying Lead
- DN = DIN 43650 *
- DE = Deutsch
- AJ = Amp Junior *
- SP = Spade *
- AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports

- 00 = Cartridge only
- 4S = Al, #4 SAE
- 6S = Al, #6 SAE
- L2B = Al, 1/4 BSP
- Other housings available

Seals

- B = Buna-N
- V = Viton

Body Nomenclature

- No Body
- CP08-4-4S
- CP08-4-6S
- SDC08-4-L2B

P103 429E

* These terminations are not available on robust coil (R12D, R24D)

Cartridge Valves Technical Information
Solenoid Valves
4-Way, 2-Position Spool
SV10-24-01

OPERATION

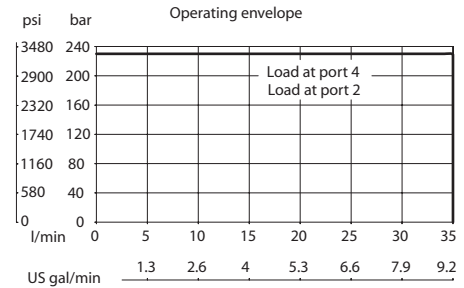
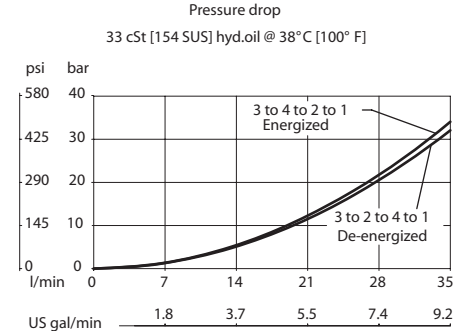
This is a direct-acting, 2-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

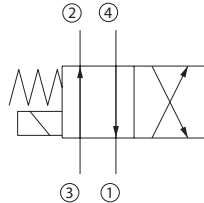
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	15 l/min [4 US gal/min]
Weight	0.45 kg [0.99 lb]
Cavity	SDC10-4
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic

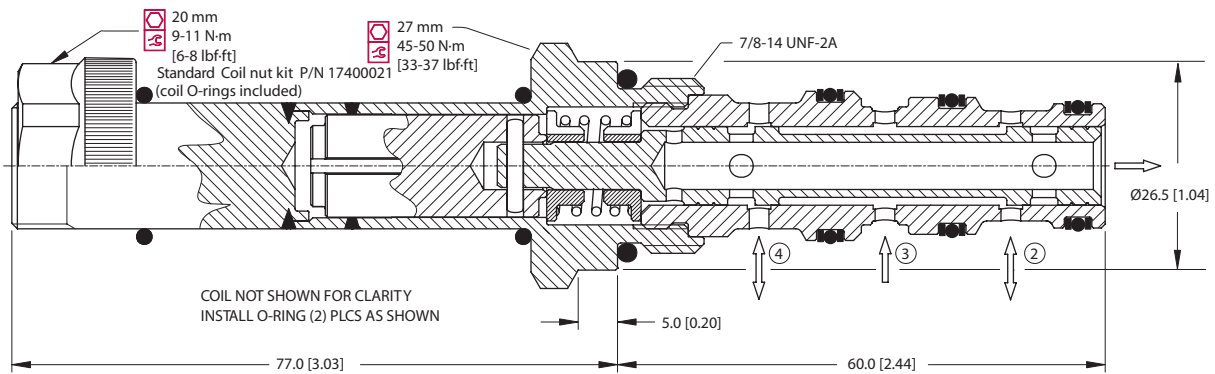


P108266

DIMENSIONS

mm [in]

Cross-sectional view



P103 484

ORDERING INFORMATION

SV10-24-01-12D-DN-B-00

Coil voltage
00 = No Coil
12D = 12 VDC (Standard Coil)
24D = 24 VDC (Standard Coil)
R12D = 12 VDC (R-Coil)
R24D = 24 VDC (R-Coil)
Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
00 = Cartridge only
6S = Al, #6 SAE
8S = Al, #8 SAE
L3B = Al, 3/8 BSP
L4B = Al, 1/2 BSP
Other housings available

Body Nomenclature
No Body
CP10-4-6S
CP10-4-8S
SDC10-4-L3B
SDC10-4-L4B

Seals **Seals kit**
B = Buna-N 354001919
V = Viton 354002019

P103 443E

* These terminations are not available on robust coil (R12D, R24D)

Solenoid valves
SV10-24-01



4-Way, 2-Position Spool
SV08-24-02

OPERATION

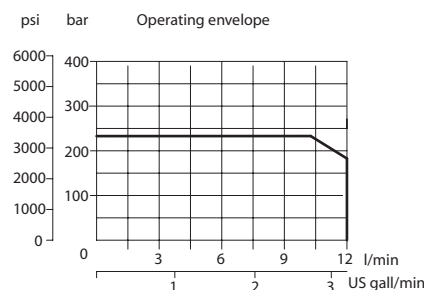
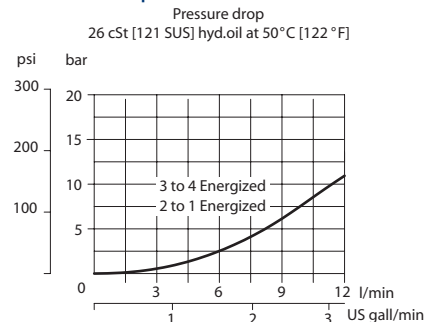
This is a direct-acting, 2-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

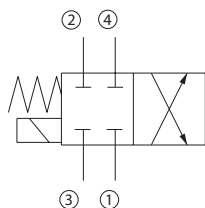
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	10 l/min [3 US gal/min]
Weight	0.31 kg [0.68 lb]
Cavity	SDC08-4
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic



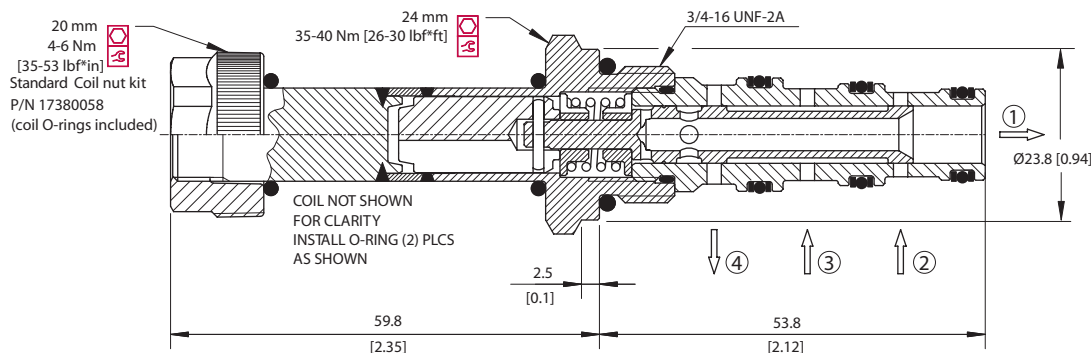
P108268

P103 570E

DIMENSIONS

mm [in]

Cross-sectional view



P103 468

ORDERING INFORMATION

SV08-24-02-12D-DN-B-00

Coil voltage
00 = No Coil
12D = 12 VDC (Standard Coil)
24D = 24 VDC (Standard Coil)
R12D = 12 VDC (R-Coil)
R24D = 24 VDC (R-Coil)

Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
00 = Cartridge only
4S = Al, #4 SAE
6S = Al, #6 SAE
L2B = Al, 1/4 BSP
Other housings available

Seals
B = Buna-N
V = Viton

Seals kit
354003319
354003919

Body Nomenclature
No Body
CP08-4-4S
CP08-4-6S
SDC08-4-L2B

P103 430E

* These terminations are not available on robust coil (R12D, R24D)

Solenoid valves
SV08-24-02



Cartridge Valves Technical Information

Solenoid Valves

4-Way, 2-Position Spool

SV08-24-04



OPERATION

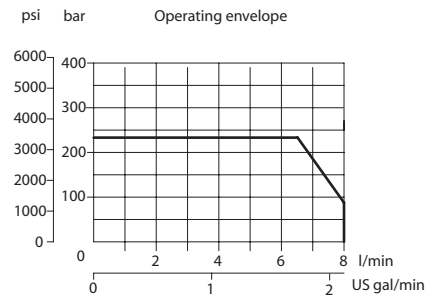
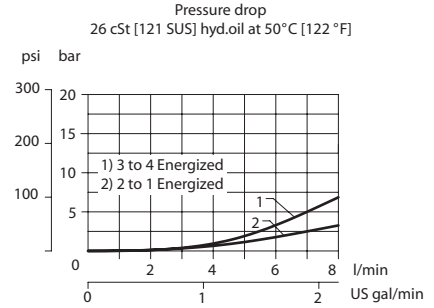
This is a direct-acting, 2-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

Specifications

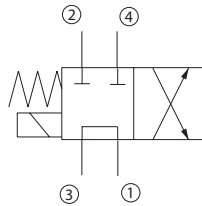
Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	8 l/min [2 US gal/min]
Weight	0.31 kg [0.68 lb]
Cavity	SDC08-4
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



P103 571E

Schematic

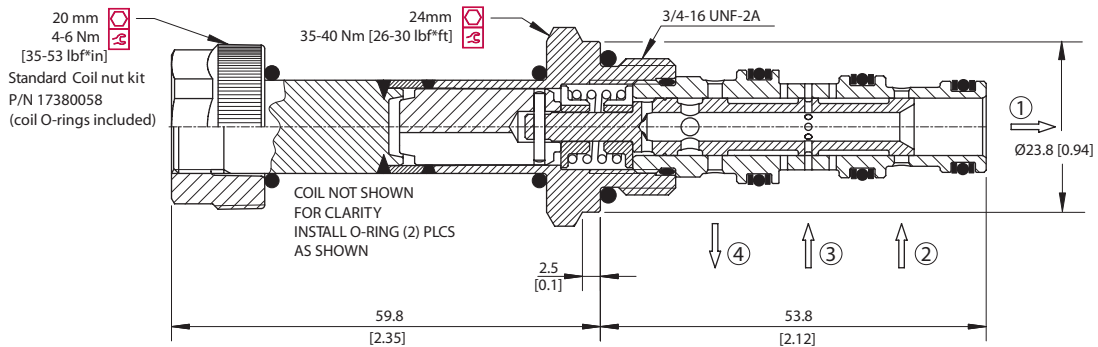


P108271

DIMENSIONS

mm [in]

Cross-sectional view



P103 470

ORDERING INFORMATION

SV10-24-12-12D-DN-B-00

Coil voltage
00 = No Coil
12D = 12 VDC (Standard Coil)
24D = 24 VDC (Standard Coil)
R12D = 12 VDC (R-Coil)
R24D = 24 VDC (R-Coil)

Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
00 = Cartridge only
4S = Al, #4 SAE
6S = Al, #6 SAE
L2B = Al, 1/4 BSP
Other housings available

Seals
B = Buna-N
V = Viton

Body Nomenclature
No Body
CP08-4-4S
CP08-4-6S
SDC08-4-L2B

P103 432E

* These terminations are not available on robust coil (R12D, R24D)

Cartridge Valves Technical Information
Solenoid Valves
4-Way, 2-Position Spool
SV10-24-12

OPERATION

This is a direct-acting, 2-position, 4-way, spool-type solenoid valve.

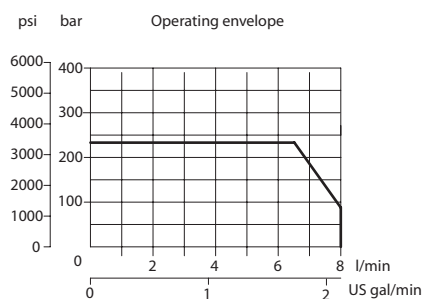
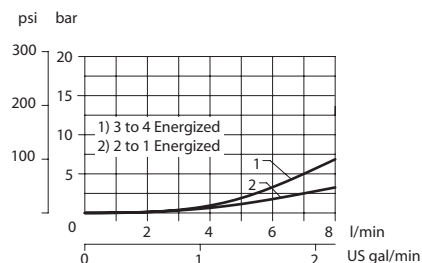
SPECIFICATIONS

Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	8 l/min [2 US gal/min]
Weight	0.31 kg [0.68 lb]
Cavity	SDC08-4
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

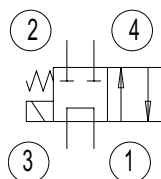
Theoretical performance

Pressure drop
26 cSt [121 SUS] hyd.oil at 50°C [122 °F]



P103 571E

Schematic

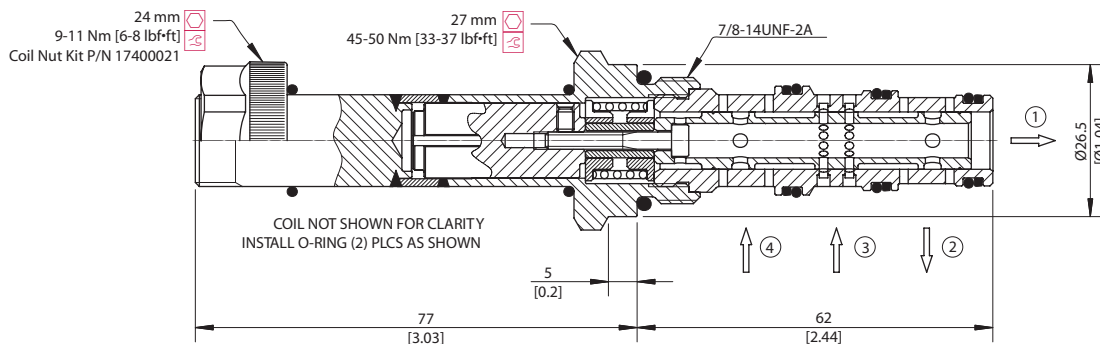


P108 393E

DIMENSIONS

mm [in]

Cross-sectional view



P103 552

ORDERING INFORMATION

SV10-24-12-12D-DN-B-00

Coil voltage

- 00 = No Coil
- 12D = 12 VDC (Standard Coil)
- 24D = 24 VDC (Standard Coil)
- R12D = 12 VDC (R-Coil)
- R24D = 24 VDC (R-Coil)

Coil termination:

- 00 = No Coil
- FL = Flying Lead
- DN = DIN 43650 *
- DE = Deutsch
- AJ = Amp Junior *
- SP = Spade *
- AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports

- 00 = Cartridge only
- 4S = AL, #4 SAE
- 6S = AL, #6 SAE
- L2B = AL, 1/4 BSP
- Other housings available

Seals

- B = Buna-N 354003319
- V = Viton 354003419

Body Nomenclature

- No Body
- CP08-4-4S
- CP08-4-6S
- SDC08-4-L2B

P103 432E

* These terminations are not available on robust coil (R12D, R24D)



Cartridge Valves Technical Information

Solenoid Valves

4-Way, 2-Position Spool

SV10-24-05



OPERATION

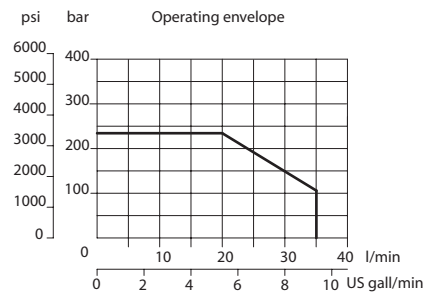
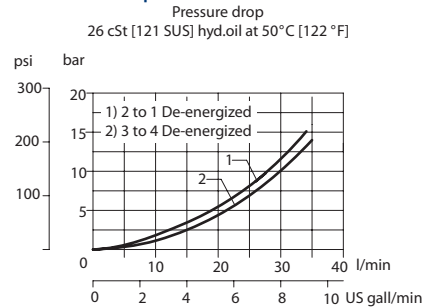
This is a direct-acting, 2-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

Specifications

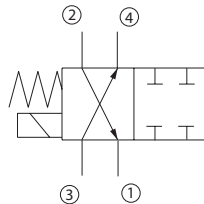
Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	25 l/min [7 US gal/min]
Weight	0.45 kg [0.99 lb]
Cavity	SDC10-4
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



P103 583E

Schematic

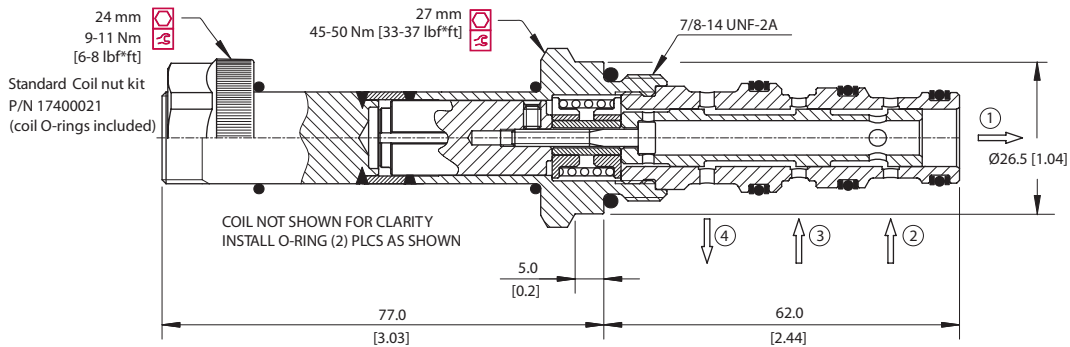


P108270

DIMENSIONS

mm [in]

Cross-sectional view



P103 481

ORDERING INFORMATION

SV10-24-05-12D-DN-B-00

Coil voltage
 00 = No Coil
 12D = 12 VDC (Standard Coil)
 24D = 24 VDC (Standard Coil)
 R12D = 12 VDC (R-Coil)
 R24D = 24 VDC (R-Coil)
Coil termination:
 00 = No Coil
 FL = Flying Lead
 DN = DIN 43650 *
 DE = Deutsch
 AJ = Amp Junior *
 SP = Spade *
 AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
 00 = Cartridge only
 6S = Al, #6 SAE
 8S = Al, #8 SAE
 L3B = Al, 3/8 BSP
 L4B = Al, 1/2 BSP
 Other housings available

Seals
 B = Buna-N
 V = Viton

Seals kit
 354001919
 354002019

Body Nomenclature
 No Body
 CP10-4-6S
 CP10-4-8S
 SDC10-4-L3B
 SDC10-4-L4B

P103444E

* These terminations are not available on robust coil (R12D, R24D)

Cartridge Valves Technical Information
Solenoid Valves
4-Way, 2-Position Spool
SV10-24-07

OPERATION

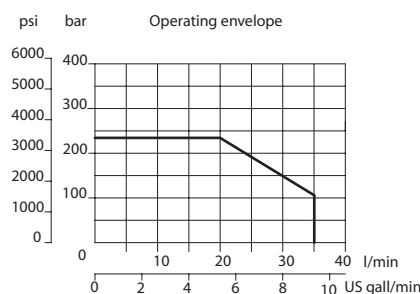
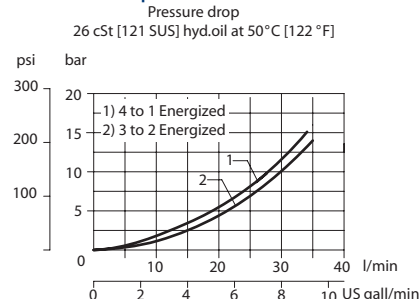
This is a direct-acting, 2-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

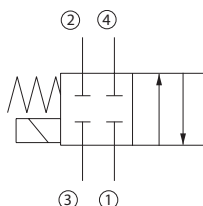
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at bar [psi]	24 l/min [6 US gal/min]
Weight	0.45 kg [0.99 lb]
Cavity	SDC10-4
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic



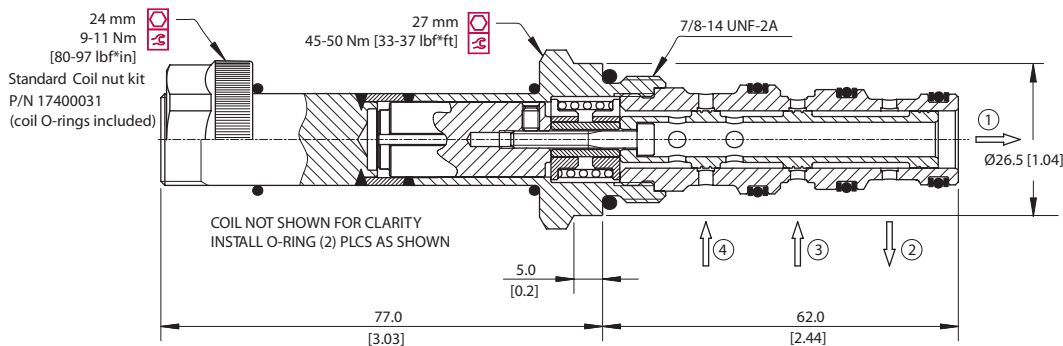
P108273

P103 585E

DIMENSIONS

mm [in]

Cross-sectional view



P103 483

ORDERING INFORMATION

SV10-24-02-12D-DN-B-00

Coil voltage

- 00 = No Coil
- 12D = 12 VDC (Standard Coil)
- 24D = 24 VDC (Standard Coil)
- R12D = 12 VDC (R-Coil)
- R24D = 24 VDC (R-Coil)

Coil termination:

- 00 = No Coil
- FL = Flying Lead
- DN = DIN 43650 *
- DE = Deutsch
- AJ = Amp Junior *
- SP = Spade *
- AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports

- 00 = Cartridge only
- 6S = Al, #6 SAE
- 8S = Al, #8 SAE
- L3B = Al, 3/8 BSP
- L4B = Al, 1/2 BSP
- Other housings available

Seals

- B = Buna-N
- V = Viton

Seals kit

- 354001919
- 354002019

Body Nomenclature

- No Body
- CP10-4-6S
- CP10-4-8S
- SDC10-4-L3B
- SDC10-4-L4B

P103 446E

* These terminations are not available on robust coil (R12D, R24D)



Cartridge Valves Technical Information

Solenoid Valves

4-Way, 2-Position Spool

SV08-24-08



OPERATION

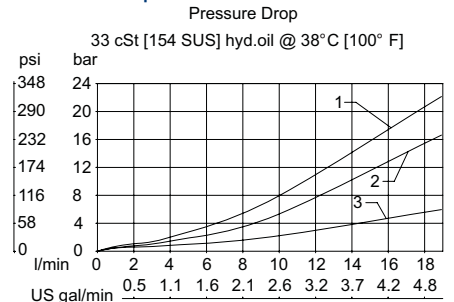
This is a direct-acting, 2-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

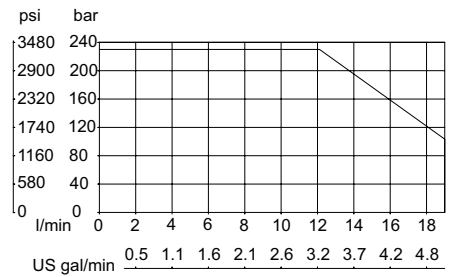
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at bar [psi]	24 l/min [6 US gal/min]
Weight	0.45 kg [0.99 lb]
Cavity	SDC08-4
Standard Coil	M16 20 Watt
Robust Coil	R16 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance

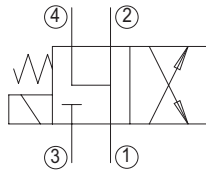


Envelope



P108 yyyE

Schematic

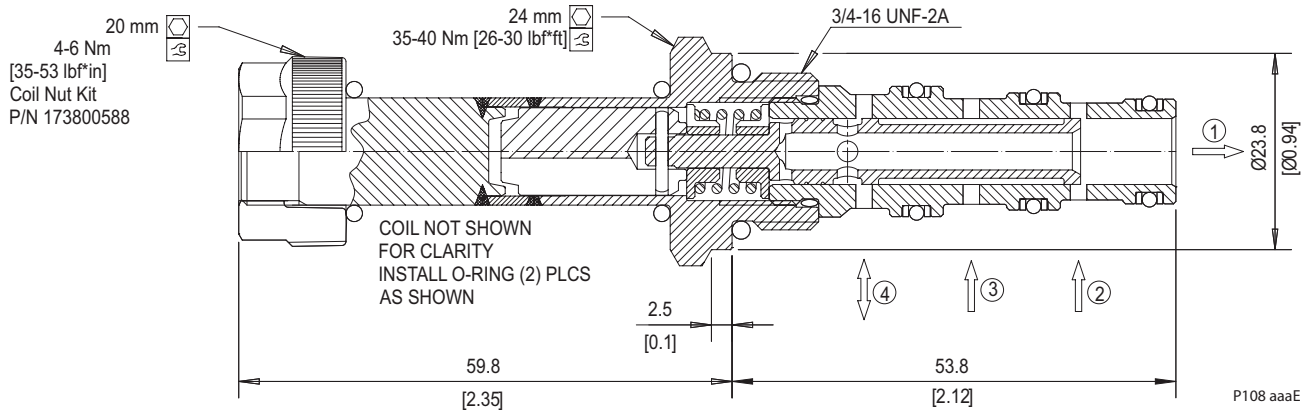


P108 334E

DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

SV08-24-08-12D - DN - B-00

Coil voltage
00 = No Coil
12D = 12 VDC (Standard Coil)
24D = 24 VDC (Standard Coil)
R12D = 12 VDC (R-Coil)
R24D = 24 VDC (R-Coil)
Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
00 = Cartridge only
4S = Al, #4 SAE
6S = Al, #6 SAE
L2B = Al, 1/4 BSP
Other housings available

Body Nomenclature
No Body
CP08-4-4S
CP08-4-6S
SDC08-4-L2B

Seals Seals kit
B = Buna-N 354003319
V = Viton 354003919

* These terminations are not available on robust coil (R12D, R24D)

P108 zzzE

Solenoid valves
SV08-24-08



Cartridge Valves Technical Information

Solenoid Valves

4-Way, 2-Position Spool

CP531-21



COMPLIANT

OPERATION

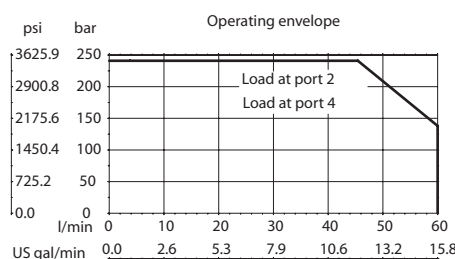
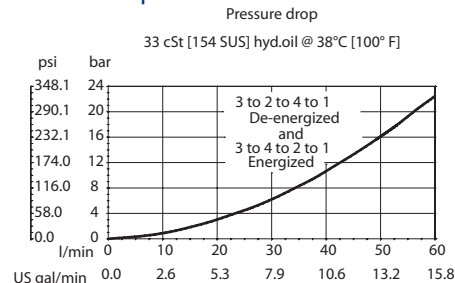
This is a direct-acting, 2-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

Specifications

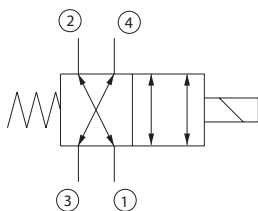
Rated pressure	240 bar [3500 psi]
Rated flow at 13 bar [189 psi]	32 l/min [8 US gal/min]
Weight	0.82 kg [1.81 lb]
Cavity	CP12-4
Standard Coil	D14E 30 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



P103 634E

Schematic

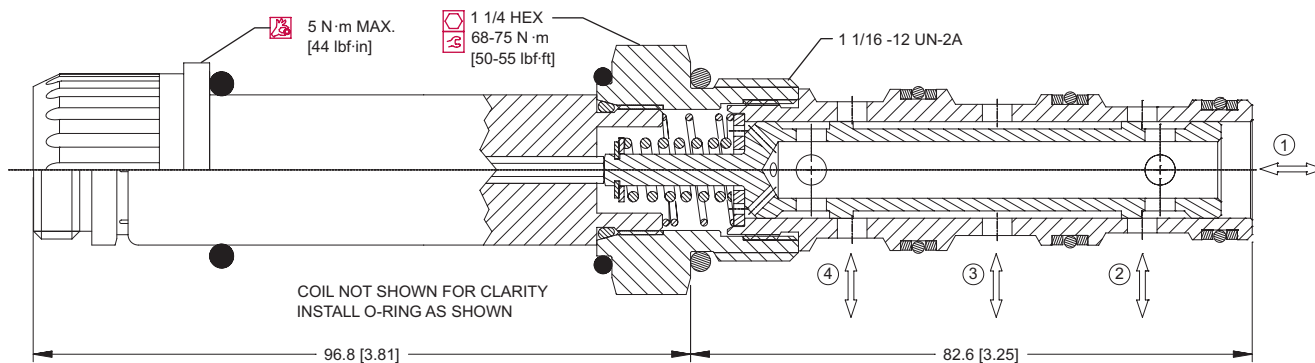


P108267

DIMENSIONS

mm [in]

Cross-sectional view



P103 632E

ORDERING INFORMATION

CP531-21-B-10S-24D-S

Seals

B = Buna-N
V = Viton

Seal kit
120262
120263

Housing and ports

0 = No Housing
3B = AL, 3/8 BSP
4B = AL, 1/2 BSP
10S = AL, #10 SAE
12S = AL, #12 SAE
Other housings available

Housing P/N

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

Termination

0 = No connector
S = Spade
L = Lead wire
H = DIN 43650
M2 = Metripak 150, Type 1
DE = Deutsch
AJ = Amp Junior

Coil Voltage

000 = No coil
12D = 12 VDC
24D = 24 VDC

P103 633E

Solenoid valves
CP531-21



Cartridge Valves Technical Information

Solenoid Valves

4-Way, 2-Position Spool

SV10-24-13



OPERATION

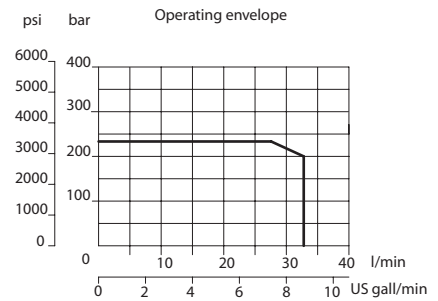
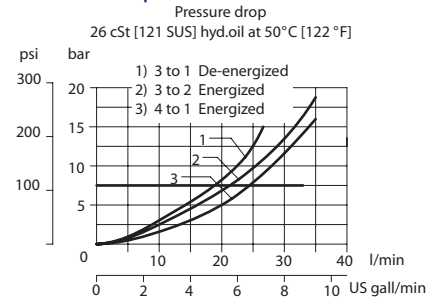
This is a direct-acting, 2-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

Specifications

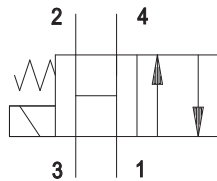
Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	21 l/min [6 US gal/min]
Weight	0.45 kg [0.99 lb]
Cavity	SDC10-4
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



P103 587E

Schematic

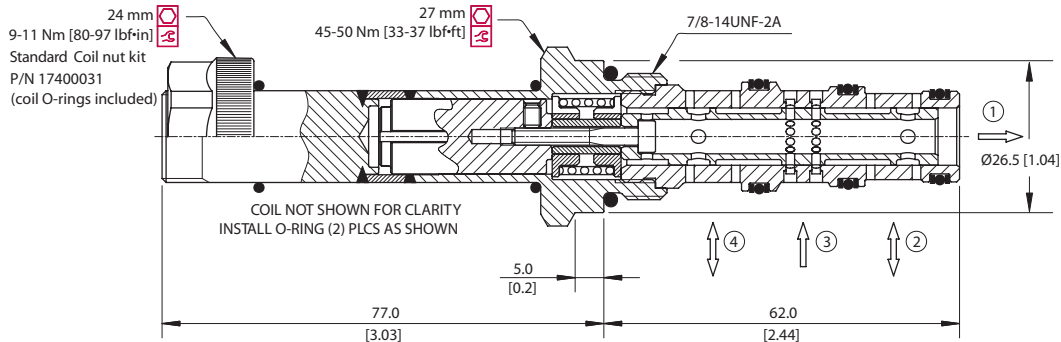


P108 333E

DIMENSIONS

mm [in]

Cross-sectional view



P103 553

ORDERING INFORMATION

SV10-24-13-12D-DN-B-00

Coil voltage
 00 = No Coil
 12D = 12 VDC (Standard Coil)
 24D = 24 VDC (Standard Coil)
 R12D = 12 VDC (R-Coil)
 R24D = 24 VDC (R-Coil)
Coil termination:
 00 = No Coil
 FL = Flying Lead
 DN = DIN 43650 *
 DE = Deutsch
 AJ = Amp Junior *
 SP = Spade *
 AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
 00 = Cartridge only
 6S = Al, #6 SAE
 8S = Al, #8 SAE
 L3B = Al, 3/8 BSP
 L4B = Al, 1/2 BSP
 Other housings available
Seals
 B = Buna-N 354001919
 V = Viton 354002019

Body Nomenclature
 No Body
 CP10-4-6S
 CP10-4-8S
 SDC10-4-L3B
 SDC10-4-L4B

P103 448E

* These terminations are not available on robust coil (R12D, R24D)

Solenoid valves
SV10-24-13



4-Way, 3-Position Spool
SV08-34-02

OPERATION

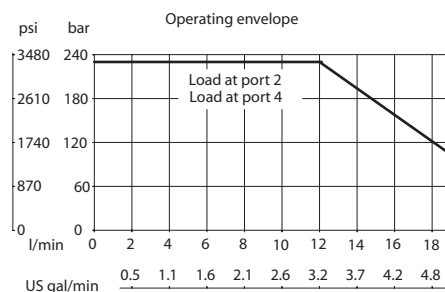
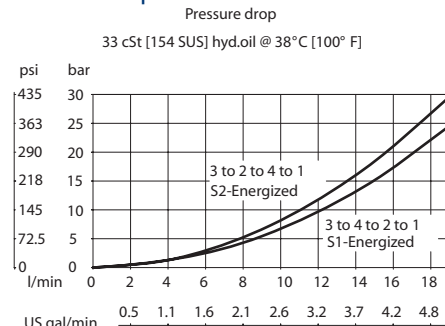
This is a direct-acting, 3-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

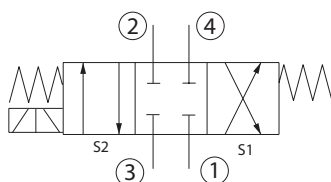
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	10 l/min [3 US gal/min]
Weight	0.55 kg [1.21 lb]
Cavity	SDC08-4
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic

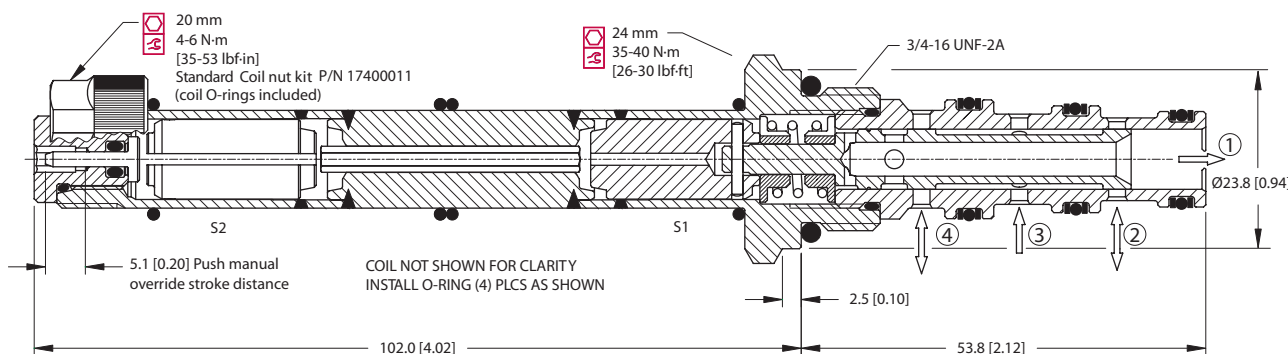


P108279

DIMENSIONS

mm [in]

Cross-sectional view



P103 472

ORDERING INFORMATION

SV08-34-02-12D-DN-B-00

Coil voltage
00 = No Coil
12D = 12 VDC (Standard Coil)
24D = 24 VDC (Standard Coil)
R12D = 12 VDC (R-Coil)
R24D = 24 VDC (R-Coil)

Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
00 = Cartridge only
4S = Al, #4 SAE
6S = Al, #6 SAE
L2B = Al, 1/4 BSP
Other housings available

Seals
B = Buna-N
V = Viton

Body Nomenclature
No Body
CP08-4-4S
CP08-4-6S
SDC08-4-L2B

Seals kit
354003319
354003919
P103 434E

* These terminations are not available on robust coil (R12D, R24D)

Solenoid valves
SV08-34-02



Cartridge Valves Technical Information

Solenoid Valves

4-Way, 3-Position Spool

SV10-34-02



OPERATION

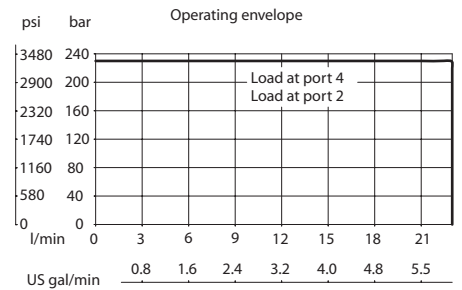
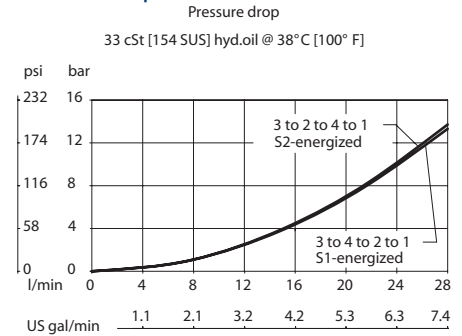
This is a direct-acting, 3-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

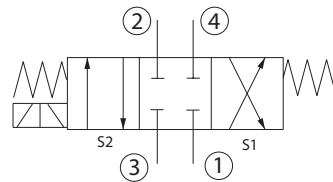
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	20 l/min [5 US gal/min]
Weight	0.81 kg [1.79 lb]
Cavity	SDC10-4
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic

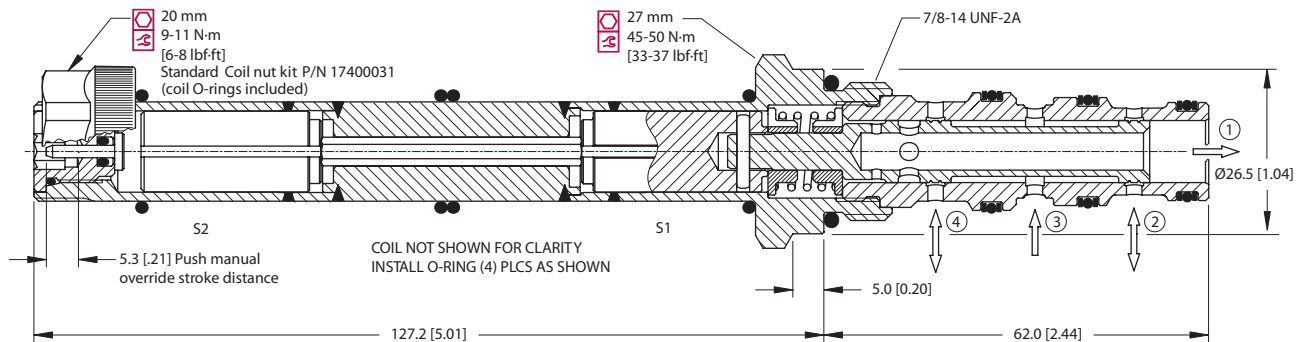


P108279

DIMENSIONS

mm [in]

Cross-sectional view



P103 554

ORDERING INFORMATION

SV10-34-02-12D-DN-B-00

Coil voltage
 00 = No Coil
 12D = 12 VDC (Standard Coil)
 24D = 24 VDC (Standard Coil)
 R12D = 12 VDC (R-Coil)
 R24D = 24 VDC (R-Coil)

Coil termination:
 00 = No Coil
 FL = Flying Lead
 DN = DIN 43650 *
 DE = Deutsch
 AJ = Amp Junior *
 SP = Spade *
 AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
 00 = Cartridge only
 6S = Al, #6 SAE
 8S = Al, #8 SAE
 L3B = Al, 3/8 BSP
 L4B = Al, 1/2 BSP
 Other housings available

Seals
 B = Buna-N
 V = Viton

Body Nomenclature
 No Body
 CP10-4-6S
 CP10-4-8S
 SDC10-4-L3B
 SDC10-4-L4B

Seals kit
 354001919
 354002019

P103 449E

* These terminations are not available on robust coil (R12D, R24D)

Solenoid valves
SV10-34-02



4-Way, 3-Position Spool
SV08-34-03

OPERATION

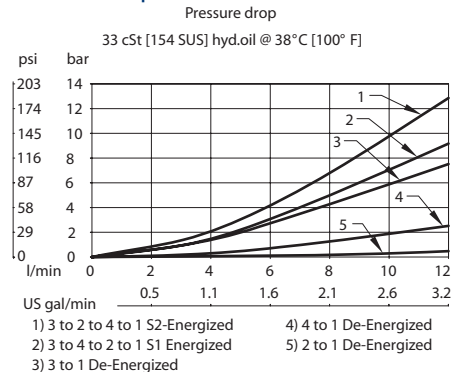
This is a direct-acting, 3-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

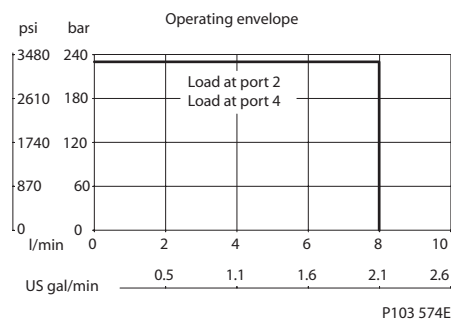
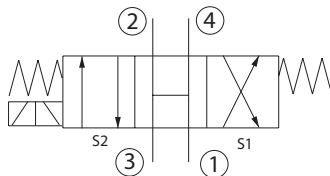
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	8 l/min [2 US gal/min]
Weight	0.55 kg [1.21 lb]
Cavity	SDC08-4
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic

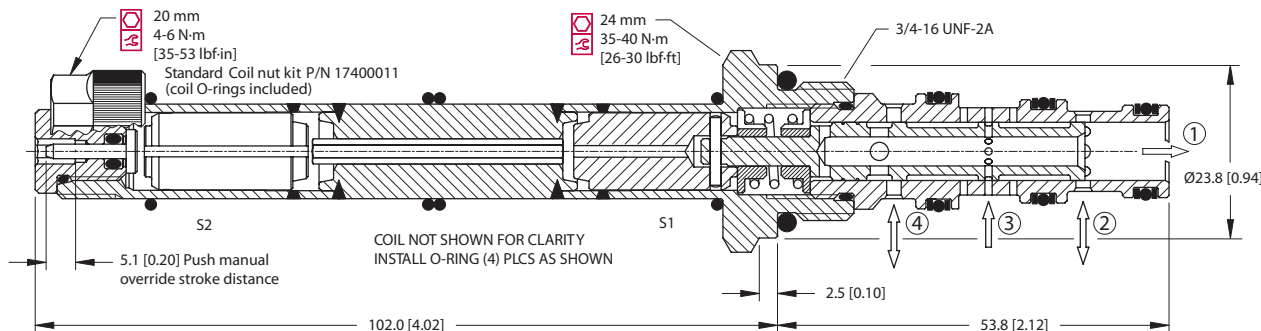


P108277

DIMENSIONS

mm [in]

Cross-sectional view



P103 473

ORDERING INFORMATION

SV08-34-03-12D-DN-B-00

Coil voltage 00 = No Coil 12D = 12 VDC (Standard Coil) 24D = 24 VDC (Standard Coil) R12D = 12 VDC (R-Coil) R24D = 24 VDC (R-Coil)	Body and ports 00 = Cartridge only 4S = Al, #4 SAE 6S = Al, #6 SAE L2B = Al, 1/4 BSP Other housings available	Body Nomenclature No Body CP08-4-4S CP08-4-6S SDC08-4-L2B
Coil termination: 00 = No Coil FL = Flying Lead DN = DIN 43650 * DE = Deutsch AJ = Amp Junior * SP = Spade * AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1	Seals B = Buna-N V = Viton	Seals kit 354003319 354003919

* These terminations are not available on robust coil (R12D, R24D)

4-Way, 3-Position Spool
SV10-34-03

OPERATION

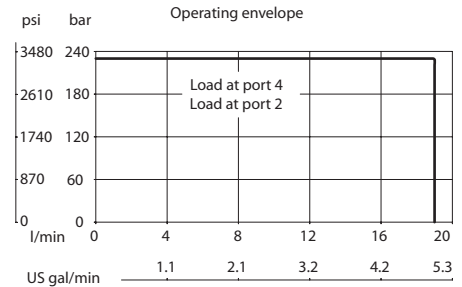
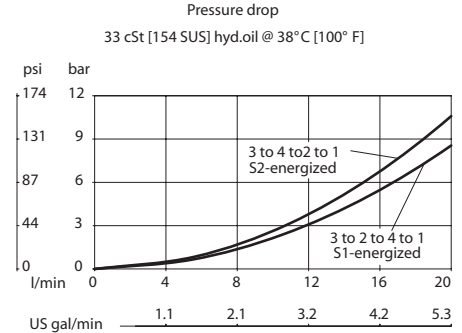
This is a direct-acting, 3-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

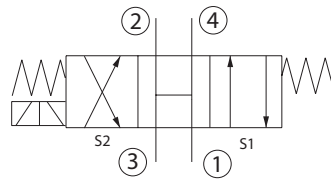
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	16 l/min [4 US gal/min]
Weight	0.81 kg [1.79 lb]
Cavity	SDC10-4
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic

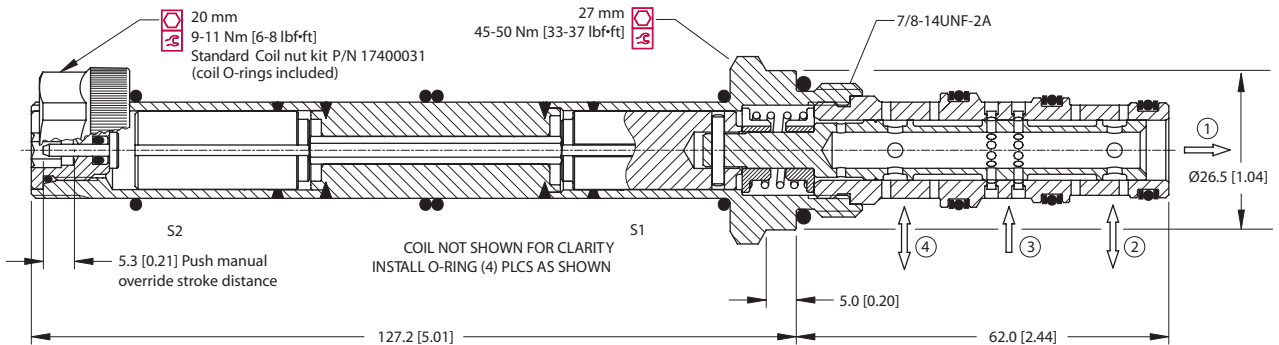


P108278

DIMENSIONS

mm [in]

Cross-sectional view



P103 555

ORDERING INFORMATION

SV10-34-03-12D-DN-B-00

Coil voltage
00 = No Coil
12D = 12 VDC (Standard Coil)
24D = 24 VDC (Standard Coil)
R12D = 12 VDC (R-Coil)
R24D = 24 VDC (R-Coil)
Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
00 = Cartridge only
6S = Al, #6 SAE
8S = Al, #8 SAE
L3B = Al, 3/8 BSP
L4B = Al, 1/2 BSP
Other housings available
Seals
B = Buna-N
V = Viton

Seals kit
354001919
354002019

Body Nomenclature
No Body
CP10-4-6S
CP10-4-8S
SDC10-4-L3B
SDC10-4-L4B

P103 450E

* These terminations are not available on robust coil (R12D, R24D)

Cartridge Valves Technical Information
Solenoid Valves
4-Way, 3-Position Spool
SV08-34-04

OPERATION

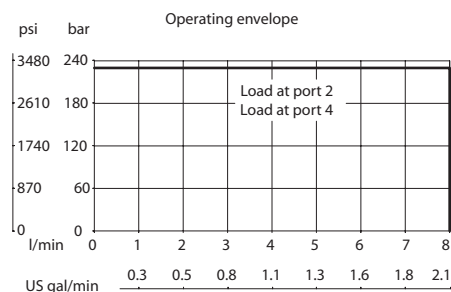
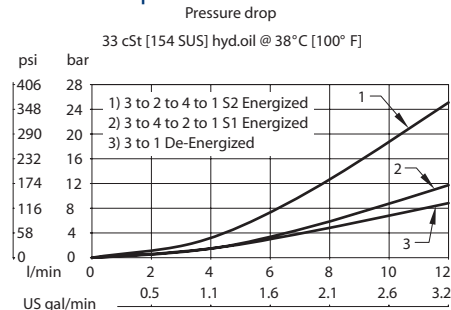
This is a direct-acting, 3-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

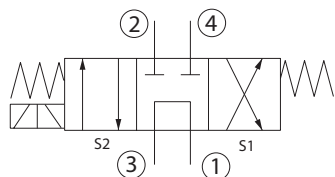
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	6 l/min [2 US gal/min]
Weight	0.55 kg [1.21 lb]
Cavity	SDC08-4
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic

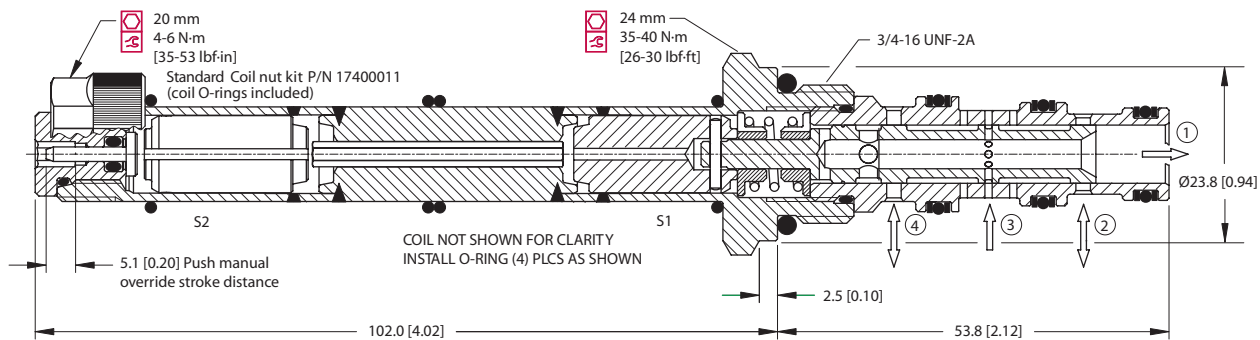


P102 394E

DIMENSIONS

mm [in]

Cross-sectional view



P103 474

ORDERING INFORMATION

SV08-34-04-12D-DN-B-00

Coil voltage
00 = No Coil
12D = 12 VDC (Standard Coil)
24D = 24 VDC (Standard Coil)
R12D = 12 VDC (R-Coil)
R24D = 24 VDC (R-Coil)
Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
00 = Cartridge only
4S = Al, #4 SAE
6S = Al, #6 SAE
L2B = Al, 1/4 BSP
Other housings available

Seals
B = Buna-N
V = Viton

Body Nomenclature
No Body
CP08-4-4S
CP08-4-6S
SDC08-4-L2B

P103 436E

* These terminations are not available on robust coil (R12D, R24D)



Cartridge Valves Technical Information

Solenoid Valves

4-Way, 3-Position Spool

SV10-34-04



OPERATION

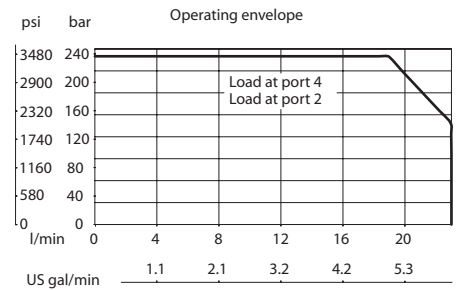
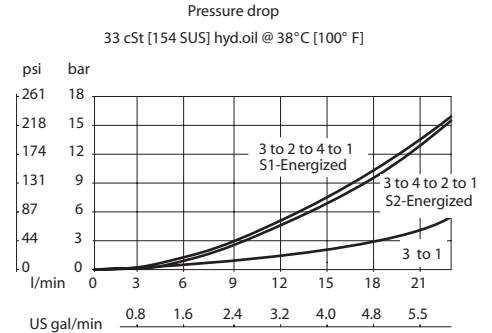
This is a direct-acting, 3-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

Specifications

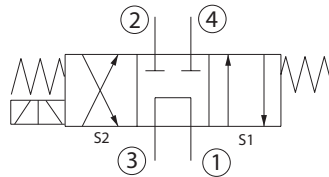
Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	15 l/min [4 US gal/min]
Weight	0.81 kg [1.79 lb]
Cavity	SDC10-4
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



P103 590E

Schematic

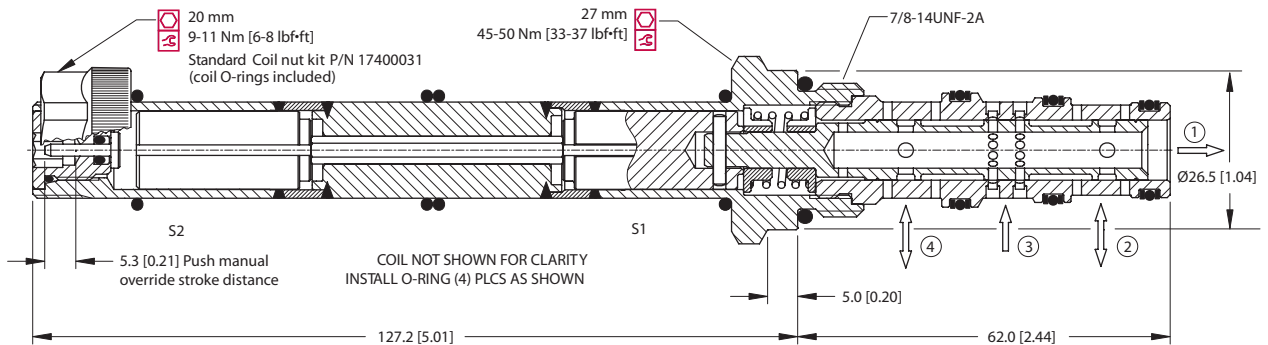


P108276

DIMENSIONS

mm [in]

Cross-sectional view



P103 556

ORDERING INFORMATION

SV10-34-04-12D-DN-B-00

Coil voltage
00 = No Coil
12D = 12 VDC (Standard Coil)
24D = 24 VDC (Standard Coil)
R12D = 12 VDC (R-Coil)
R24D = 24 VDC (R-Coil)
Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
00 = Cartridge only
6S = Al, #6 SAE
8S = Al, #8 SAE
L3B = Al, 3/8 BSP
L4B = Al, 1/2 BSP
Other housings available
Seals
B = Buna-N
V = Viton

Seals kit
354001919
354002019

Body Nomenclature
No Body
CP10-4-6S
CP10-4-8S
SDC10-4-L3B
SDC10-4-L4B

P103 451E

* These terminations are not available on robust coil (R12D,R24D)

Solenoid valves
SV10-34-04



4-Way, 3-Position Spool
SV08-34-05

OPERATION

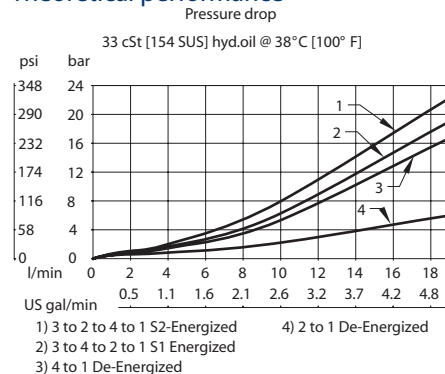
This is a direct-acting, 3-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

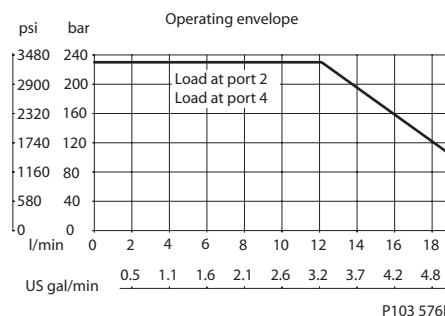
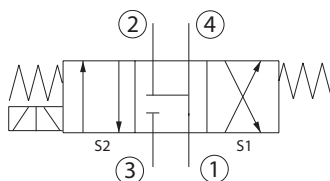
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	10 l/min [3 US gal/min]
Weight	0.55 kg [1.21 lb]
Cavity	SDC08-4
Standard Coil	M13 20 Watt
Robust Coil	R13 16 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



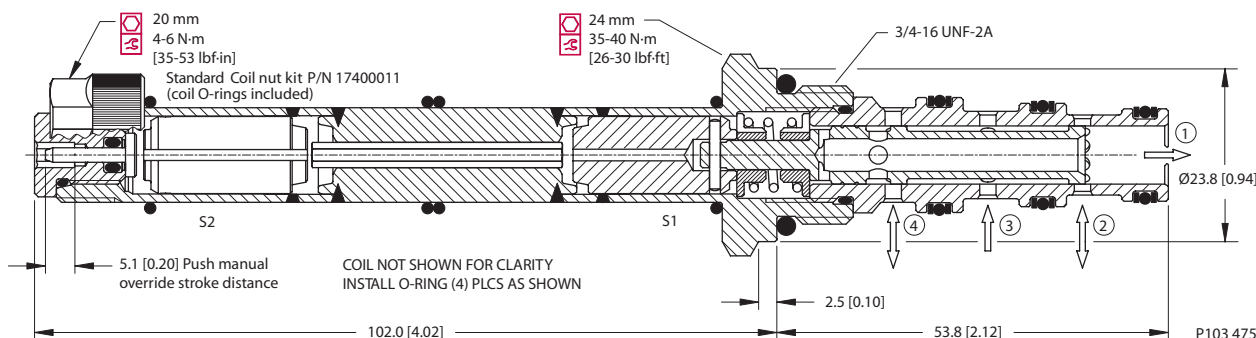
Schematic



DIMENSIONS

mm [in]

Cross-sectional view



ORDERING INFORMATION

SV08-34-05-12D-DN-B-00

Coil voltage
00 = No Coil
12D = 12 VDC (Standard Coil)
24D = 24 VDC (Standard Coil)
R12D = 12 VDC (R-Coil)
R24D = 24 VDC (R-Coil)
Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
00 = Cartridge only
4S = Al, #4 SAE
6S = Al, #6 SAE
L2B = Al, 1/4 BSP
Other housings available

Seals
B = Buna-N
V = Viton

Body Nomenclature
No Body
CP08-4-4S
CP08-4-6S
SDC08-4-L2B

P103 437E

* These terminations are not available on robust coil (R12D, R24D)



4-Way, 3-Position Spool
SV10-34-05

OPERATION

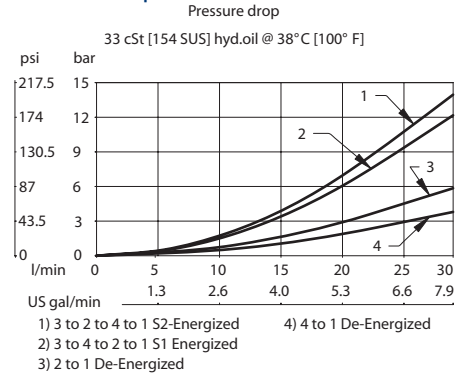
This is a direct-acting, 3-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

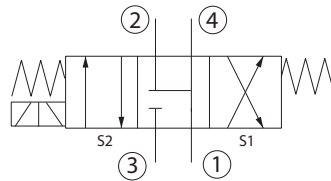
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	20 l/min [5 US gal/min]
Weight	0.81 kg [1.79 lb]
Cavity	SDC10-4
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

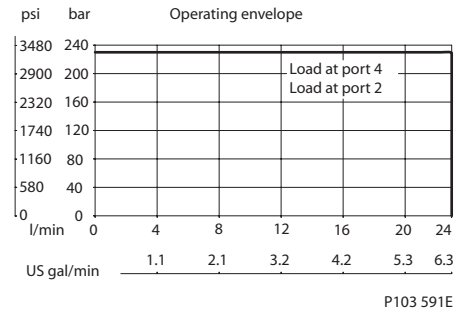
Theoretical performance



Schematic



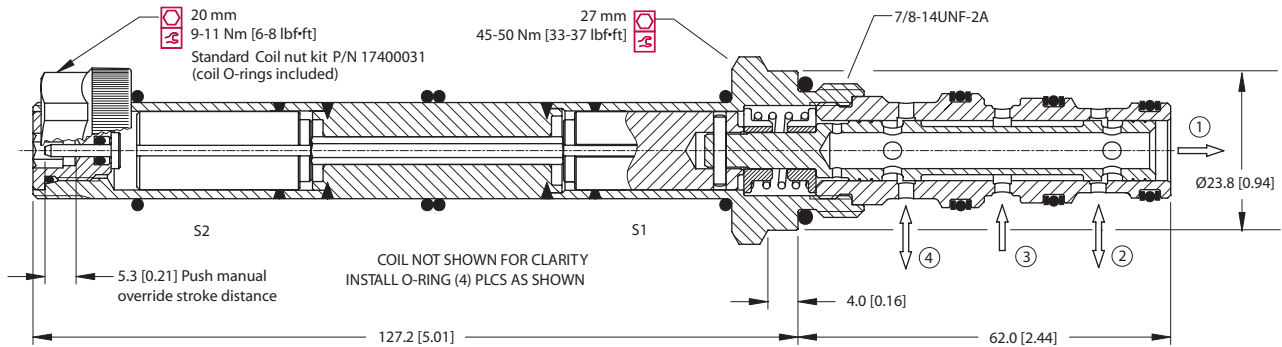
P108280



DIMENSIONS

mm [in]

Cross-sectional view



P103 557

ORDERING INFORMATION

SV10-34-05-12D-DN-B-00

Coil voltage
00 = No Coil
12D = 12 VDC (Standard Coil)
24D = 24 VDC (Standard Coil)
R12D = 12 VDC (R-Coil)
R24D = 24 VDC (R-Coil)
Coil termination:
00 = No Coil
FL = Flying Lead
DN = DIN 43650 *
DE = Deutsch
AJ = Amp Junior *
SP = Spade *
AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports
00 = Cartridge only
6S = Al, #6 SAE
8S = Al, #8 SAE
L3B = Al, 3/8 BSP
L4B = Al, 1/2 BSP
Other housings available
Seals
B = Buna-N
V = Viton

Body Nomenclature
No Body
CP10-4-6S
CP10-4-8S
SDC10-4-L3B
SDC10-4-L4B

Seals kit
354001919
354002019
P103 452E

* These terminations are not available on robust coil (R12D, R24D)

Solenoid valves
SV10-34-05



Cartridge Valves Technical Information

Solenoid Valves

4-Way, 3-Position Spool

SV10-34-11



COMPLIANT

OPERATION

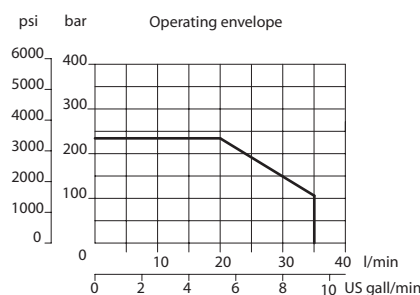
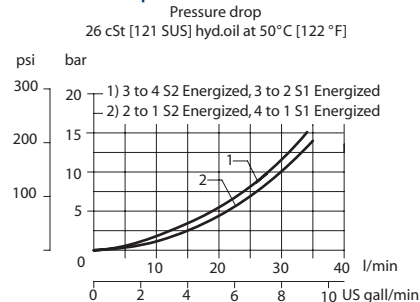
This is a direct-acting, 3-position, 4-way, spool-type solenoid valve.

SPECIFICATIONS

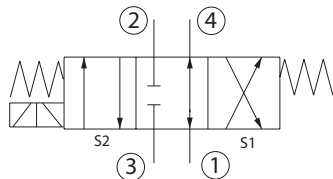
Specifications

Rated pressure	230 bar [3300 psi]
Rated flow at 7 bar [100 psi]	24 l/min [6 US gal/min]
Weight	0.81 kg [1.79 lb]
Cavity	SDC10-4
Standard Coil	M16 26 Watt
Robust Coil	R16 20 Watt Robust Nut P/N 173804910 (no coil O-rings needed)

Theoretical performance



Schematic



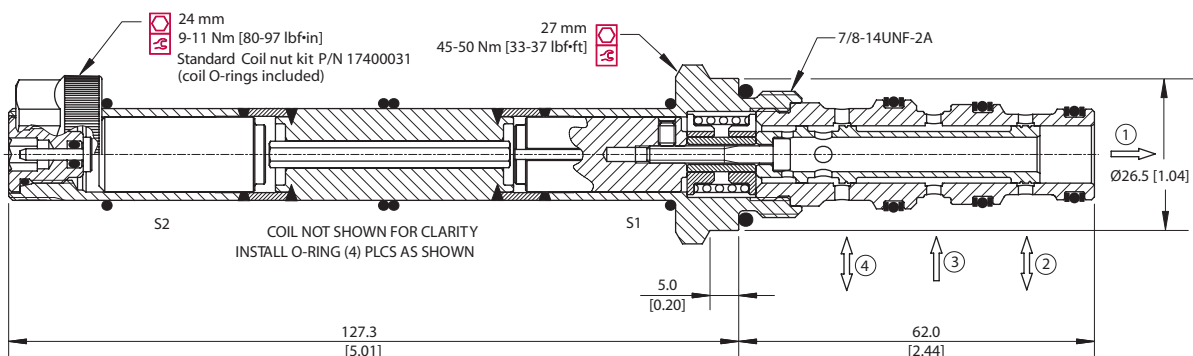
P108283

P103 597E

DIMENSIONS

mm [in]

Cross-sectional view



P103 563

ORDERING INFORMATION

SV10-34-11-12D-DN-B-00

Coil voltage

- 00 = No Coil
- 12D = 12 VDC (Standard Coil)
- 24D = 24 VDC (Standard Coil)
- R12D = 12 VDC (R-Coil)
- R24D = 24 VDC (R-Coil)

Coil termination:

- 00 = No Coil
- FL = Flying Lead
- DN = DIN 43650 *
- DE = Deutsch
- AJ = Amp Junior *
- SP = Spade *
- AS = AMP SuperSeal 1.5 and Metri-Pack 150 type 1

Body and ports

- 00 = Cartridge only
- 6S = Al, #6 SAE
- 8S = Al, #8 SAE
- L3B = Al, 3/8 BSP
- L4B = Al, 1/2 BSP
- Other housings available

Seals

- B = Buna-N
- V = Viton

Seals kit

- 354001919
- 354002019

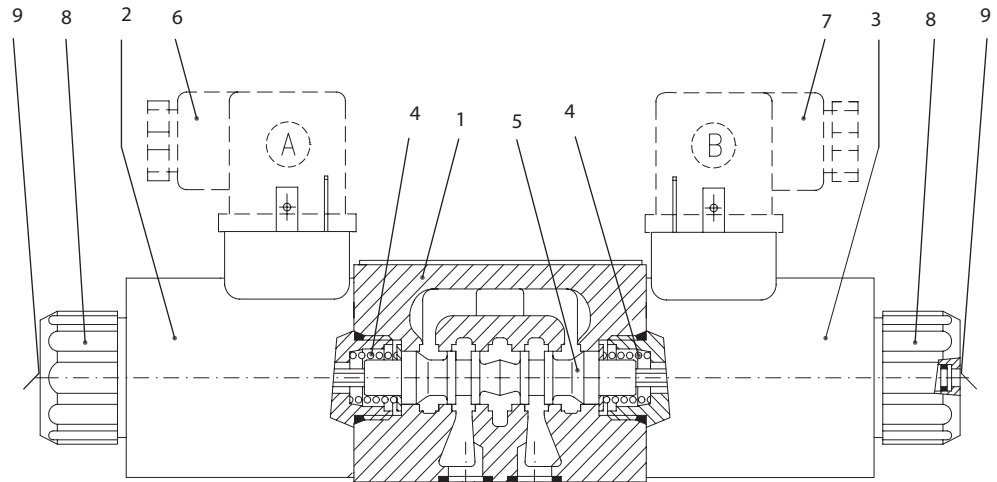
Body Nomenclature

- No Body
- CP10-4-6S
- CP10-4-8S
- SDC10-4-L3B
- SDC10-4-L4B

P103 458E

* These terminations are not available on robust coil (R12D, R24D)

OVERVIEW



P104 435E

DCV 03 directional control valves consist of: housing (1), control spool (5), with two centering springs (4), and cylindrical operating solenoids (2, 3).

The three-position directional valves have two solenoids and two springs. Two-position directional valves have either one solenoid and one return spring or two solenoids and a detent assembly.

The operating solenoids are DC. For AC supply the solenoids are provided with a rectifier, which is integrated directly into the connectors.

The plug connectors (6, 7) can be rotated 90°. By loosening the nut (8), the solenoids can be rotated 360°. This enables the solenoids to be replaced without opening the valves.

In the case of solenoid malfunction or power failure, the spool can be actuated by manual override (9), provided the pressure in T-port does not exceed 25 bar [360 psi].

The valve housing (1) is phosphate coated. The operating solenoids (2, 3) are zinc coated.

FEATURES

- 3 position, 4-way, and 2 position, 4-way directional valves
- Cylindrical operating solenoids with separate operating coils – connector can be rotated 90°
- 4-land spool – reduced functional dependence on fluid viscosity
- Push button manual override
- Installation dimensions to ISO 4401-03-02-0-94 and DIN 24340-A6



TECHNICAL DATA

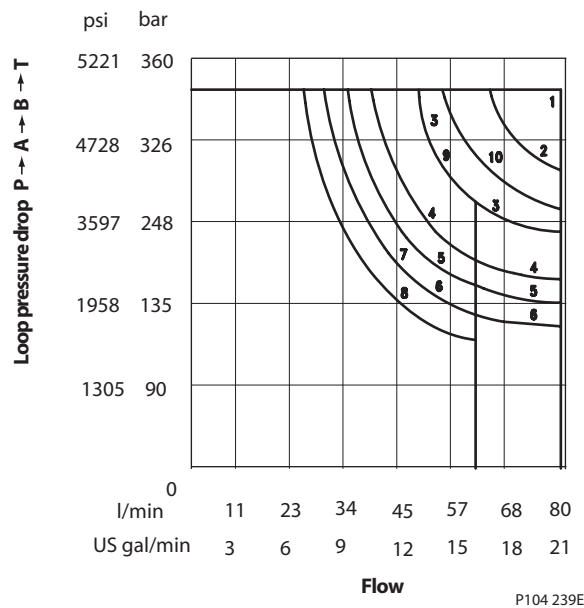
Specifications

Nominal size	mm [in.]	6.0 [0.24]
Maximum flow	l/min [US gal/min]	See p-Q characteristics below
Maximum operating pressure	bar [psi]	320 [4640]
Maximum back pressure (port T)	bar [psi]	210 [3050]
Pressure drop	bar [psi]	see Δ p-Q characteristics, page 4
Weight – with 1 solenoid with 2 solenoids	Kg [lb]	1.6 [3.52] 2.2 [4.84]

CHARACTERISTICS

p - Q Characteristics

Operating limits for maximum hydraulic power transferred by the directional valve. Measured at viscosity = 35 mm²/sec (cSt) [166 SUS] and temperature = 40°C [104°F].



Spool	Curve
Z11	1
C11	7
H11	4
P11	1
Y11	3
B11	9
Y41	7
Z21	1
C41	6
R11	4
R21	5
A51	6
P51	1
Y51	3
C51	7
Z51	1
Z71	8
Z81	8
Z91	8
R31	6
H51	8
F51	8
X11	4
K11	8
N11	8
J15	1
J75	10
L21	6
F11	6



Cartridge Valves Technical Information

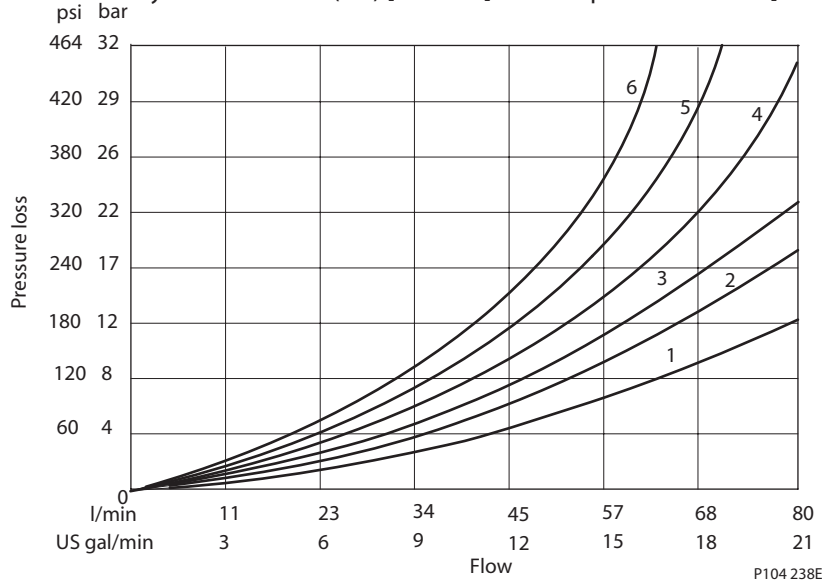
Directional Valves DCV 03



CHARACTERISTICS (continued)

Δp -Q Characteristics

Measured at viscosity = 35 mm²/sec (cSt) [166 SUS] and temperature = 40°C [104°F]



P104 238E

Spool	P-A	P-B	A-T	B-T	P-T
Z11	2	2	3	3	
C11	5	5	5	6	3
H11	2	2	2	2	3
P11	1	1	3	3	
Y11	2	2	2	2	
L21	2	2	3	3	
B11	2	2	3	3	
Y41	3	3	3	3	
Z21		2	3		
C41	4	4			5
F11	1	2		3	3
R11	2	2	3	3	
R21	2	2	3	3	
A51	2	2			
P51		1	3		
Y51		2	2		
C51	2			3	4
Z51		2	3		
Z71	3	3			
Z81			3	3	
Z91	3			3	3
R31	2			3	
H51		2	3		
F51		2	3		
X11	2	2	3	3	
K11		2	3		
N11					
J15	2	2	3	3	
J75	2	2			

Directional control valves
DCV03

ORDER CODE

DCV 03 - □□ - □□□□□ - □□□□□ - □□□ - □□□ - □□□ - □□□

Directional control valve

Nominal size

Operating positions

Code	Description
2	Two position
3	Three position

Spool

See [Spool options](#), page 5

Voltage

Code	Description
01200	12 VDC / 2.72 A
02400	24 VDC / 1.29 A
12060	115 VAC / 0.35 A / 50(60) Hz
24060	230 VAC / 0.17 A / 50(60) Hz

The AC coils correspond with E5 connectors only.

Connector

Code	Description
E1	DIN 43650
E2	DIN 43650 with diode
E3	AMP junior
E4	AMP junior with diode
E5	DIN 43650 with rectifier
E8	Lead wires
E9	Lead wires with diode
E12	Deutsch
E13	Deutsch with diode

Seals

Code	Description
B	Buna-N
V	Viton

P port orifice

Code	Description
Omit	None
D1	1.0 mm [0.04 in]
D2	1.5 mm [0.06 in]
D3	2.0 mm [0.08 in]
D4	2.2 mm [0.09 in]
D5	2.5 mm [0.10 in]

Spool speed control orifice

Code	Description
Omit	None
T1	0.7 [0.03 in] orifice

Manual override

Code	Description
00	Standard
N1	Covered with coil nut
N2	Protective rubber boot.
N3	Detent assembly

Connector plug (DIN 43650)

Code	Description
Omit	No plug
K1	Connector plug
K2	Connector plug with LED

Requires E1, E2, or E5 connector

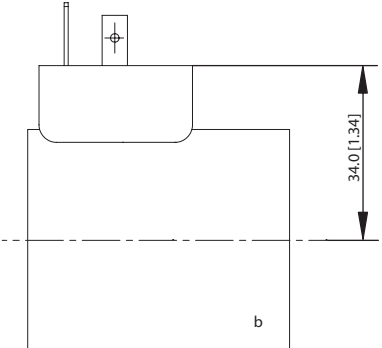
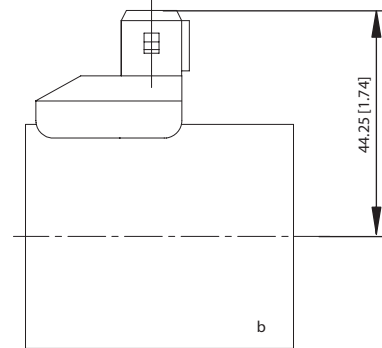
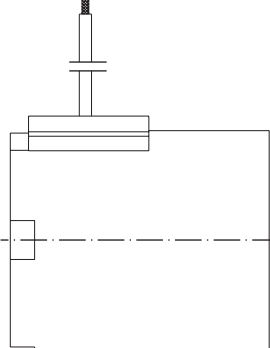
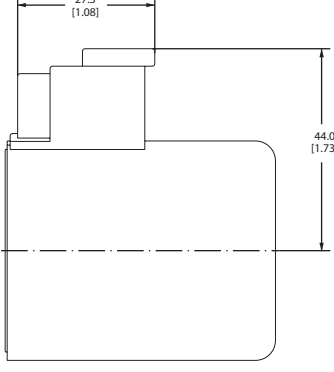
SPOOL OPTIONS

Functional Symbols

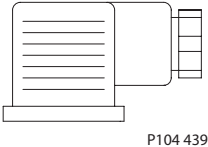
Code	Symbol	Transition	Code	Symbol	Transition
Z11*			Z51*		
C11*			Z71		
H11*			Z81		
P11			Z91		
Y11*			R31		
L21			H51		
B11			F51		
Y41			Z11*		
Z21			X11		
C41			C11		
F11			H11		
R11*			K11		
R21*			N11		
A51*			F11		
P51			J15*		
Y51*			J75		
C51*					

* standard spool options.

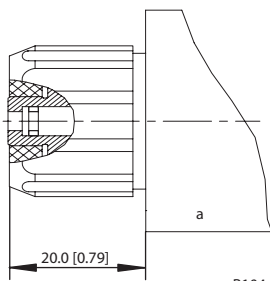
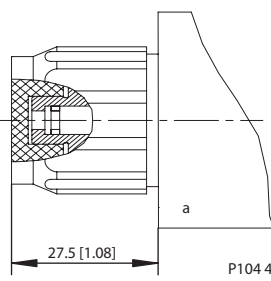
CONNECTORS

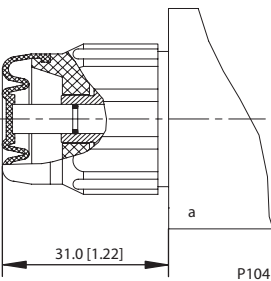
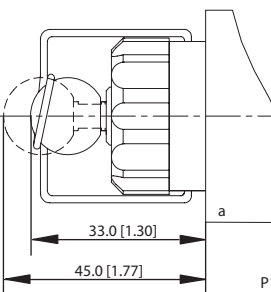
Code	Dimensional sketch
E1, E2, E5	 <p>P104 436E</p>
E3, E4	 <p>P104 437E</p>
E8, E9	 <p>P102 860E</p>
E12, E13	 <p>P102 857E</p>

**CONNECTOR
OPTIONS**

DIN 43650  P104 439E	Code	Type	Model	Max. input voltage
	K1		Plug B (black)	without rectifier
Plug A (grey)			without rectifier	250 VDC 230 VAC
K2		Plug B (black)	without rectifier and with LED	30 VDC 230 VAC
		Plug A (grey)	without rectifier and with LED	30 VDC 230 VAC

**MANUAL OVERRIDE
OPTIONS**

Standard	Covered with coil nut
code 00 mm[in]  20.0 [0.79] P104 440E	Code N1 mm[in]  27.5 [1.08] P104 441E Manual override covered by coil nut

Rubber boot	Detent assembly
Code N2 mm [in]  31.0 [1.22] P104 442E Manual override protected by rubber boot	Code N3 mm [in]  33.0 [1.30] 45.0 [1.77] P104 443E Manual override with detent

Directional control valves
DCV03

SPOOL SPEED CONTROL ORIFICE

Code	Sketch	Description
T1		<p>This directional valve provides cushioned control spool shifting by means of orifice situated in the solenoid armature.</p> <p>To ensure proper function, air bleeding required. To bleed :</p> <ol style="list-style-type: none"> 1. Remove Boot (2) 2. Open Plug (1) 3. Tighten plug after air is removed 4. Replace boot

P-PORT ORIFICE OPTIONS

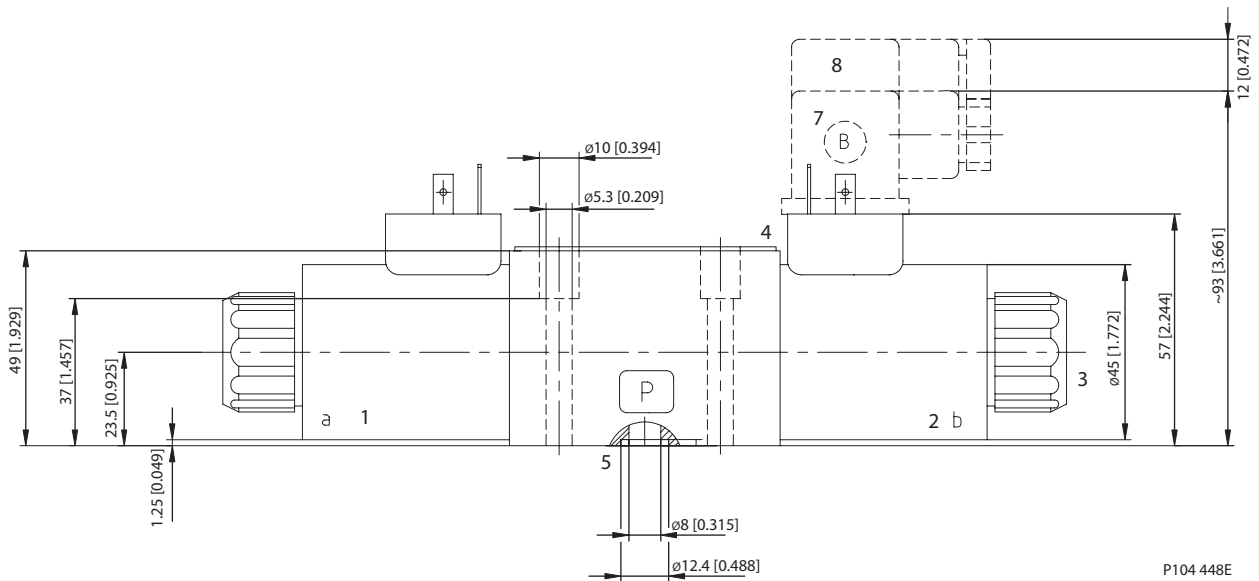
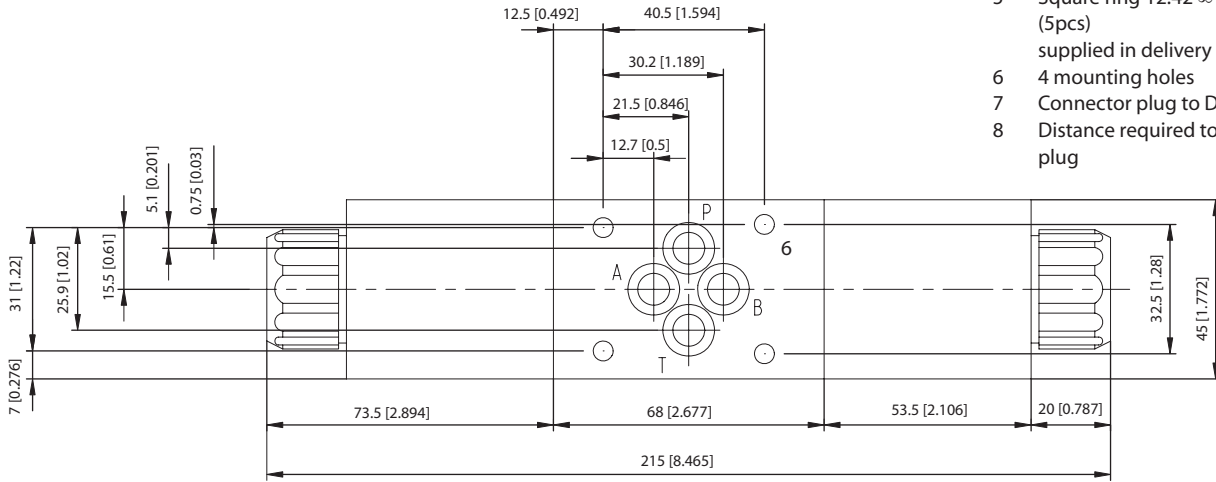
Code	D mm [in]	Description
None	None	
D1	1.0 [0.04]	
D2	1.5 [0.06]	
D3	2.0 [0.08]	
D4	2.2 [0.09]	
D5	2.5 [0.10]	

DIMENSIONS

Valve with two solenoids

Dimensions: mm [in]

- 1 Solenoid a
- 2 Solenoid b
- 3 Manual override
- 4 Name plate
- 5 Square ring 12.42 ∞ 1.68 (5pcs) supplied in delivery packet
- 6 4 mounting holes
- 7 Connector plug to DIN 43650
- 8 Distance required to remove plug



P104 448E

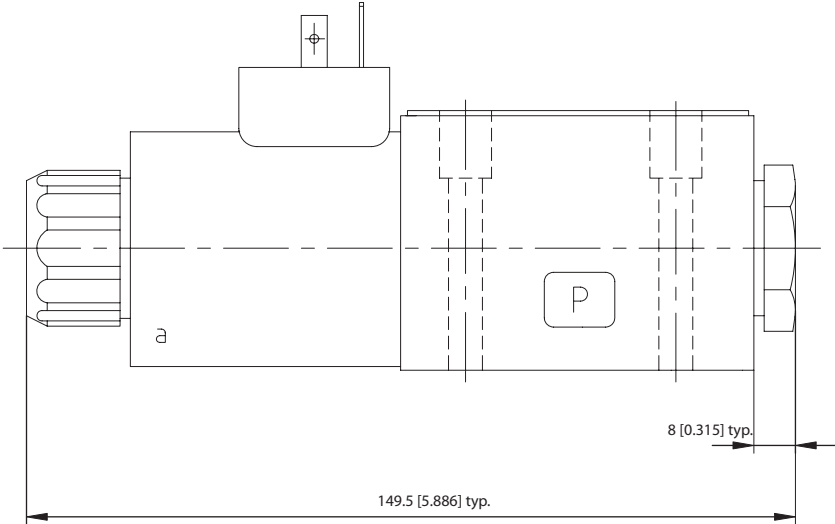
Directional control valves
DCV03

**DIMENSIONS
(continued)**

Valve with one solenoid - side a

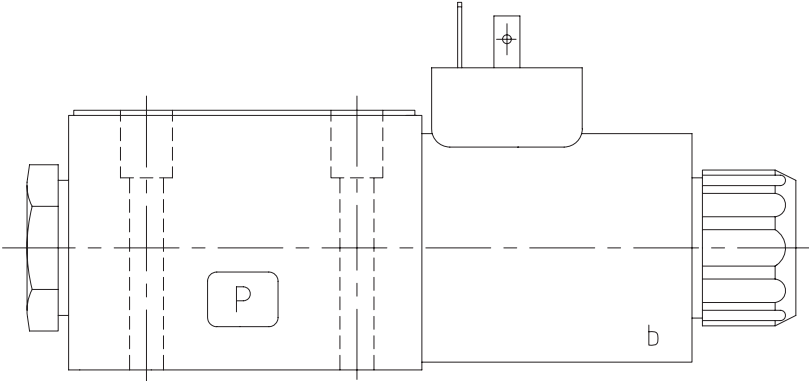
Dimensions: mm [in]

Functional symbols
 R11, R21, A51, P51, Y51,
 C51, Z51, H51, B51, M21,
 X25, J15, J75

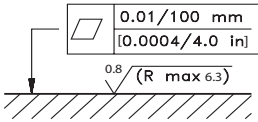


Valve with one solenoid - size b

Functional symbols
 X11, C11, H11



P104 449E

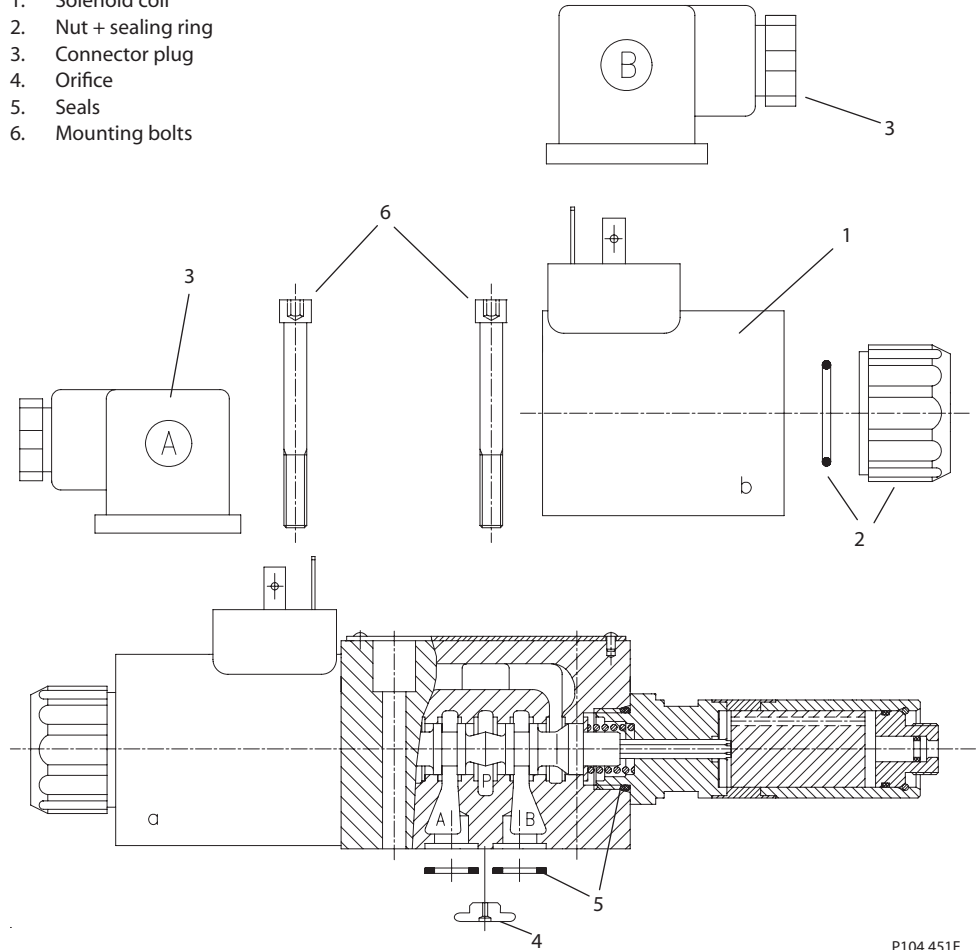


P104 450E

Required surface finish of interface

REPLACEMENT PARTS

1. Solenoid coil
2. Nut + sealing ring
3. Connector plug
4. Orifice
5. Seals
6. Mounting bolts



P104 451E

Directional control valves
DCV03

Solenoid

Voltage	E1 DIN	E2 DIN	E3 Amp Jr.	E4 Amp Jr. w/Diode	E5 DIN w/Rectifier	E8 Lead Wires	E9 Lead Wires w/Diode	E12 Deutsch	E13 Deutsch w/Diode
	43650	43650 w/Diode							
Ordering Number									
01200	158-8004	11051915	***	158-8139	***	158-8083	***	158-8055	11030059
02400	158-8009	158-8053	***	***	***	***	***	158-8057	158-8129
11550	***	***	Not Available		158-8028	Not Available			
23050	***	***			158-8018				

*** Consult Factory

REPLACEMENT PARTS (continued)

Solenoid nut

M/O code	Type of nut	Ordering number
No Code	Standard nut	158-8005
N1	Closing nut	Consult factory
N2	Nut with rubber cap	Consult factory
N3	Nut with detent assembly	Consult factory

Connector (DIN 43650)

Code	Model	Connector plug A	Connector plug B
		gray	black
Ordering number			
K1	No rectifier or LED	158-8076	088010080
K2	with LED	Consult factory	Consult factory

Orifice

Code	Diameter mm [in]	Ordering number
D1	1.0 [0.039]	158-8013
D2	1.5 [0.059]	158-8003
D3	2.0 [0.078]	158-8079
D4	2.2 [0.87]	158-8080
D5	2.5 [0.098]	158-8081

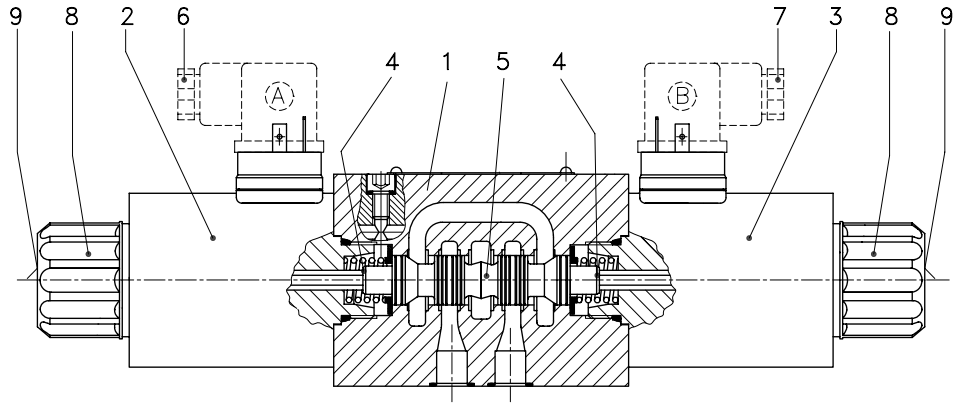
Seal kit

Type	Ordering number
Buna-N	158-8007
Viton	158-8062

Mounting bolts – set

Type	Ordering number
M5 x 45 bolts	158-8026
No 10-24 bolts	158-8064

OVERVIEW



P106 001E

DCV 05 directional control valves consist of: housing (1), control spool (5), centering springs (4), and operating solenoids (2, 3).

The three-position directional valves have two solenoids and two springs. The two position directional valves have one solenoid and one return spring.

The operating solenoids are DC and are supplied through connectors A and B (6, 7). For AC supply, the solenoids are provided with rectifiers integrated directly into the connectors.

The connectors must be ordered separately. By loosening nut (8), the solenoid can be rotated in three positions 90° apart.

Provided that the pressure in T-port does not exceed 360 psi [25 bar], the valve can be actuated by manual override (9).

The valve housing (1) is phosphate coated. The operating solenoids (2, 3) are zinc coated.

FEATURES

- 3 position, 4-way and 2 position, 4-way directional valves
- Solenoids can be fixed in three positions 90° apart
- Push button manual override
- Installation dimensions to DIN 24340 and ISO 4401



TECHNICAL DATA

Specifications

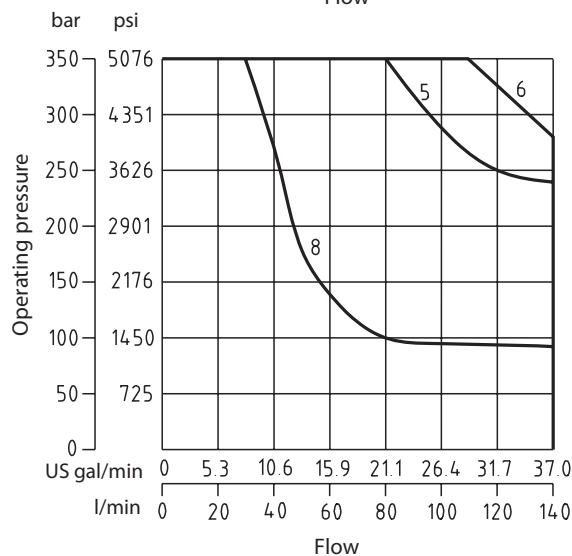
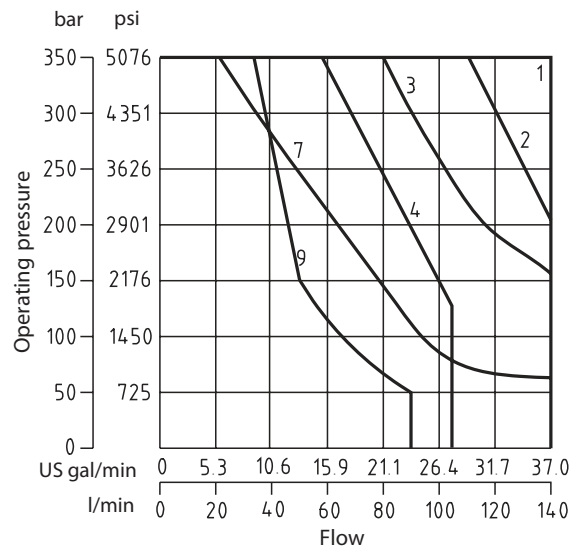
Nominal size	mm [in.]	10 [0.39]
Maximum flow	l/min [US gal/min]	See p-Q characteristics, below
Max. operating pressure	bar [psi]	350 [5075]
Max. back pressure (port T)	bar [psi]	210 [3045]
Pressure drop	bar [psi]	see Δ p-Q characteristics, page 4
Weight – with 1 solenoid with 2 solenoids	Kg [lb]	5.1 [11.25] 6.6 [14.55]

CHARACTERISTICS

p - Q Characteristics

Operating limits for maximum hydraulic power transferred by the directional valve.

For respective spool type – see *Spool Options*, page 5. Measured at viscosity = 35 mm²/s (cSt) [166 SUS] and temperature = 40°C [104°F]



Spool	Curve
Z11	1
C11	3
H11	1
P11	1
Y11	5
B11	4
R11	2
Z51	1
H51	1
P51	1
Y51	5
C51	3
X11	2
B51	4
L21	7
R21	2
J15	6
J75	6
A51	8
C21	9

P104 203E



Cartridge Valves Technical Information

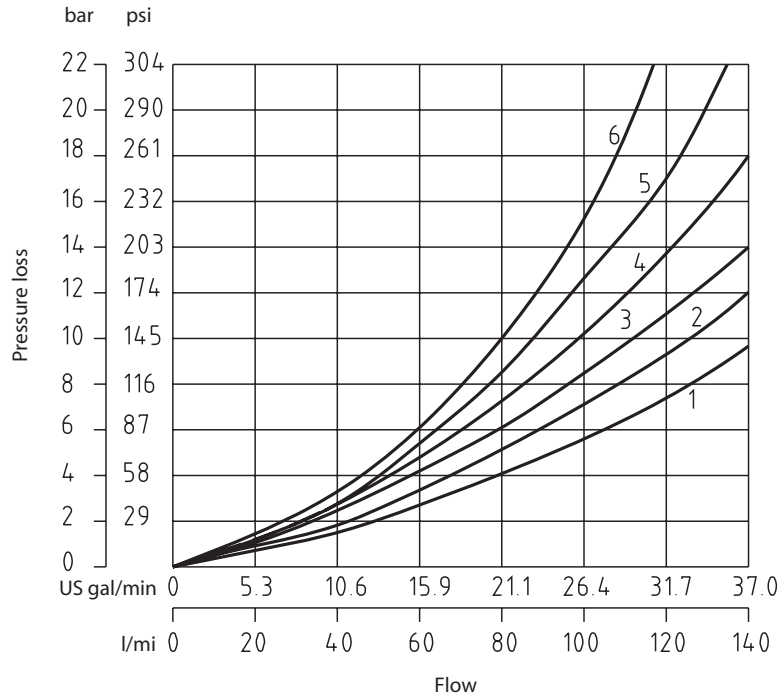
Directional control valves DCV 05



CHARACTERISTICS (continued)

p - Q Characteristics

Measured at viscosity = 32 mm²/s (cSt) [156 SUS] and temperature = 40°C [104°F]



P104 204E

Directional control valves
DCV05

Spool	P-A	P-B	A-T	B-T	P-T
Z11	1	1	2	2	
C11	4	3	4	5	1
H11	1	1	2	2	1
P11	1	1	2	2	
Y11	1	1	2	2	
B11	1	1	2	2	
R11	1	1	2	2	
Z51		1	2		
H51		1	2		1
P51		1	2		
Y51		1	2		
C51	4			5	1
X11	1	1	2	2	
B51		1	2		
L21	1	1	1	2	2
R21	1	1	1	3	
J15	1	4	2	3	
J75	1	1			
A51	1	1			
C21	6	6	6	6	4

ORDER CODE

DCV 05 - - - - - -

Directional control valves

Nominal size

Operating positions

Code	Description
2	Two positions
3	Three positions

Spool

See *Spool options*, page 5

Voltage

Code	Description
01200	12 VDC / 2.72 A
02400	24 VDC / 1.29 A
12060	115 VAC / 0.35 A / 50(60) Hz
24060	230 VAC / 0.17 A / 50(60) Hz

The AC coils correspond with E5 connectors only.

Connector

Code	Description
E1	DIN 43650
E2	DIN 43650 with diode
E5	DIN 43650 with rectifier
E8	Lead wires
E9	Lead wires with diode
E10	Deutsch on lead wires
E11	Deutsch on lead wires with diode

Seals

Code	Description
B	Buna-N
V	Viton

Spool speed control orifice

Code	Description
Omit	None
T2	Nozzle 0.6mm [0.024 in]
T3	Throttle screw

Manual override

Code	Description
00	Standard
N2	Protective rubber boot

Connector plug (DIN 43650)

Code	Description
Omit	No plug
K1	Connector plug
K2	Connector plug with LED

Directional control valves
DCV05

SPOOL OPTIONS

Functional Symbols

Code	Symbol	Transition	Code	Symbol	Transition
Z11*			Y51*		
C11*			C51		
H11*			B51		
P11			Z51*		
Y11*			H51		
Y21			X11		
B11			C11		
C21			H11		
R11*			J15*		
R21*			J75		
A51*			X25		
P51			M21		

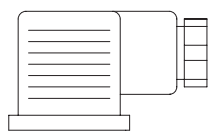
* standard spool option.

TERMINAL OPTIONS

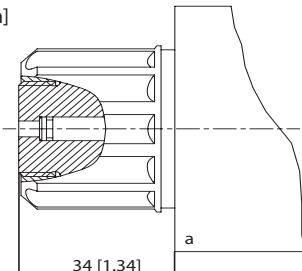
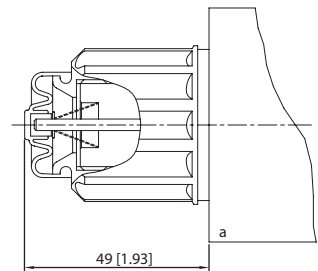
Code	Sketch
E1, E2, E5	<p>P104 549</p>
E8, E9	<p>P104 451E</p>
E10, E11	<p>P104 452E</p>

CONNECTOR OPTIONS

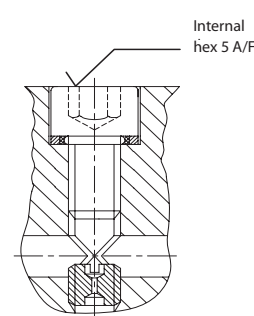
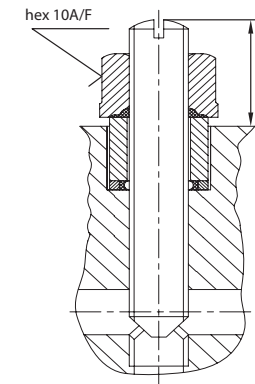
DIN 43650

 P104 439E	Code	Type	Model	Max. input voltage
	K1		Plug B (black)	Without rectifier
Plug A (grey)			Without rectifier	250 VDC 230 VAC
K2		Plug B (black)	Without rectifier and LED	30 VDC 230 VAC
		Plug A (grey)	Without rectifier and LED	30 VDC 230 VAC

MANUAL OVERRIDE OPTION

Standard	Covered by coil nut
Code 00 mm [in]  34 [1.34] a P104 458E	Code N2  49 [1.93] a P104 453E Manual override covered by coil nut

SPOOL SPEED CONTROL ORIFICE OPTION

Nozzle 0.6 mm [0.024 in.]	Throttle screw
Code T2 Dimensional sketch  Internal hex 5 A/F P104 459E	Code T3 Dimensional sketch  External hex 10A/F P104 454E

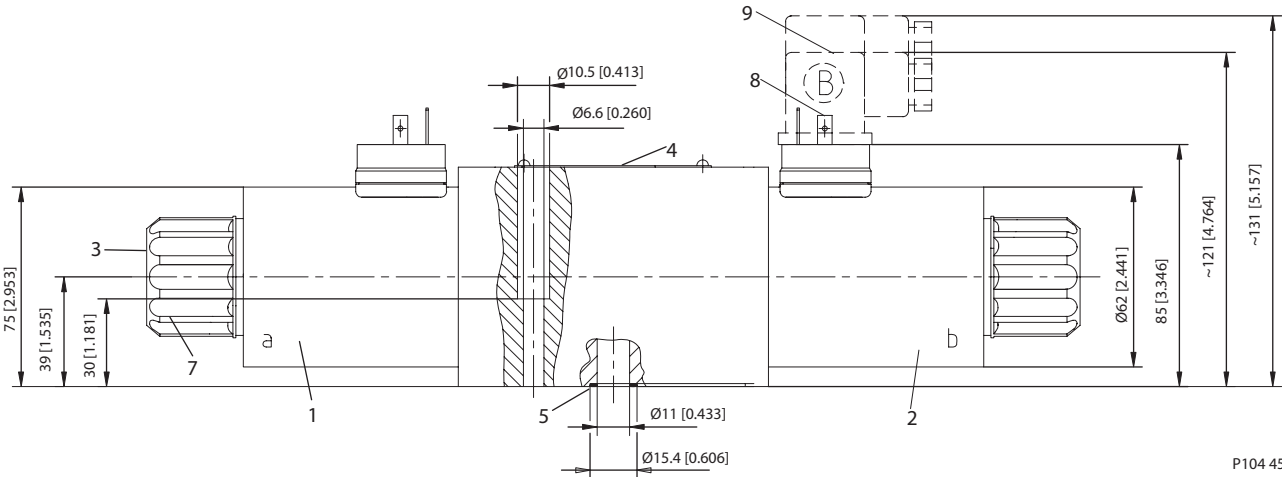
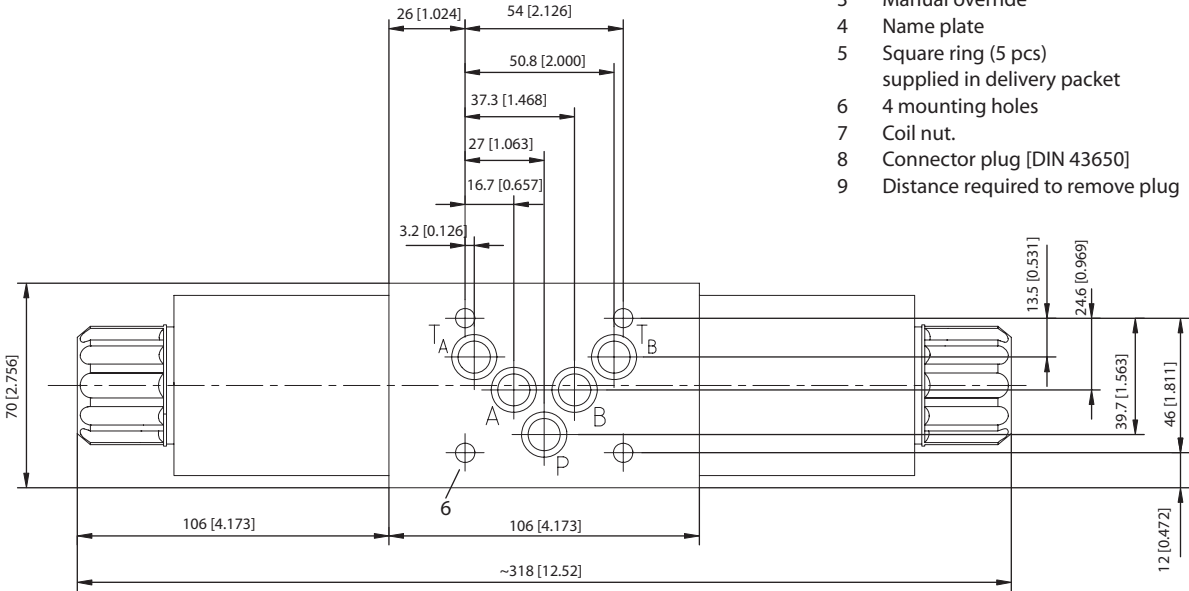
Directional control valves
DCV05

DIMENSIONS

Valve with two solenoids

Dimensions: mm [in]

- 1 Solenoid a
- 2 Solenoid b
- 3 Manual override
- 4 Name plate
- 5 Square ring (5 pcs) supplied in delivery packet
- 6 4 mounting holes
- 7 Coil nut.
- 8 Connector plug [DIN 43650]
- 9 Distance required to remove plug



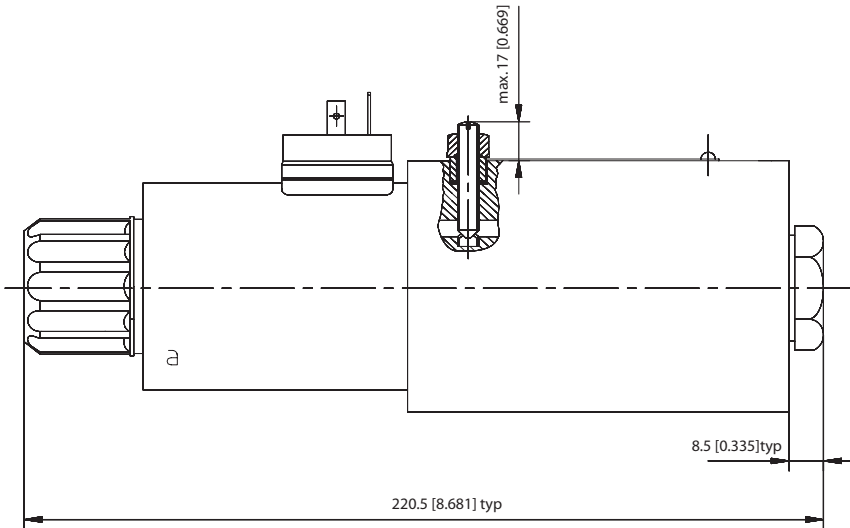
P104 455E

Directional control valves
 DCV05

DIMENSIONS
(continued)

Valve with one solenoid - side a

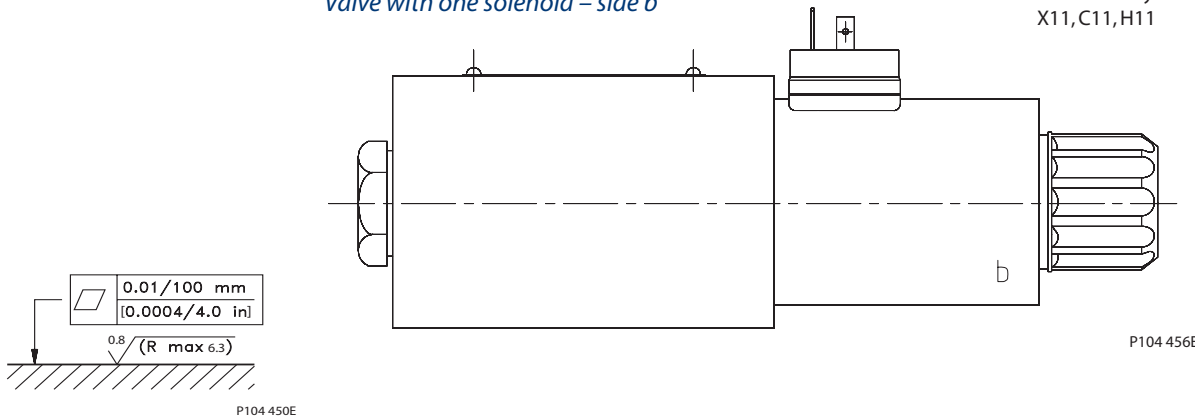
Dimensions: mm [in]



Functional symbols
R11, R21, A51, P51, Y51,
C51, Z51, H51, B51, M21,
X25, J15, J75

Valve with one solenoid - side b

Functional symbols
X11, C11, H11

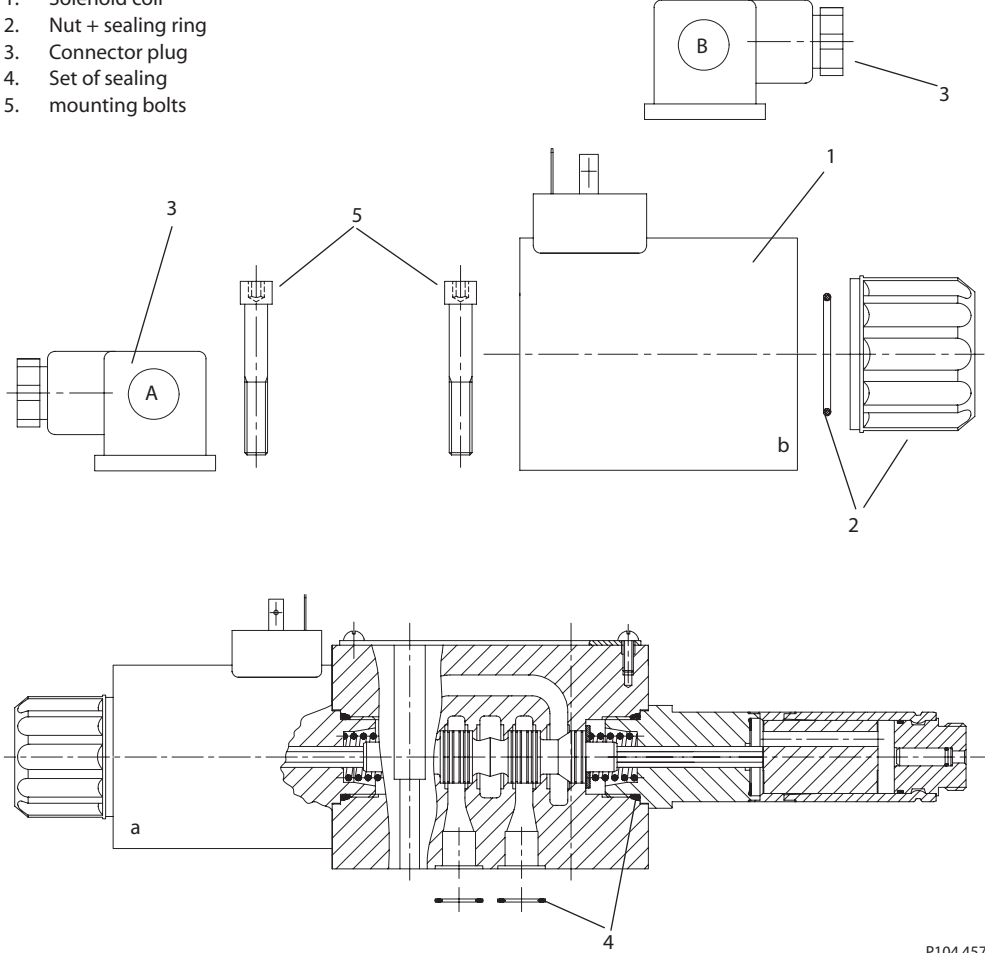


Required surface finish of
interface

P104 456E

REPLACEMENT PARTS

- 1. Solenoid coil
- 2. Nut + sealing ring
- 3. Connector plug
- 4. Set of sealing
- 5. mounting bolts



P104 457E

Solenoid

Voltage	E1 DIN 43650	E2 DIN 43650 w/Diode	E5 DIN w/Rectifier	E8 Lead Wires	E9 Lead Wires w/ Diode	E10 Deutsch on Leads	E11 Deutsch on Leads w/Diode	E12 Deutsch	E13 Deutsch w/Diode
Ordering Number									
01200	158-8019	***	***	***	***	158-8102	158-8099	11041824	158-8105
02400	158-8021	***	***	***	***	***	***	158-8100	***
11550	***	***	158-8027	Not Available					
23050	***	***	158-8020						

*** Consult Factory

**REPLACEMENT PARTS
 (continued)**

Solenoid nut

Manual override Code	Type of nut	Ordering number
No Code	Standard nut	158-8068
N1	Nut with rubber cap	Consult factory

Connector (DIN 43650)

Code	Model	Connector plug A	Connector plug B
		gray	black
Ordering number			
K1	No rectifier or LED	158-8076	158-8075
K2	With LED	Consult factory	Consult factory

Seal kit

Type	Ordering number
Buna-N	158-8023
Viton	158-8094

Mounting bolts – set

Type	Ordering number
M6 x 40 bolts	158-8024
1/4-20 bolts	158-8095



Cartridge Valves Technical Information

Directional control valves DCV 05

Notes



Directional control valves
DCV05