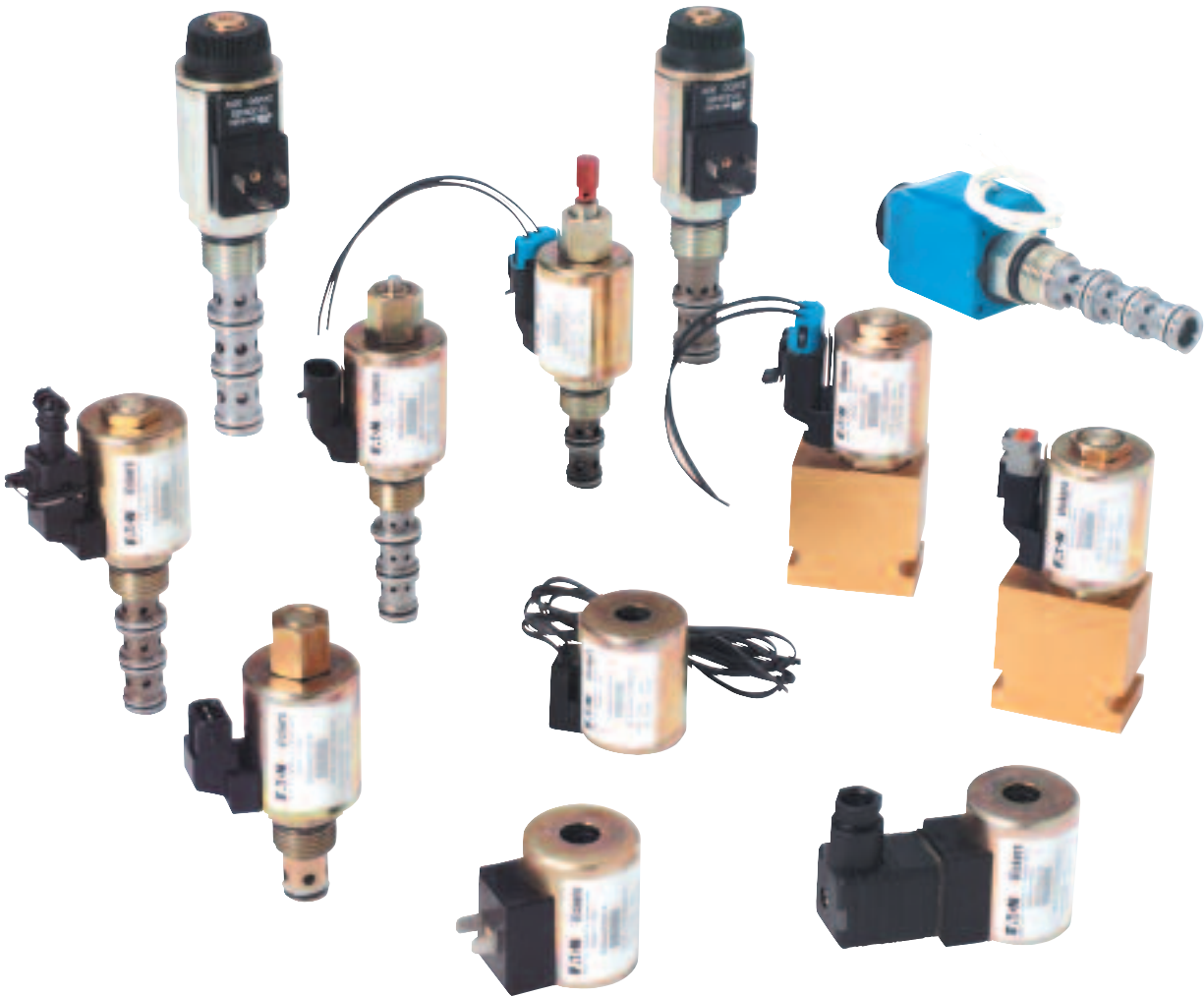




Solenoid Valves

Poppet and Spool type solenoid actuated valves for applications up to 350 bar (5000 psi) and 227 L/min (60 USgpm)



Solenoid Valves

Section Contents

Model	Typical Application Pressure bar (psi)	Rated Flow L/min (USgpm)	Page
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2-way, 2-position, Normally Closed, Poppet Type			
SV5-8-C/CM	210 (3000)	23 (6)	A-6
SV15-8-C/CM	350 (5000)	37 (10)	A-8
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SBV12-8-C	350 (5000)	1 (0.25)	A-12
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SV13-16-C/CM/CR	350 (5000)	132 (35)	A-36
SV2-20-C/CM/CR	210 (3000)	227 (60)	A-38
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Solenoid Valves

Section Contents (cont.)



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SV12-8-4/4M	350 (5000)	13 (4)	A-112
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SV7-10-4/4P/4S	210 (3000)	17 (5)	A-126
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Manual override, type P, S			A-150
Manual override, type M, R			A-151

Solenoid Valves

Section Overview

Quality Products and Innovative solutions

This catalog gives basic specifications for the full line of Vickers screw-in cartridge solenoid valves. Its purpose is to provide a quick, convenient reference tool when choosing Vickers cartridge valves or designing a system using these components.

Two pressure ratings are shown for all products featured in this catalog - typical application pressure and fatigue pressure. The typical application pressure rating is the maximum recommended operating pressure for the valve in a given system. The fatigue pressure rating is the pressure for the valve to be free for infinite life from metal fatigue.

Vickers solenoid valves are offered with the widest choice of flow paths and position options to satisfy most requirements. These options include:

- 2-way, 2-position, normally open and normally closed spool and poppet valves
- 3-way, 2-position spool valves
- 4-way, 2-position spool valves
- 4-way, 3-position spool valves

Valve Features and Benefits

- Products in this catalog have been fatigue tested for one million cycles at 132% or 10 million cycles at 115% of rated pressure
- Rated flows up to 227 L/min (60 USgpm)
- Poppet and spool designs
- Standard cartridge cavities
- All operating parts are hardened steel, ground and honed for long life and low leakage
- Cartridge design for maximum flexibility and minimal manifold space requirements
- Optional low-cost manual override is available on selected models

- All exposed surfaces are zinc dichromate plated to resist corrosion
- All aluminum manifolds are gold anodized to resist corrosion
- Reliable, economical and compact
- Manual override options are available on all solenoid valves except SBV series valves

Note

Solenoid valve coil details are shown in section C.

Solenoid Valves

Coils

Coil Features and Benefits

Note
Solenoid valve coil details are shown in section C.

The solenoid operated directional valves in this catalog are offered with a choice of standard voltages and several types of electrical connections. For other coil ratings and connections, consult your Eaton representative.

Standard AC coils are internally rectified to supply them with DC current, therefore they have no "inrush" current value.

- Coils are rated for continuous duty
- Coils are interchangeable for serviceability
- Variety of voltages and terminations
- Coils offer a one-piece weather-proof encapsulated design, eliminating the need for extra seals
- AC voltage coils are internally full-wave rectified for 50 or 60 cycle (Hz) applications

An arc suppression diode molded into the coil is available as a standard option on DC coils. Also available, are explosion-proof coils and cartridges that are CSA approved and recognized by the US Underwriters Laboratories.

Protection of Internally Rectified Coils

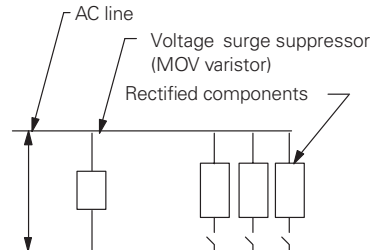
Note
Solenoid valve coil details are shown in section C.

The rectifiers used in these coils may require protection from high voltage surges in some electrical circuits containing highly inductive or capacitive components. These include certain types of motors, solenoids, relays, and transformers.

Protection is simple and inexpensive. It consists of installing a commercially available voltage surge suppressor like the General Electric MOV varistor V130LA20A for 115 volts AC or the V250LA20A for 230 volts AC, across the AC line

supplying the rectified components. A single suppressor will normally protect all of the rectified components in the circuit, as shown in the surge suppressor circuit diagram below.

Surge suppressor circuit diagram



All voltage surge producing components must be installed on this side of suppressor.

Switches or relay contacts only. Relay coils must be connected on the line side of the surge suppressor.

No inductive or capacitive loads can be installed between the surge suppressor and rectified valves without additional precautions.



WARNING

Application of these products beyond published performance specifications may cause valve malfunction which may result in personal injury and/or damage to the machine.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve or coil failure.



CAUTION

Coils may be hot to touch if used in continuous applications.

SV5-8-C/CM

Poppet type, normally closed solenoid valve, 210 bar

Description

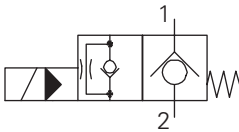
The SV5-8-C is a 2-way, 2-position, poppet type, pilot operated, normally closed, solenoid valve. This valve is used in applications requiring low leakage, such as single acting cylinder applications.

Operation

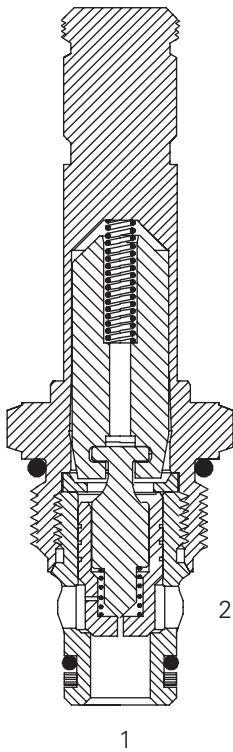
In the de-energized position, the SV5-8-C blocks flow from port 2 to port 1, and free flow is allowed from port 1 to port 2.

In the energized position, flow from port 1 to port 2 is restricted and free flow is allowed from port 2 to port 1.

Functional Symbol



Sectional View



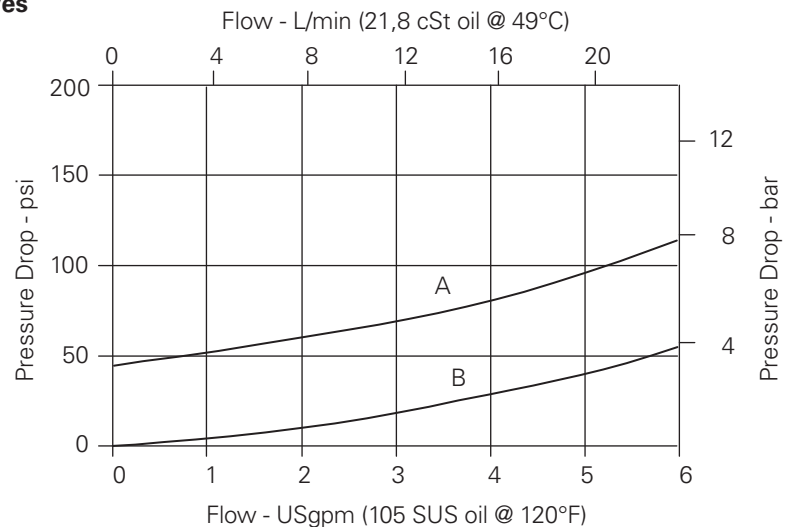
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	23 L/min (6 USgpm)
Internal leakage	less than 5 drops/min. max @ 210 bar (3000 psi)
Coil duty	Continuous from 85% to 110% of nominal voltage
Response times (100% rated voltage and flow)	Energize: 18 ms De-Energize: 46 ms
Temperature range	-40° to 120°C (-40° to 248°F)
Cavity	C-8-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,28 kg (0.62 lbs)
Seal kit	02-165875 (Buna-N), 02-165877 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

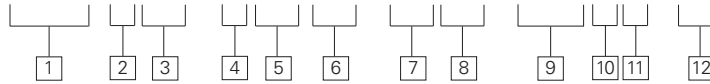
Pressure Drop Curves

Cartridge only



- A** - Port 1 to port 2 de-energized
- B** - Port 2 to port 1 energized

SV5 – 8 (V) – C (M) (F) – (A) ** – *** * S – 00**



- 1 Function**
SV5 - Solenoid valve

- 2 Size**
8 - 8 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
C - Normally closed

- 5 Manual override option**
Blank - No manual override
M - Knob type
For valve dimensions with manual override option installed see page A-153.

- 6 Filter option**
Blank - None
F - Filter screen

- 7 Valve housing material**
Omit for cartridge only
A - Aluminum

 - 8 Port Size**
- | CODE | PORT SIZE | HOUSING NUMBER |
|------|----------------|----------------|
| 0 | Cartridge only | |
| 2G | 1/4" BSPP | 02-160727 |
| 3G | 3/8" BSPP | 02-160728 |
| 4T | SAE 4 | 02-160730 |
| 6T | SAE 6 | 02-160731 |
| 8T | SAE 8 | 02-160732 |
- See section J for housing details.

- 9 Voltage rating**
- | | |
|--------------|----------------------|
| 00 - No coil | 24A - 24VAC |
| 12D - 12VDC | 115A - 115VAC |
| 24D - 24VDC | 230A - 230VAC |
| 36D - 36VDC | 12B - 12VDC/w diode* |
| | 24B - 24VDC/w diode* |
- *Optional arc suppression diode.

- 10 Connector types**
Blank - No coil
G - SO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

- 11 Coil series**
S - 8 series, 20 W
For coil part numbers and dimensions see Section C.

- 12 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")



Dimensions

mm (inch)

Torque cartridge in aluminum or steel housing
34-41 Nm (25-30 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV15-8-C/CM

Poppet type, normally closed solenoid valve, 350 bar

Description

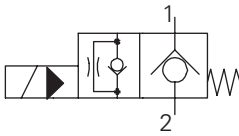
The SV15-8-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in cartridge solenoid valve.

Operation

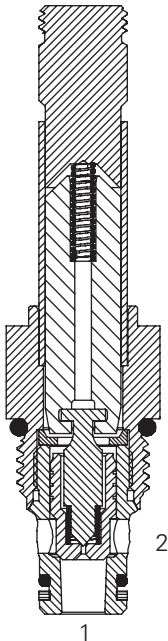
In the de-energized position, this valve blocks flow from port 2 to port 1 and free flow is allowed from port 1 to port 2.

In the energized position, flow from port 1 to port 2 is restricted while free flow is allowed from port 2 to port 1.

Functional Symbols



Sectional View



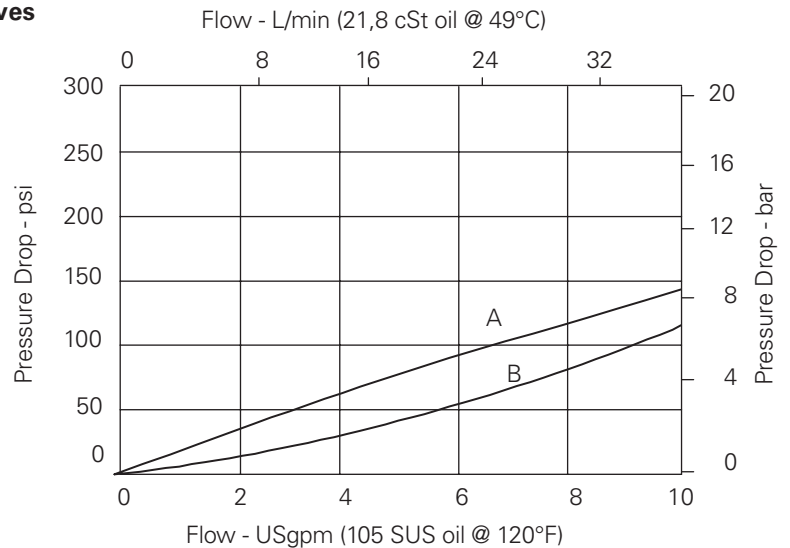
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	37 L/min (10 USgpm)
Internal leakage, port 2 to port 1	5 drops/min. max @ 210 bar (3000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-8-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,11 kg (0.25 lbs)
Seal kit	02-165875 (Buna-N), 02-165877 (Viton®) Viton is a registered trademark of E.I. DuPont

Pressure Drop Curves

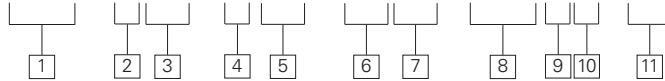
Cartridge only



A - Port 1 to port 2

B - Port 2 to port 1

SV15 – 8 (V) – C (M) – (S) ** – *** * P – 00**



1 Function
SV15 - Solenoid valve

2 Size
8 - 8 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Manual override option
Blank - No manual override
M - Manual override
 For valve dimensions with manual override option installed see page A-153.

6 Valve housing material
Blank - Cartridge only
S - Steel

Dimensions
 mm (inch)

Torque cartridge in aluminum or steel housing
 34-41 Nm (25-30 ft. lbs)

Note
 When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING

 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-160733
3G	3/8" BSPP	02-160734
4T	SAE 4	02-160736
6T	SAE 6	02-160737
8T	SAE 8	02-160738

8 Voltage rating

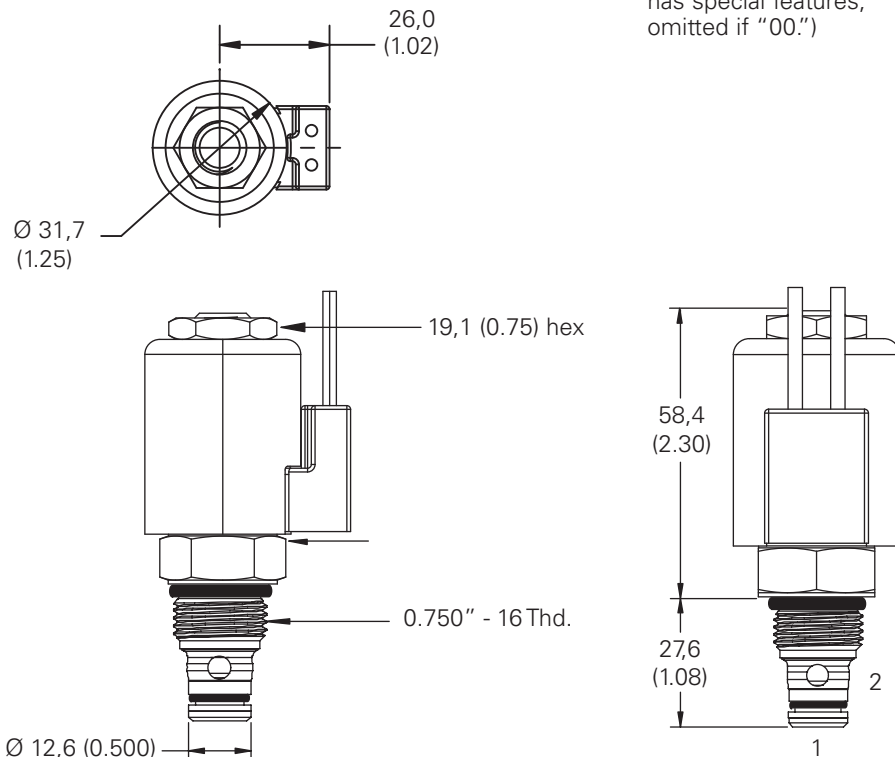
00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

10 Coil series
P - 8 series, 23 W
 For coil part numbers and dimensions see Section C.

11 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")



SBV11-8-C

Bi-directional, normally closed solenoid valve

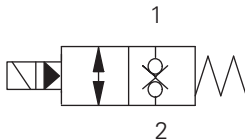
Description

The SBV11-8-C is a 2-way, 2-position, bi-directional, normally closed, poppet type, screw-in cartridge solenoid valve.

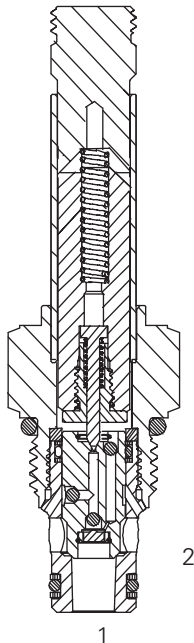
Operation

In the de-energized position, flow is blocked in both directions. In the energized position, flow is allowed in both directions.

Functional Symbol



Sectional View



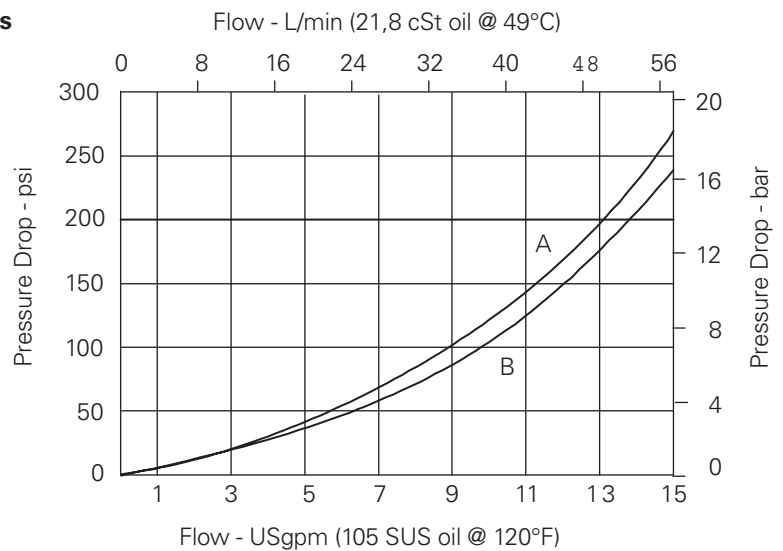
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	60 L/min (15 USgpm)
Internal leakage, port 1 to port 2 & port 2 to port 1	5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-8-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum or steel
Weight cartridge only	0,12 kg (0.26 lbs)
Seal kit	02-160777 (Buna-N), 02-160778 (Viton®) Viton is a registered trademark of E.I. DuPont

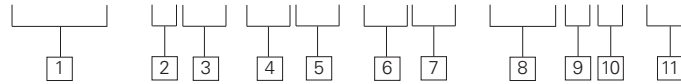
Pressure Drop Curves

Cartridge only



A - Port 1 to port 2
B - Port 2 to port 1

SBV11 – 8 (V) – C (*) – (*) ** – *** * P – 00**



1 Function
SBV11 - Solenoid bi-directional valve

2 Size
8 - 8 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Manual Override Options
Blank - No manual override
M - Manual override

6 Valve housing material
Blank - Cartridge only
A - Aluminum
S - Steel

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum	Steel
0	Cartridge only		
2G	1/4" BSPP	02-160727	02-160733
3G	3/8" BSPP	02-160728	02-160734
4T	SAE 4	02-160730	02-160736
6T	SAE 6	02-160731	02-160737
8T	SAE 8	02-160732	02-160738

See section J for housing details.

8 Voltage rating

00 - No coil
12D - 12VDC
24D - 24VDC
36D - 36VDC

24A - 24VAC
115A - 115VAC
230A - 230VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
 *Optional arc suppression diode.

9 Connector types

Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

10 Coil series

P - 8 series, 23 W
 For coil part numbers and dimensions see Section C.

11 Special features

00 - None
 (Only required if valve has special features, omitted if "00.")

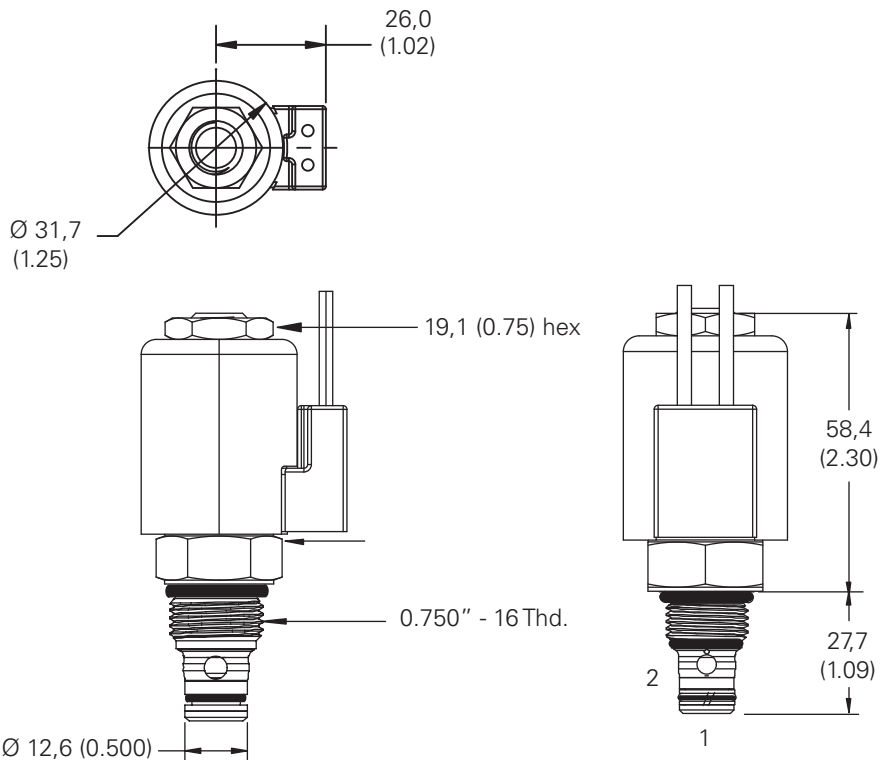
Dimensions

mm (inch)

Torque cartridge in aluminum or steel housing
 34-41 Nm (25-30 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING
 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings must be used for operating pressures above 210 bar (3000 psi).

SBV12-8-C

Bi-directional, normally closed solenoid valve (low flow version)

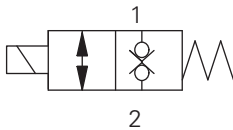
Description

The SBV12-8-C is a 2-way, 2-position, bi-directional, direct acting, normally closed, poppet type, screw-in cartridge solenoid valve.

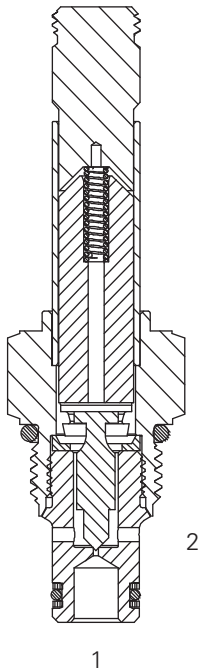
Operation

In the de-energized position, flow is blocked in both directions. In the energized position, flow is allowed in both directions.

Functional Symbol



Sectional View



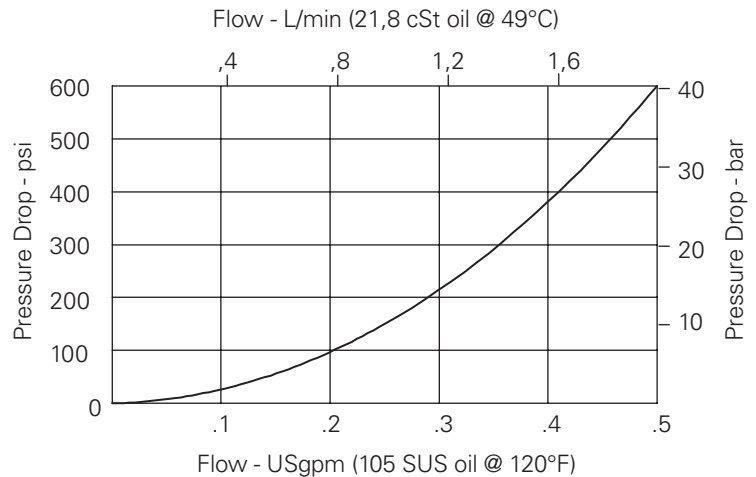
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

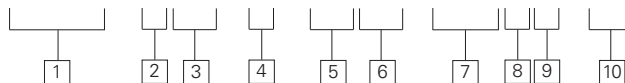
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	1 L/min (0.25 USgpm)
Internal leakage, port 1 to port 2 and port 2 to port 1	5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-8-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum or steel
Weight cartridge only	0,120 kg (0.26 lbs)
Seal kit	02-160777 (Buna-N), 02-160778 (Viton®) Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve

Cartridge only



SBV12 – 8 (V) – C – (*) ** – *** * P – 00**



1 Function
SBV12 - Solenoid bi-directional valve

2 Size
8 - 8 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Valve housing material
Blank - Cartridge only
A - Aluminum
S - Steel

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum	Steel
0	Cartridge only		
2G	1/4" BSPP	02-160727	02-160733
3G	3/8" BSPP	02-160728	02-160734
4T	SAE 4	02-160730	02-160736
6T	SAE 6	02-160731	02-160737
8T	SAE 8	02-160732	02-160738

See section J for housing details.

7 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

8 Connector types

- Blank** - No coil
- G** - ISO 4400 DIN 43650
- Q** - Spade terminals
- W** - Leadwire
- N** - Deutsch (DC only)
- Y** - Amp JR (DC only)
- D** - Metripack 150 male (DC only)
- J** - Metripack 280 male (DC only)

9 Coil series

P - 8 series, 23 W
 For coil part numbers and dimensions see Section C.

10 Special features

00 - None
 (Only required if valve has special features, omitted if "00.")

Dimensions

mm (inch)

Torque cartridge in aluminum or steel housing
 34-41 Nm (25-30 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, coil nut is included.



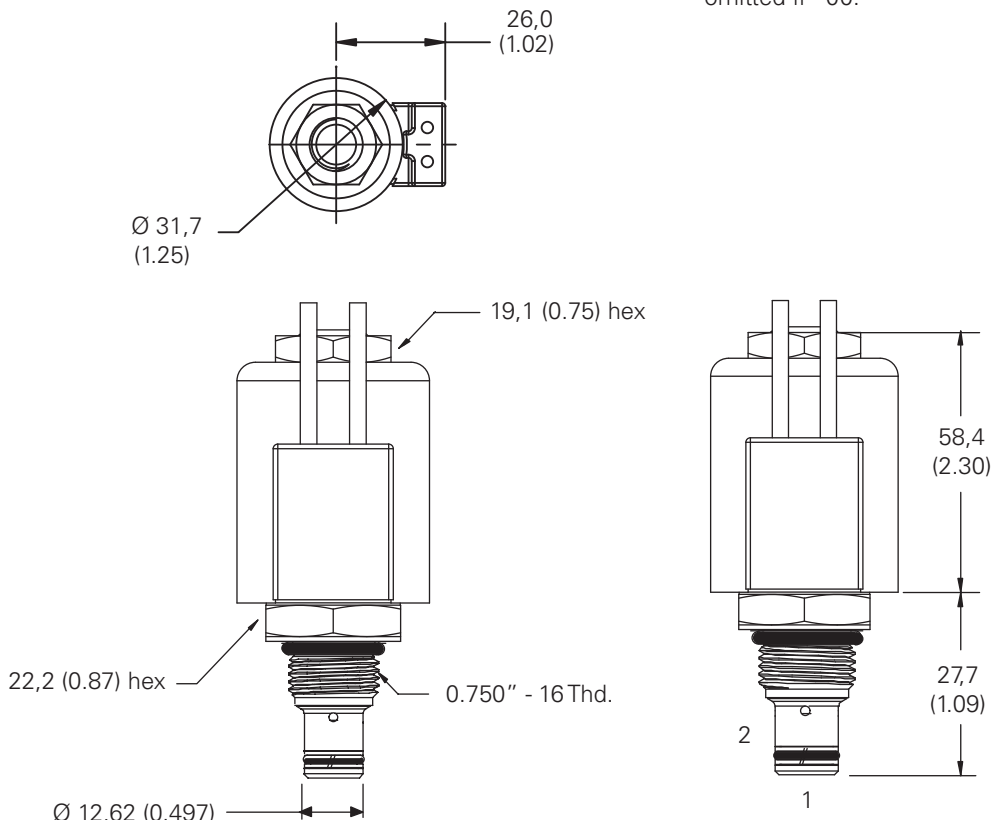
WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



WARNING

Aluminum housings can be used for pressures up to 210 bar (3000 psi). Steel housings must be used for operating pressures above 210 bar (3000 psi).



SV1-10-C/CM/CR

Poppet type, normally closed solenoid valve

Description

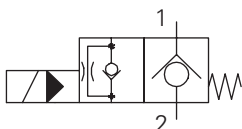
The SV1-10-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in cartridge solenoid valve.

Operation

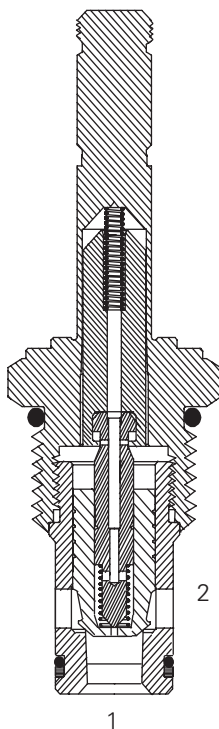
In the de-energized position, this valve blocks flow from port 2 to port 1 and free flow is allowed from port 1 to port 2.

In the energized position, flow from port 1 to port 2 is restricted while free flow is allowed from port 2 to port 1.

Functional Symbol



Sectional View



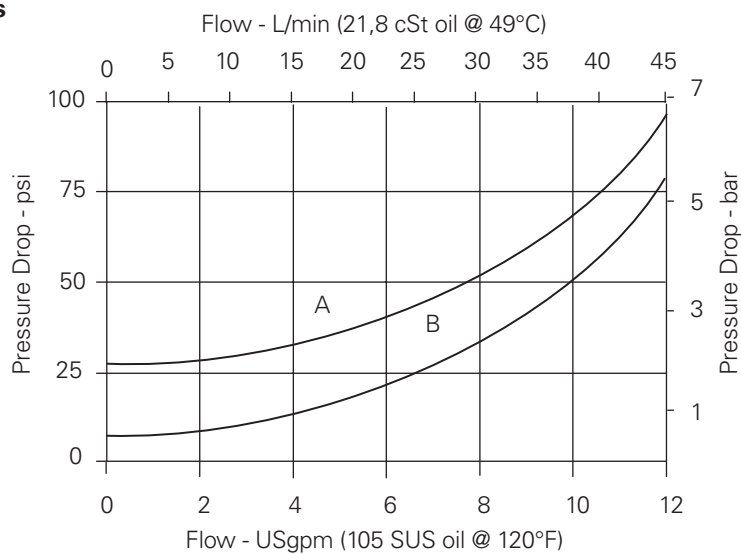
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

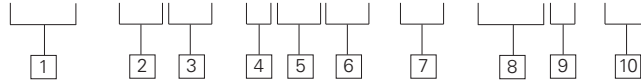
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	45 L/min (12 USgpm)
Internal leakage	less than 5 drops/min. max @ 210 bar (3000 psi)
Coil duty	Continuous from 85% to 110% of nominal voltage
Response times (100% rated voltage and flow)	Energize: 18 ms De-Energize: 46 ms
Temperature range	-40° to 120°C (-40° to 248°F)
Cavity	C-10-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,4 kg (0.87 lbs)
Seal kit	565803 (Buna-N), 566086 (Viton®) Viton is a registered trademark of E.I. DuPont

Pressure Drop Curves

Cartridge only



SV1 - 10 (V) - C (*) (F) - ** - *** - 00**



1 Function
SV1 - Solenoid valve

2 Size
10 - 10 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Manual Override Options
Blank - No manual override
M - Knob type
R - Cable type
 For valve dimensions with manual override option installed see page A-153.

6 Filter option
Blank - None
F - Filter screen

Dimensions
 mm (inch)

Torque cartridge in aluminum housing 47-54 Nm (35-40 ft. lbs)

Note
 When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
3B	3/8" BSPP	02-175462
6T	SAE 6	566151
2G	1/4" BSPP	876702
3G	3/8" BSPP	876703
6H	SAE 6	876700
8H	SAE 8	876701

See section J for housing details.

8 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

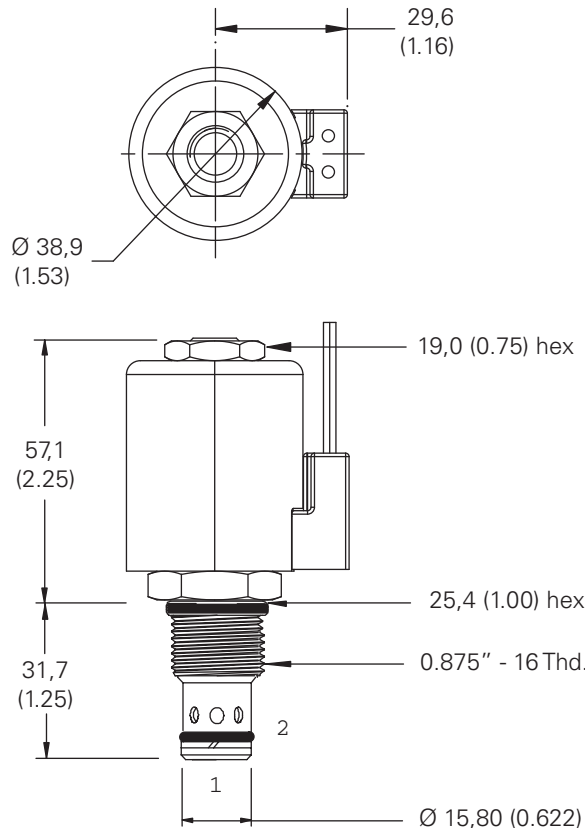
*Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

For coil part numbers and dimensions see Section C.

10 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

Note
 Use J series, 23 W coils with this solenoid valve.



SV11-10-C/CM

Poppet type, normally closed solenoid valve, 350 bar

Description

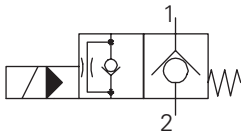
The SV11-10-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in cartridge solenoid valve.

Operation

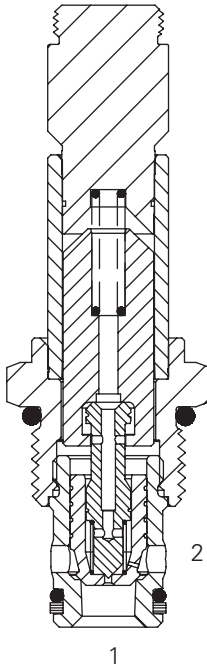
In the de-energized position, this valve blocks flow from port 2 to port 1 and free flow is allowed from port 1 to port 2.

In the energized position, flow from port 1 to port 2 is restricted while free flow is allowed from port 2 to port 1.

Functional Symbol



Sectional View



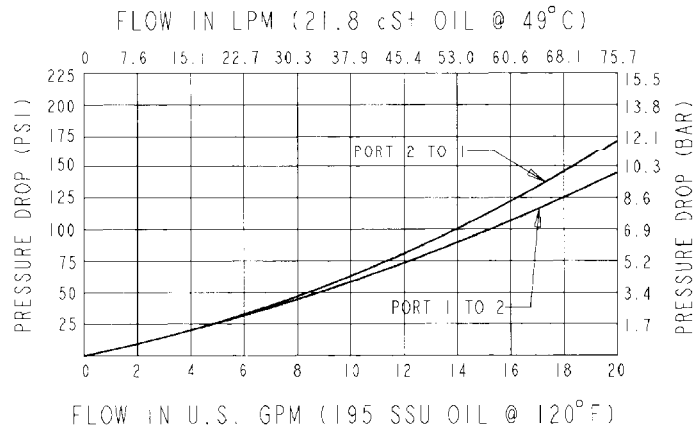
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	45 L/min (12 USgpm)
Internal leakage, port 2 to port 1	5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,18 kg (0.39 lbs)
Seal kit	565803 (Buna-N), 566086 (Viton®) Viton is a registered trademark of E.I. DuPont

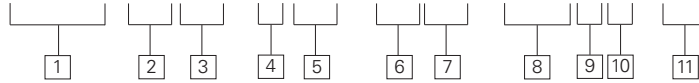
Pressure Drop Curves

Cartridge only



- A - Port 1 to port 2 de-energized
- B - Port 2 to port 1 energized

SV11 – 10 (V) – C (M) – (S) ** – *** * H – 00**



- 1 Function**
SV11 - Solenoid valve

- 2 Size**
10 - 10 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
C - Normally closed

- 5 Manual override option**
Blank - No manual override
M - Manual override

For valve dimensions with manual override option installed see page A-153.

- 6 Valve housing material**
Blank - Cartridge only
S - Steel

 - 7 Port Size**
- | CODE | PORT SIZE | HOUSING NUMBER |
|------|----------------|----------------|
| 0 | Cartridge only | |
| 2G | 1/4" BSPP | 02-175102 |
| 3G | 3/8" BSPP | 02-175103 |
| 6T | SAE 6 | 02-175100 |
| 8T | SAE 8 | 02-175101 |

See section J for housing details.

- 8 Voltage rating**
- | | |
|--------------|----------------------|
| 00 - No coil | 24A - 24VAC |
| 12D - 12VDC | 115A - 115VAC |
| 24D - 24VDC | 230A - 230VAC |
| 36D - 36VDC | 12B - 12VDC/w diode* |
| | 24B - 24VDC/w diode* |
- *Optional arc suppression diode.

- 9 Connector types**
- Blank - No coil
 G - ISO 4400 DIN 43650
 Q - Spade terminals
 W - Leadwire
 N - Deutsch (DC only)
 Y - Amp JR (DC only)
 D - Metripack 150 male (DC only)
 J - Metripack 280 male (DC only)

- 10 Coil series**
- H - 10 series, 29 W
 For coil part numbers and dimensions see Section C.

- 11 Special features**
- 00 - None
 (Only required if valve has special features,

Dimensions

mm (inch)

Torque cartridge in steel housing 68-75 Nm (50-55 ft. lbs)

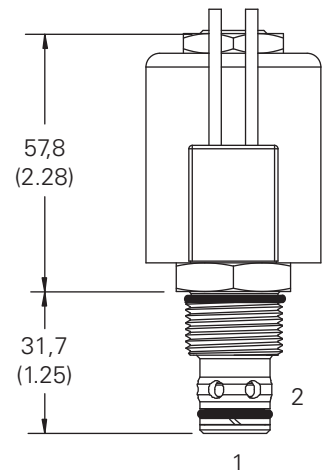
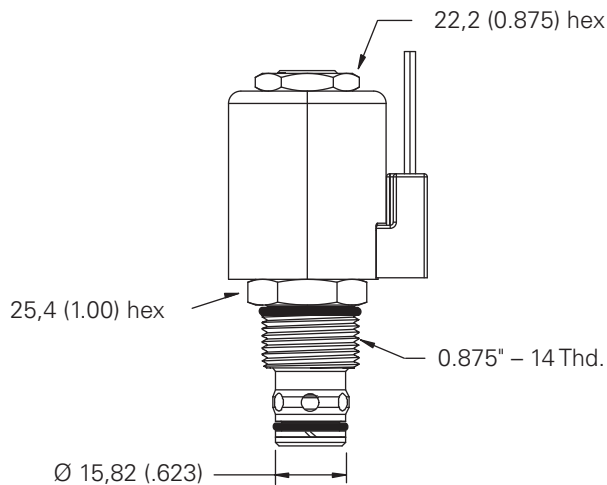
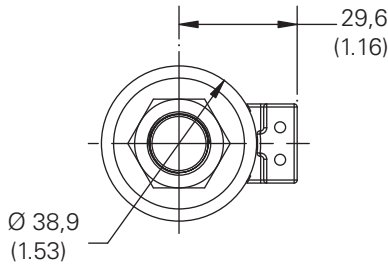
Note

When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SBV11-10-C

Bi-directional, normally closed solenoid valve

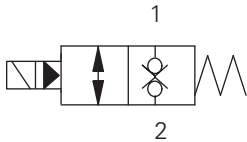
Description

The SBV11-10-C is a 2-way, 2-position, bi-directional, normally closed, poppet type, screw-in cartridge, solenoid valve.

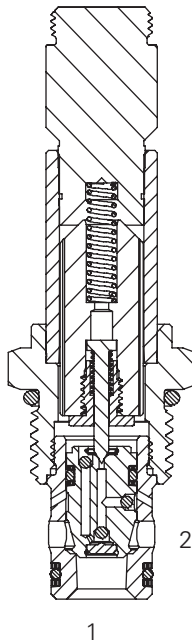
Operation

In the de-energized position, flow is blocked in both directions. In the energized position, flow is allowed in both directions.

Functional Symbol



Sectional View



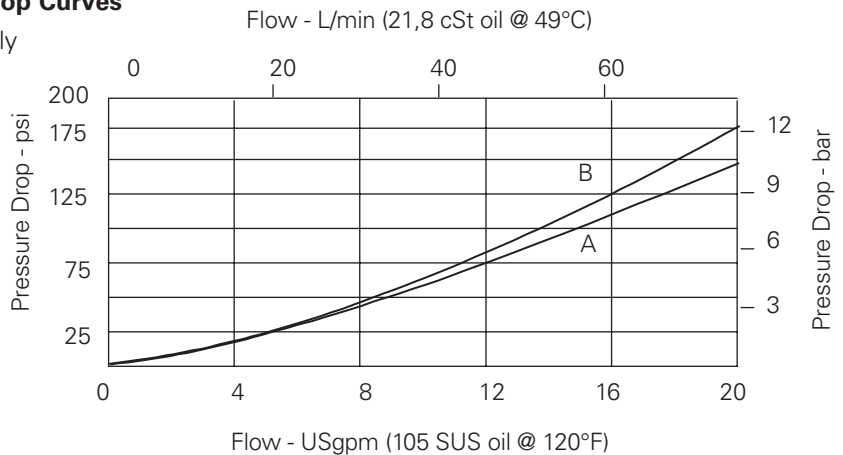
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	76 L/min (20 USgpm)
Internal leakage	5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum or steel
Weight cartridge only	0,18 kg (0.39 lbs)
Seal kit	565806 (Buna-N), 889627 (Viton®) Viton is a registered trademark of E.I. DuPont

Pressure Drop Curves

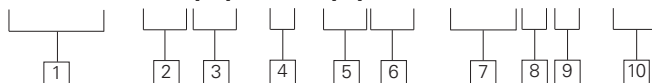
Cartridge only



A - Port 1 to port 2

B - Port 2 to port 1

SBV11 - 10 (V) - C - (*) ** - *** * H - 00**



1 Function
SBV11 - Solenoid bi-directional valve

2 Size
10 - 10 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Valve housing material
Blank - Cartridge only
A - Aluminum
S - Steel

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum	Steel
0	Cartridge only		
2G	1/4" BSPP	876702	02-175102
3G	3/8" BSPP	876703	02-175103
3B	3/8" BSPP	02-175462	-
6H	SAE 6	876700	-
6T	SAE 6	566151	02-175100
8H	SAE 8	876701	-
8T	SAE 8	-	02-175101

See section J for housing details.

7 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

8 Connector types

- Blank** - No coil
- G** - ISO 4400 DIN 43650
- Q** - Spade terminals
- W** - Leadwire
- N** - Deutsch (DC only)
- Y** - Amp JR (DC only)
- D** - Metripack 150 male (DC only)
- J** - Metripack 280 male (DC only)

9 Coil series

H - 10 series, 29 W
 For coil part numbers and dimensions see Section C.

10 Special features

00 - None
 (Only required if valve has special features, omitted if "00.")

Dimensions

mm (inch)

Torque cartridge in housing

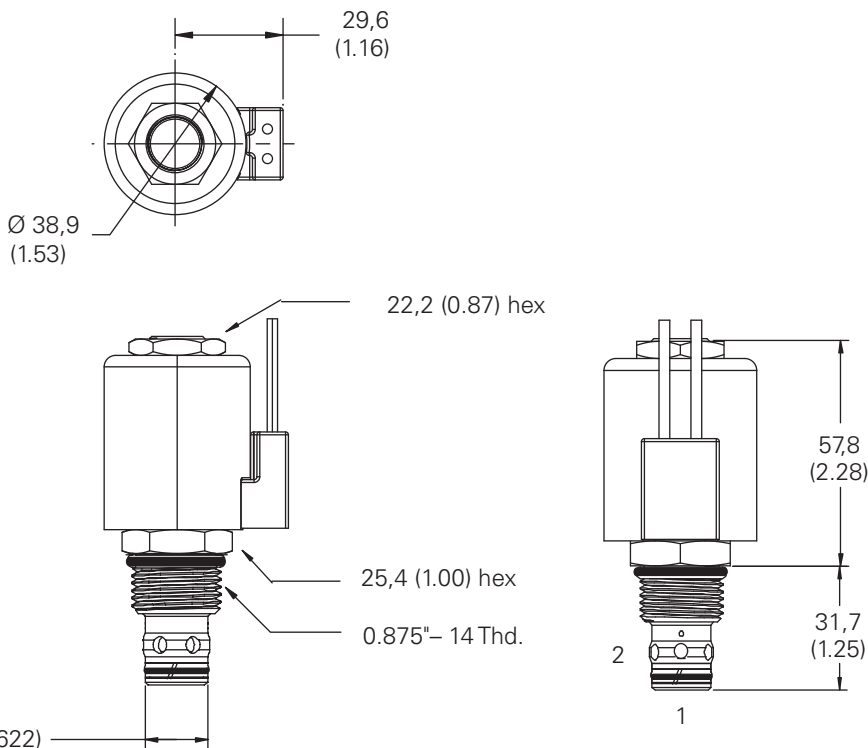
- A** - 47-54 Nm (35-40 ft. lbs)
- S** - 68-75 Nm (50-55 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

WARNING
 Aluminum housings can be used for pressures up to 210 bar (3000 psi) Steel housings must be used for operating pressures above 210 bar (3000 psi).



SV2-10-C/CM/CR

2-way, poppet type, normally closed solenoid valve

Description

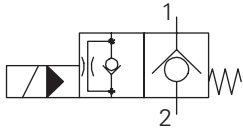
The SV2-10-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in cartridge solenoid valve.

Operation

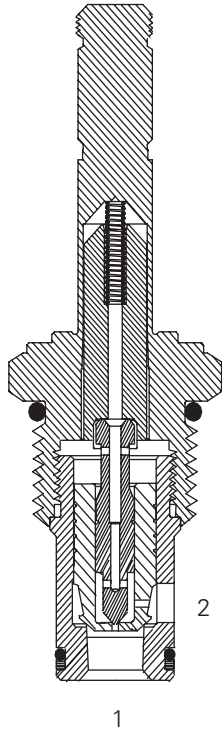
In the de-energized position, this valve blocks flow from port 2 to port 1 and free flow is allowed from port 1 to port 2.

In the energized position, flow from port 1 to port 2 is restricted while free flow is allowed from port 2 to port 1.

Functional Symbol



Sectional View



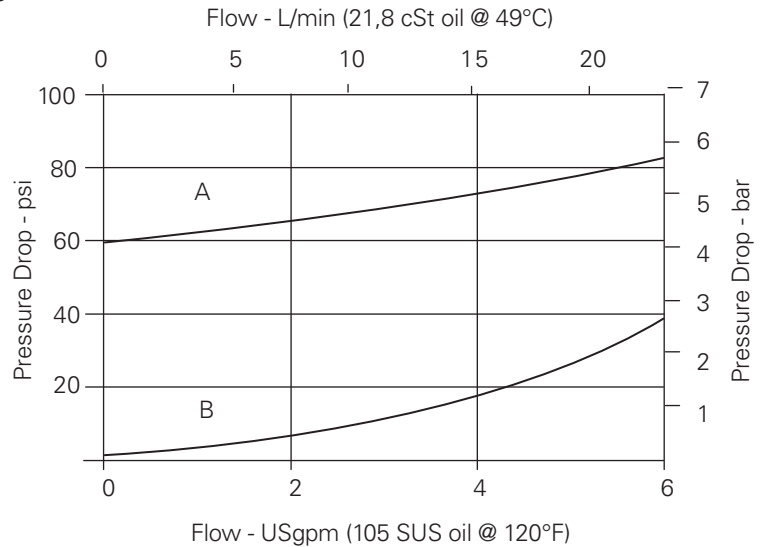
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	23 L/min (6 USgpm)
Internal leakage	5 drops/min. max @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight cartridge only	0,4 kg (0.87 lbs)
Seal kit	565803 (Buna-N), 566086 (Viton®) Viton is a registered trademark of E.I. DuPont

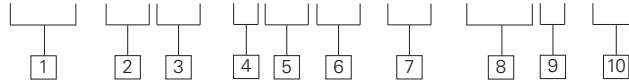
Pressure Drop Curves

Cartridge only



- A - Port 1 to port 2 de-energized
- B - Port 2 to port 1 energized

SV2 – 10 (V) – C (*) (F) – ** – *** * – 00**



1 Function
SV2 - Solenoid valve

2 Size
10 - 10 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Manual Override Options
Blank - No manual override
M - Knob type
R - Cable type
 For valve dimensions with manual override option installed see page A-153.

6 Filter option
Blank - None
F - Filter screen

Dimensions
 mm (inch)
 Torque cartridge in aluminum housing 47-54 Nm (35-40 ft. lbs)

Note
 When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
3B	3/8" BSPP	02-175462*
2G	1/4" BSPP	876702
3G	3/8" BSPP	876703
6T	SAE 6	566151*
6H	SAE 6	876700
8H	SAE 8	876701

See section J for housing details.
 *Light duty housing

8 Voltage rating

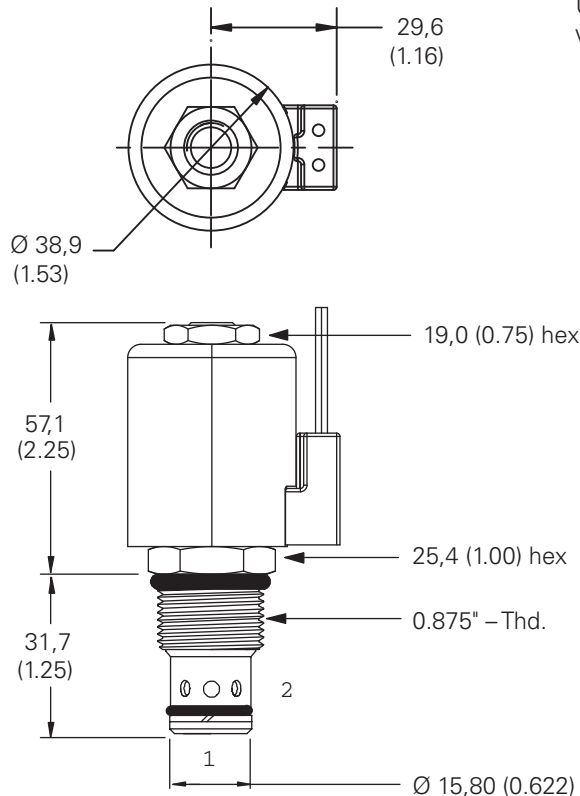
00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)
 For coil part numbers see Section C.

10 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

Note
 Use J series, 23 W coils with this solenoid valve.



SV12-10-C/CM

Poppet type, normally closed solenoid valve, 350 bar

Description

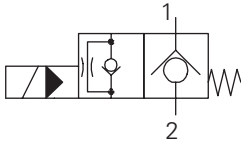
The SV12-10-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in cartridge solenoid valve.

Operation

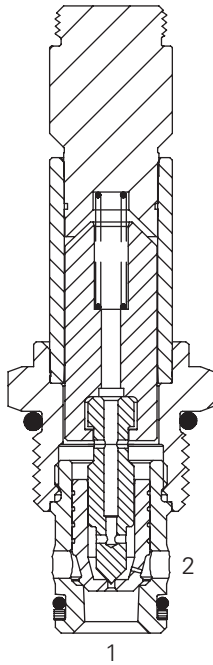
In the de-energized position, this valve blocks flow from port 2 to port 1 and free flow is allowed from port 1 to port 2.

In the energized position, flow from port 1 to port 2 is restricted while free flow is allowed from port 2 to port 1.

Functional Symbol



Sectional View



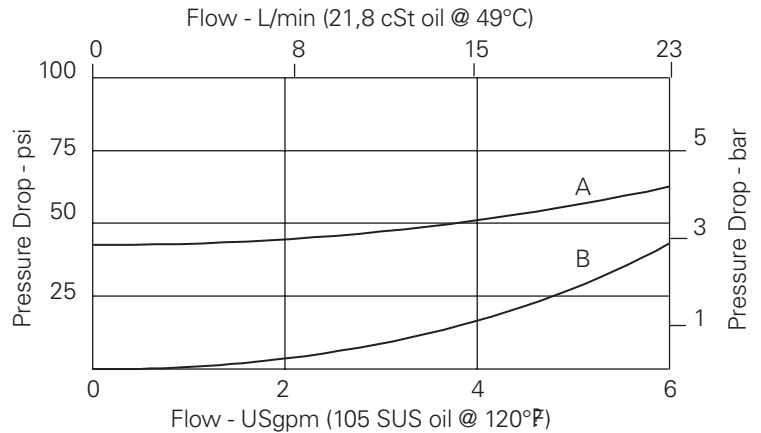
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	23 L/min (6 USgpm)
Internal leakage	5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,18 kg (0.39 lbs)
Seal kit	565803 (Buna-N), 566086 (Viton®) Viton is a registered trademark of E.I. DuPont

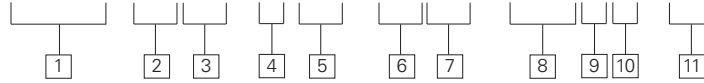
Pressure Drop Curves

Cartridge only



- A - Port 1 to port 2 de-energized
- B - Port 2 to port 1 energized

SV12 – 10 (V) – C (M) – (S) ** – *** * H – 00**



1 Function
SV12 - Solenoid valve

2 Size
10 - 10 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Manual override option
Blank - No manual override
M - Manual override

For valve dimensions with manual override option installed see page A-153.

6 Valve housing material
Blank - Cartridge only
S - Steel

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-175102
3G	3/8" BSPP	02-175103
6T	SAE 6	02-175100
8T	SAE 8	02-175101

8 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

10 Coil series
H - 10 series, 29 W
 For coil part numbers and dimensions see Section C.

11 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

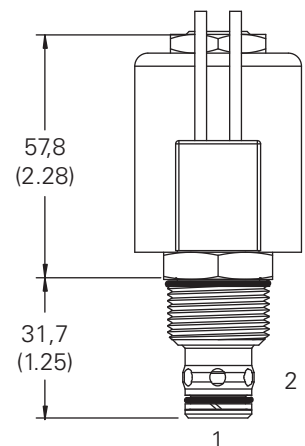
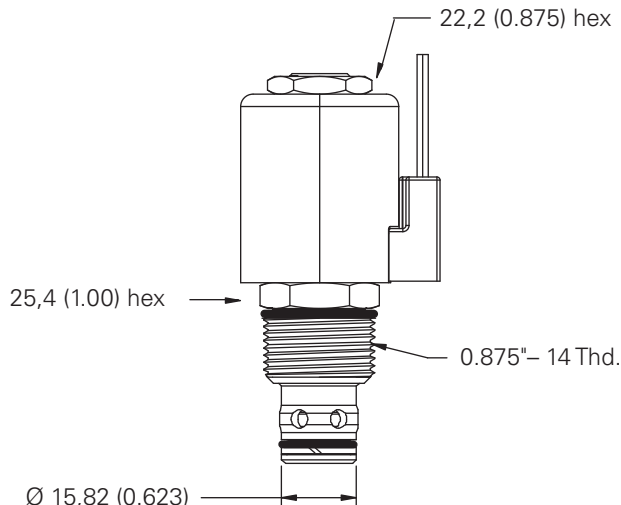
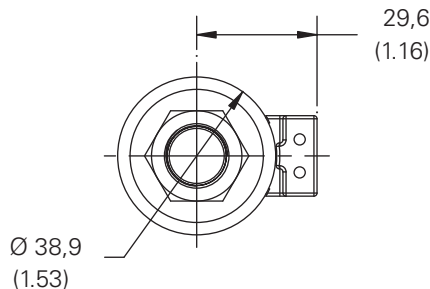
Dimensions

mm (inch)

Torque cartridge in steel housing 68-75 Nm (50-55 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV3-10-C/CM/CR

Poppet type, normally closed solenoid valve (free reverse flow)

Description

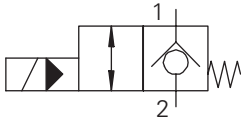
The SV3-10-C is a 2-way, 2-position, poppet-type, normally closed screw-in cartridge solenoid valve.

Operation

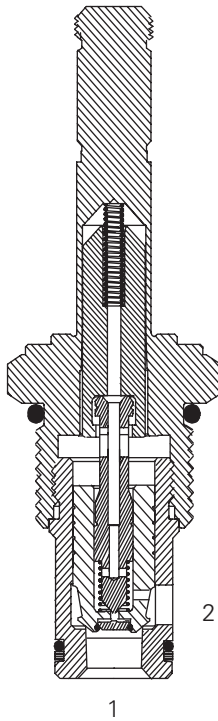
In the de-energized position, flow is blocked from port 2 to port 1 and free flow is allowed from port 1 to port 2.

In the energized position, the poppet lifts to allow flow in either direction.

Functional Symbol



Sectional View



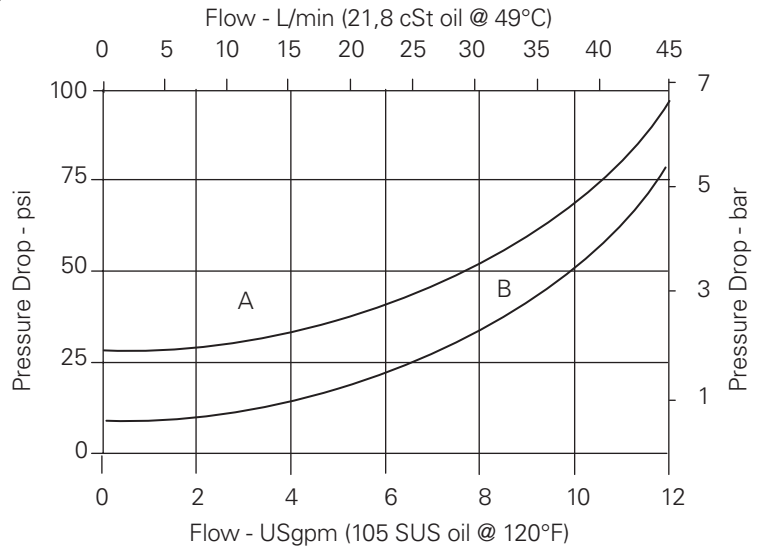
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	45 L/min (12 USgpm)
Internal leakage	less than 5 drops/min. max @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight cartridge only	0,4 kg (0.87 lbs)
Seal kit	565803 (Buna-N), 566086 (Viton®) Viton is a registered trademark of E.I. DuPont

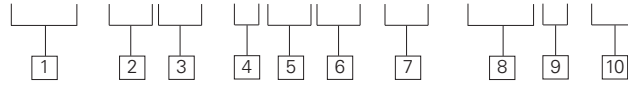
Pressure Drop Curves

Cartridge only



A - Port 1 to port 2 de-energized
B - Port 2 to port 1 energized

SV3 – 10 (V) – C (*) (F) – ** – *** * – 00**



1 Function
SV3 - Solenoid valve

2 Size
10 - 10 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Manual override option
Blank - No manual override
M - Knob type
R - Cable type
 For valve dimensions with manual override option installed see page A-153.

6 Filter option
Blank - None
F - Filter screen

Dimensions

mm (inch)

Torque cartridge in aluminum housing 47-54 Nm (35-40 ft. lbs)

Note
 When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
3B	3/8" BSPP	02-175462*
2G	1/4" BSPP	876702
3G	3/8" BSPP	876703
6T	SAE 6	566151*
6H	SAE 6	876700
8H	SAE 8	876701

*Light duty housing
 See section J for housing details.

8 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

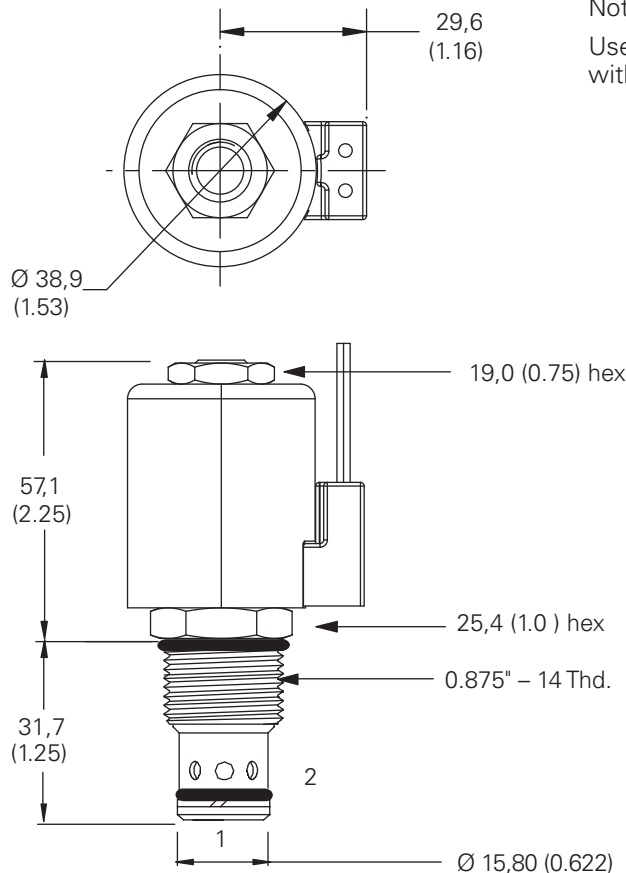
*Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

For coil part numbers and dimensions see Section C.

10 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

Note
 Use J series, 23 W coils with this solenoid valve.



SV13-10-C/CM

Poppet type, normally closed solenoid valve, 350 bar (free release flow)

Description

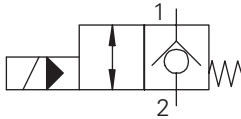
The SV13-10-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in cartridge solenoid valve.

Operation

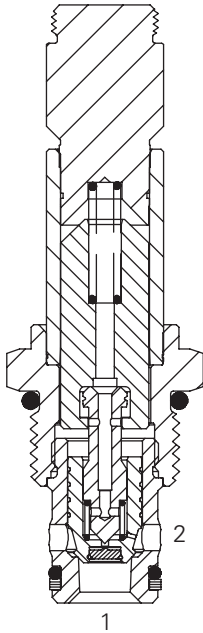
In the de-energized position, this valve blocks flow from port 2 to port 1 and free flow is allowed from port 1 to port 2.

In the energized position, bi-directional flow is allowed between port 1 and port 2.

Functional Symbol



Sectional View



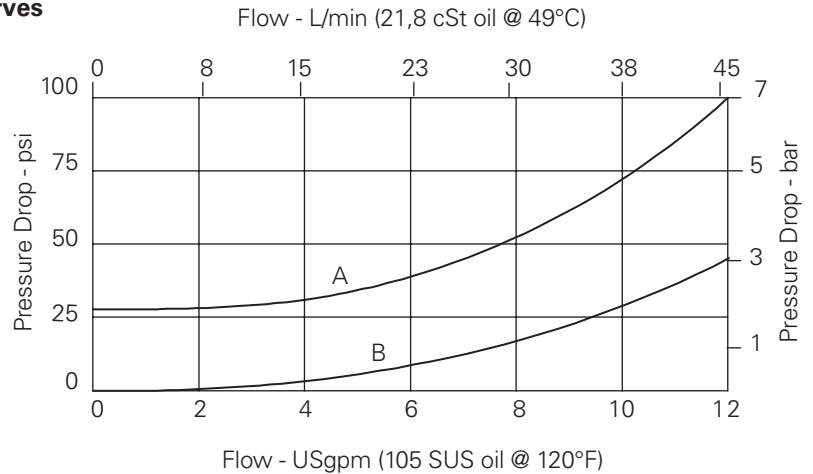
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	45 L/min (12 USgpm)
Internal leakage, port 2 to port 1	5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,18 kg (0.39 lbs)
Seal kit	565803 (Buna-N), 566086 (Viton®) Viton is a registered trademark of E.I. DuPont

Pressure Drop Curves

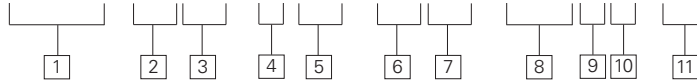
Cartridge only



A - Port 1 to port 2

B - Port 2 to port 1 energized

SV13 – 10 (V) – C (M) – (S) ** – ** * H – 00**



1 Function
SV13 - Solenoid valve

2 Size
10 - 10 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Manual override option
Blank - No manual override
M - Manual override
 For valve dimensions with manual override option installed see page A-153.

6 Valve housing material
Blank - Cartridge only
S - Steel

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-175102
3G	3/8" BSPP	02-175103
6T	SAE 6	02-175100
8T	SAE 8	02-175101

See section J for housing details.

8 Voltage rating

00	No coil
12D	12VDC
24D	24VDC
36D	36VDC
24A	24VAC
115A	115VAC
230A	230VAC
12B	12VDC/w diode*
24B	24VDC/w diode*

*Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

10 Coil series
H - 10 series, 29 W
 For coil part numbers and dimensions see Section C.

11 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

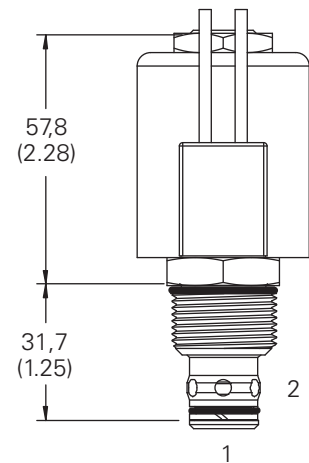
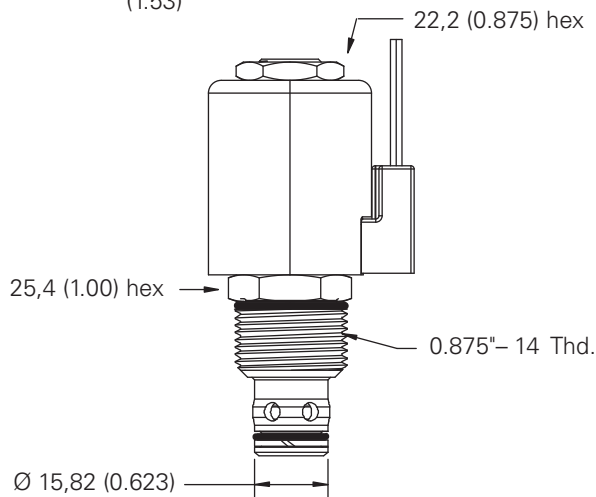
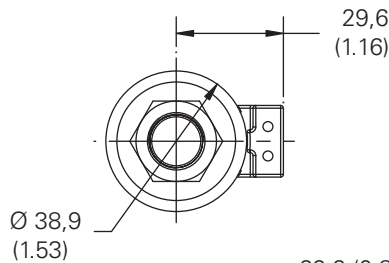
Dimensions

mm (inch)

Torque cartridge in steel housing 68-75 Nm (50-55 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV3-12-C/CM/CR

Poppet type, normally closed solenoid valve (free reverse flow)

Description

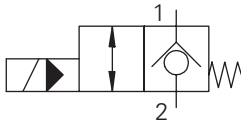
The SV3-12-C is a 2-way, 2-position, poppet-type, pilot-operated, normally closed solenoid cartridge valve.

Operation

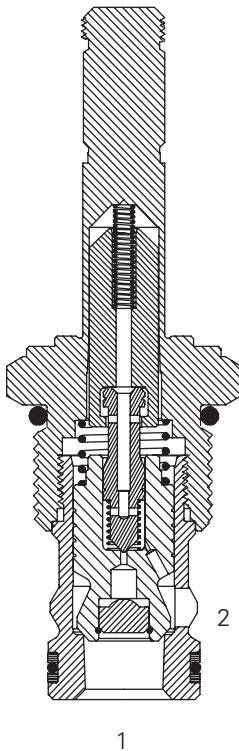
In the de-energized position, flow is blocked from port 2 to port 1 and free flow is allowed from port 1 to port 2.

In the energized position, the poppet lifts to allow flow in either direction.

Functional Symbol



Sectional View



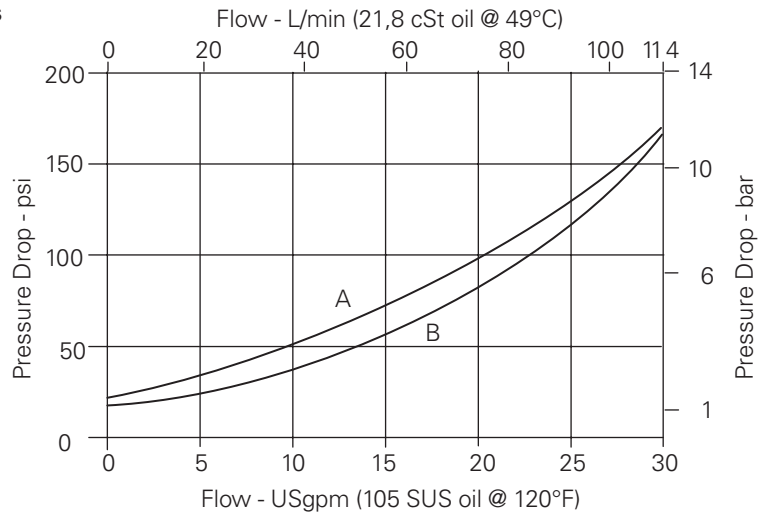
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	114 L/min (30 USgpm)
Internal leakage (port 2 to port 1)	less than 5 drops/min. max @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Response times (100% rated voltage and flow)	Energize: 75 ms De-Energize: 150 ms
Cavity	C-12-2 or C-12-2U Add "U" after number if undercut is required. If undercut is not specified, expect 10 psi@15 USgpm and 20 psi @ 30 USgpm higher pressure drop.
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,336 kg (0.74 lbs)
Seal kit	02-165889 (Buna-N), 02-165888 (Viton®) Viton is a registered trademark of E.I. DuPont

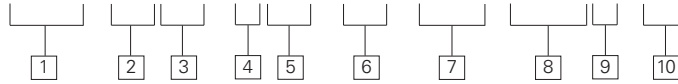
Pressure Drop Curves

Cartridge only



- A - Port 1 to port 2 de-energized
- B - Port 2 to port 1 energized

SV3 – 12 (V) – C (*) – (A) – * – ***** * – 00**



- 1 Function**
SV3 - Solenoid valve

- 2 Size**
12 - 12 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
C - Normally closed

- 5 Manual override option**
Blank - No manual override
M - Knob type
R - Cable type
For valve dimensions with manual override option installed see page A-153.

- 6 Valve housing material**
Omit for cartridge only
A - Aluminum (standard)
S - Steel

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum	Steel
0	Cartridge only		
4G	1/2" BSPP	02-161118	02-172062
4GU	1/2" BSPP	02-161116	02-172512
6G	3/4" BSPP	02-161117	02-169665
6GU	3/4" BSPP	02-161115	02-162922
10T	SAE 10	02-160640	02-169744
10TU	SAE 10	02-160641	02-169817
12T	SAE 12	02-160644	02-169782
12TU	SAE 12	02-160645	02-169790

See section J for housing details.

- 8 Voltage rating**
00 - No coil
12D - 12VDC
24D - 24VDC
36D - 36VDC
24A - 24VAC
115A - 115VAC
230A - 230VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
*Optional arc suppression diode.

- 9 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)
For coil part numbers and dimensions see Section C.

- 10 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")

Note
Use J series, 23 W coils with this solenoid valve.

Dimensions

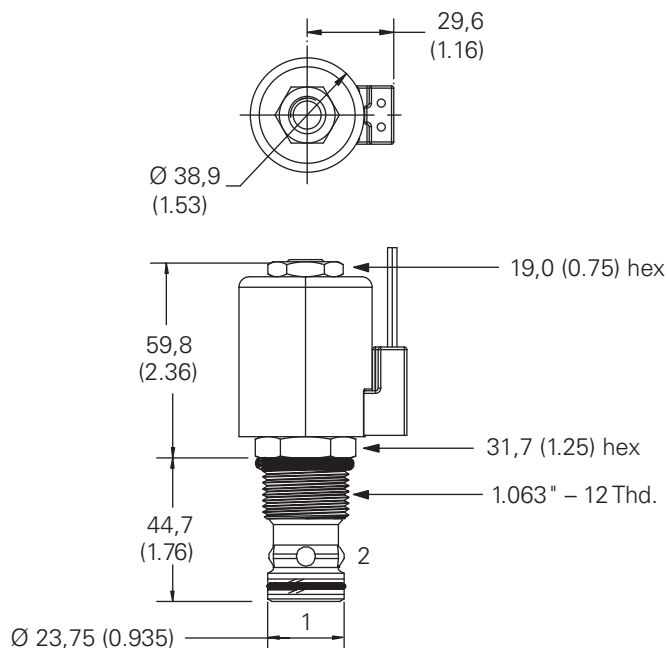
mm (inch)

- Torque cartridge in housing
- A - 81-95 Nm (60-70 ft. lbs)
- S - 102-115 Nm (75-85 ft. lbs)

Note
When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING
Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV13-12-C/CM

Poppet type, normally closed solenoid valve, 350 bar (free reverse flow)

Description

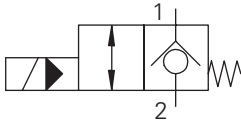
The SV13-12-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in solenoid cartridge valve.

Operation

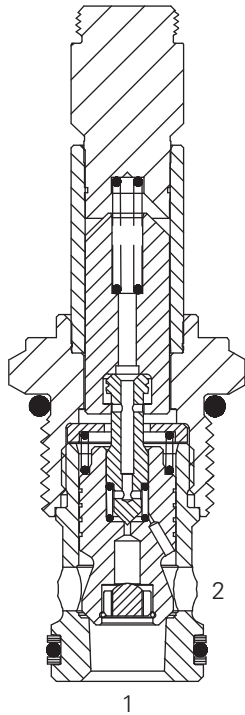
In the de-energized position, flow is blocked from port 2 to port 1 and free flow is allowed from port 1 to port 2.

In the energized position, the poppet lifts to allow flow in either direction.

Functional Symbol



Sectional View



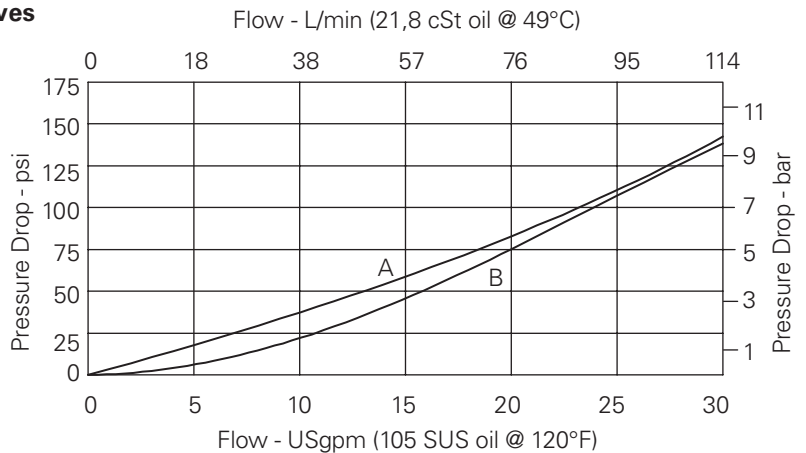
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	114 L/min (30 USgpm)
Internal leakage	less than 5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-12-2 or C-12-2U Add "U" after number if undercut is required. If undercut is not specified, expect 10 psi@15 USgpm and 20 psi @ 30 USgpm higher pressure drop.
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,27 kg (0.59 lbs)
Seal kit	02-165889 (Buna-N), 02-165888 (Viton®) Viton is a registered trademark of E.I. DuPont

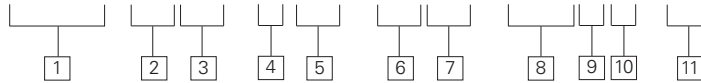
Pressure Drop Curves

Cartridge only



- A - Port 1 to port 2
- B - Port 2 to port 1 energized

SV13 – 12 (V) – C (M) – (S) ** – *** * H – 00**



1 Function
SV13 - Solenoid valve

2 Size
12 - 12 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Manual override option
Blank - No manual override
M - Manual override


For valve dimensions with manual override option installed see page A-153.

6 Valve housing material
Blank - Cartridge only
S - Steel (standard)
A - Aluminum

Dimensions
 mm (inch)

Torque cartridge in housing
S - 102-115 Nm (75-85 ft. lbs)
A - 81-95 Nm (60-70 ft. lbs)

Note
 When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum	Steel
0	Cartridge only		
4G	1/2" BSPP	02-161118	02-172062
4GU	1/2" BSPP	02-161116	02-172512
6G	3/4" BSPP	02-161117	02-169665
6GU	3/4" BSPP	02-161115	02-162922
10T	SAE 10	02-160640	02-169744
10TU	SAE 10	02-160641	02-169817
12T	SAE 12	02-160644	02-169782
12TU	SAE 12	02-160645	02-169790

See section J for housing details.

8 Voltage rating

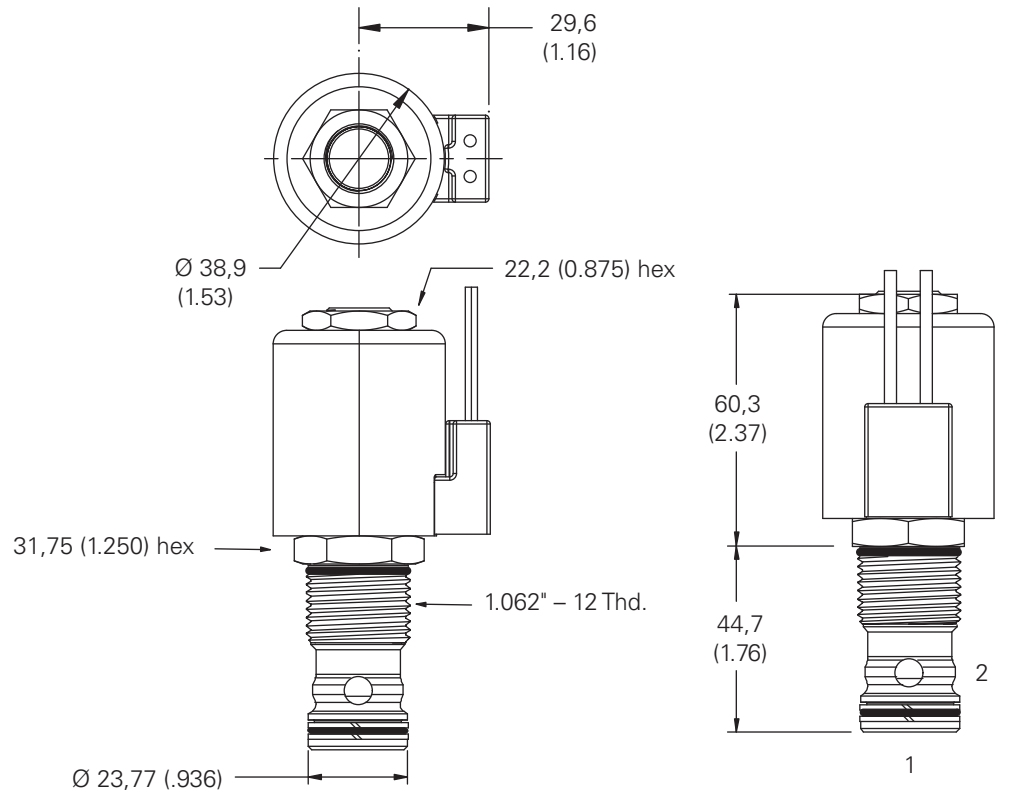
00 - No coil
12D - 12VDC
24D - 24VDC
36D - 36VDC

24A - 24VAC
115A - 115VAC
230A - 230VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
 *Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

10 Coil Series
H - 10 series, 29 W
 For coil part numbers and dimensions see Section C.

11 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")



SBV11-12-C

Bi-directional, normally closed solenoid valve

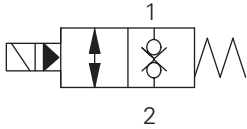
Description

The SBV11-12-C is a 2-way, 2-position, bi-directional, normally closed, poppet type, screw-in cartridge solenoid valve.

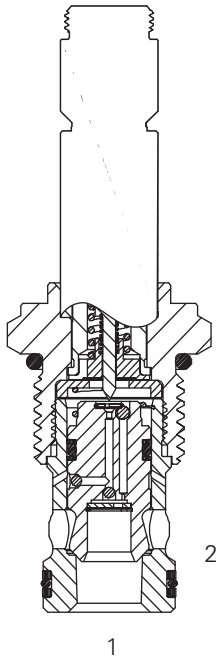
Operation

In the de-energized position, flow is blocked in both directions. In the energized position, flow is allowed in both directions.

Functional Symbol



Sectional View



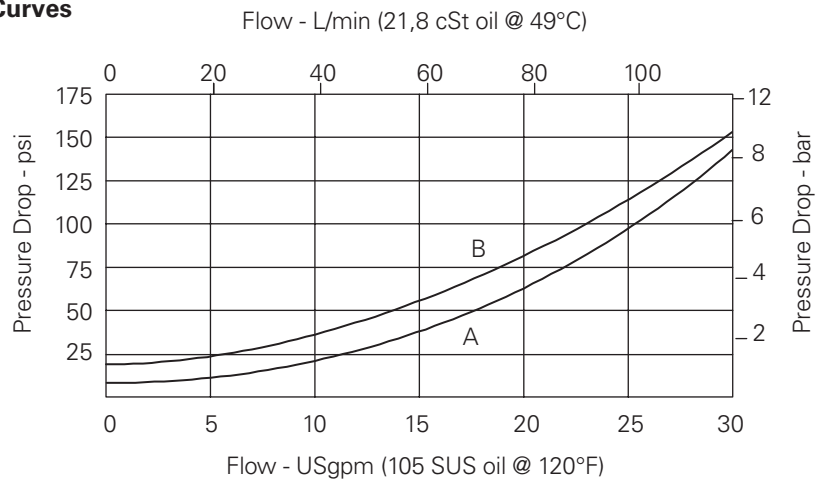
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	114 L/min (30 USgpm)
Internal leakage, port 1 to port 2 and port 2 to port 1	5 drops/min. max @ 350 bar (3000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-12-2 or C-12-2U Add "U" after number if undercut is required. If undercut is not specified, expect 10 psi@15 USgpm and 20 psi @ 30 USgpm higher pressure drop.
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum or steel
Weight cartridge only	0,27 kg (0.59 lbs)
Seal kit	02-165889 (Buna-N), 02-165888 (Viton®) Viton is a registered trademark of E.I. DuPont

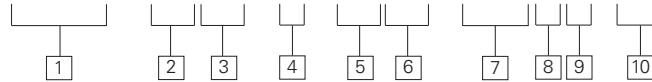
Pressure Drop Curves

Cartridge only



A - Port 1 to port 2
B - Port 2 to port 1

SBV11 - 12 (V) - C - (*) ** - *** * H - 00**



1 Function
SBV11 - Solenoid bi-directional valve

2 Size
12 - 12 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Valve housing material
Blank - Cartridge only
A - Aluminum
S - Steel

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum	Steel
0	Cartridge only		
4G	1/2" BSPP	02-161118	02-172062
4GU	1/2" BSPP	02-161116	02-172512
6G	3/4" BSPP	02-161117	02-169665
6GU	3/4" BSPP	02-161115	02-162922
10T	SAE 10	02-160640	02-169744
10TU	SAE 10	02-160641	02-169817
12T	SAE 12	02-160644	02-169782
12TU	SAE 12	02-160645	02-169790

See section J for housing details.

7 Voltage rating

00 - No coil
12D - 12VDC
24D - 24VDC
36D - 36VDC

24A - 24VAC
115A - 115VAC
230A - 230VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
 *Optional arc suppression diode.

8 Connector types

Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

9 Coil series

H - 10 series, 29 W

For coil part numbers and dimensions see Section C.

10 Special features

00 - None
 (Only required if valve has special features, omitted if "00.")

Dimensions

mm (inch)

Torque cartridge in housing
A - 81-95 Nm (60-70 ft. lbs)
S - 102-115 Nm (75-85 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, coil nut is included.



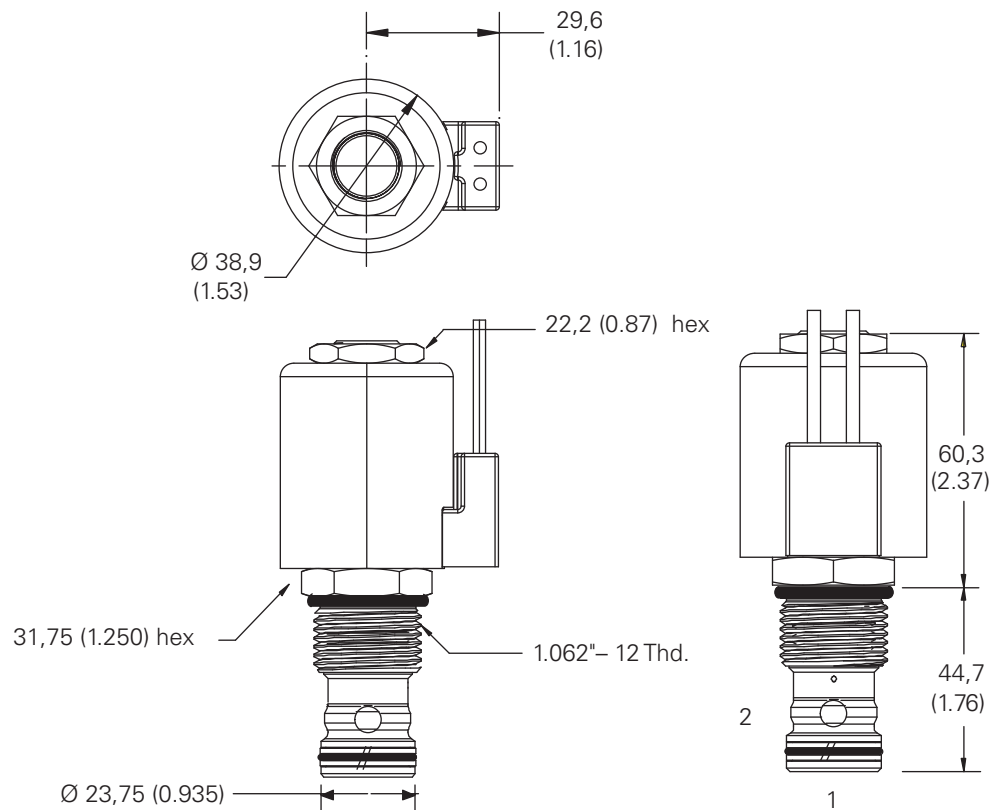
WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



WARNING

Aluminum housings can be used for pressures up to 210 bar (3000 psi) Steel housings must be used for operating pressures above 210 bar (3000 psi).



SV1-16-C/CM/CR

Poppet type, normally closed solenoid valve (free reverse flow)

Description

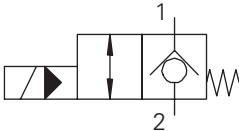
The SV1-16-C is a 2-way, 2-position, poppet type, pilot operated, normally closed screw-in cartridge solenoid valve.

Operation

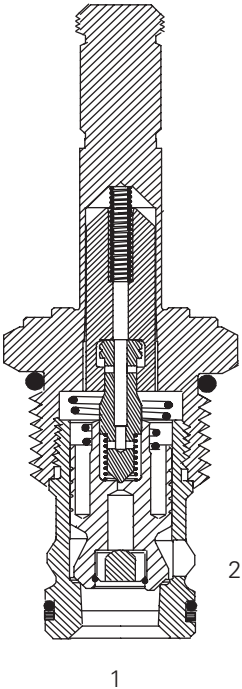
In the de-energized position, flow is blocked from port 2 to port 1 and free flow is allowed from port 1 to port 2.

In the energized position, bi-directional flow is allowed between port 1 and port 2.

Functional Symbol



Sectional View



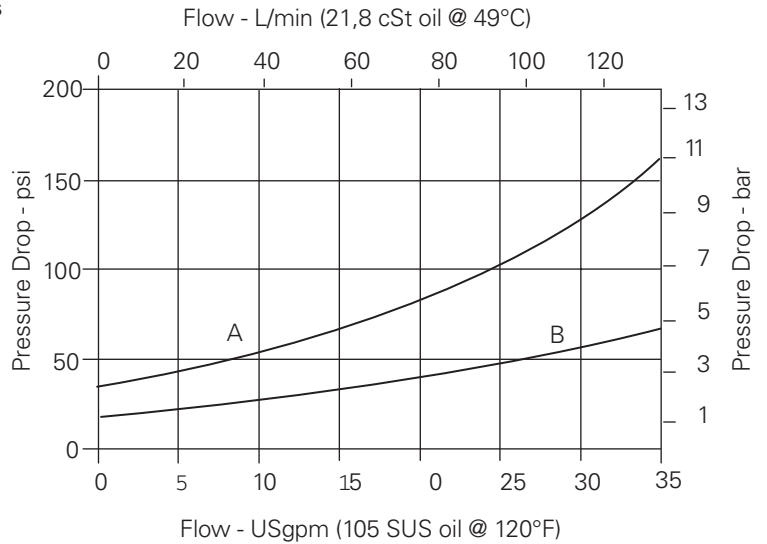
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	132 L/min (35 USgpm)
Internal leakage, port 2 to port 1	less than 5 drops/min. max @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-16-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	1,15 kg (2.53 lbs)
Seal kit	565810 (Buna-N), 02-889609 (Viton®) Viton is a registered trademark of E.I. DuPont

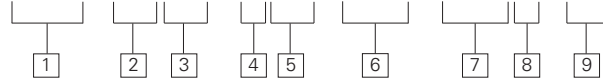
Pressure Drop Curves

Cartridge only



- A** - Port 2 to port 1 energized
- B** - Port 1 to port 2 de-energized

SV1 – 16 (V) – C (*) – * – ***** * – 00**



1 Function
SV1 - Solenoid valve

2 Size
16 - 16 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Manual override option
Blank - No manual override
M - Knob type
R - Cable type
 For valve dimensions with manual override option installed see page A-153.

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
6B	3/4" BSPP	02-175463*
12T	SAE 12	566149*
6G	3/4" BSPP	876717
10H	SAE 10	876717
12H	SAE 12	566113

*Light duty housing
 See section J for housing details.

7 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

8 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

For coil part numbers and dimensions see Section C.

9 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

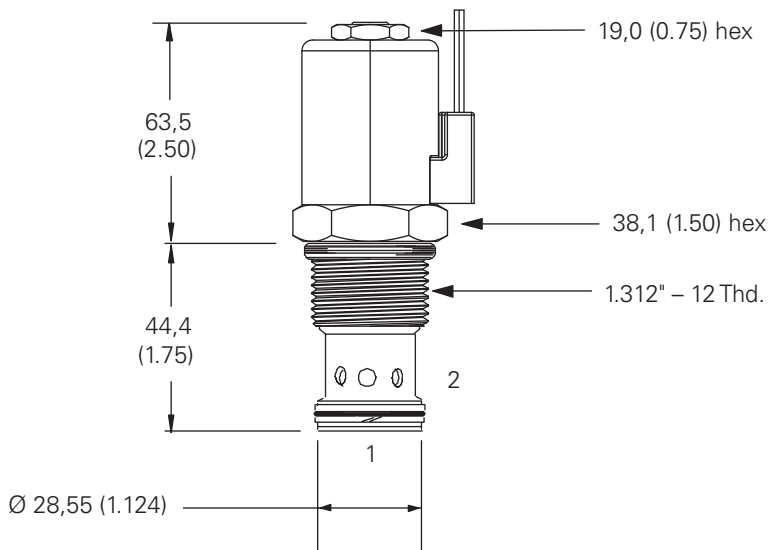
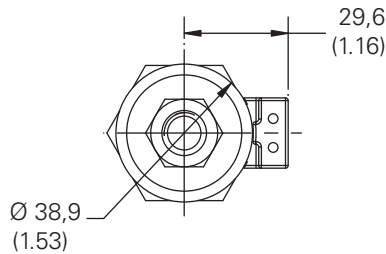
Note
 Use J series, 23 W coils with this solenoid valve.

Dimensions

mm (inch)

Torque cartridge in aluminum housing 108-122 Nm (80-90 ft. lbs)

Note
 When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING
 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV13-16-C/CM

Poppet type, normally closed solenoid valve, 350 bar (free reverse flow)

Description

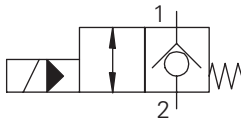
The SV13-16-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in cartridge solenoid valve.

Operation

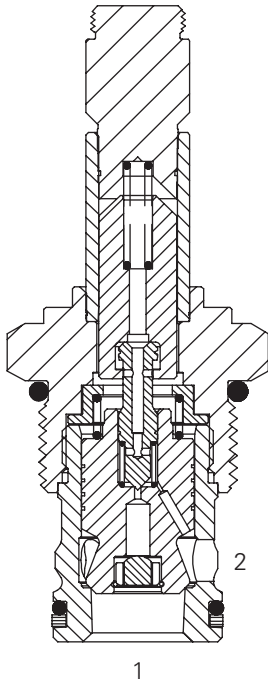
In the de-energized position, flow is blocked from port 2 to port 1 and free flow is allowed from port 1 to port 2.

In the energized position, the poppet lifts to allow flow in either direction.

Functional Symbol



Sectional View



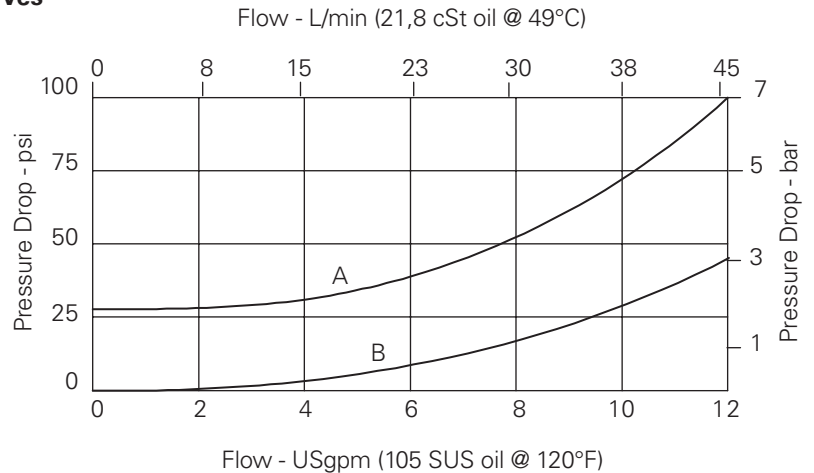
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	132 L/min (35 USgpm)
Internal leakage	less than 5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-16-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,39 kg (0.85 lbs)
Seal kit	565810 (Buna-N), 889609 (Viton®) Viton is a registered trademark of E.I. DuPont

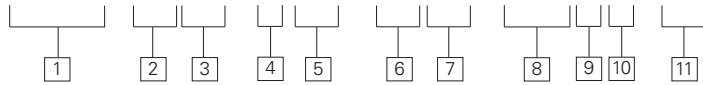
Pressure Drop Curves

Cartridge only



A - Port 2 to port 1 energized
B - Port 1 to port 2

SV13 – 16 (V) – C (M) – (S) ** – *** * H – 00**



1 Function
SV13 - Solenoid valve

2 Size
16 - 16 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Manual override option
Blank - No manual override
M - Manual override
 For valve dimensions with manual override option installed see page A-153.

6 Valve housing material
Blank - Cartridge only
S - Steel

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
4G	1/2" BSPP	02-175106
6G	3/4" BSPP	02-175107
10T	SAE 10	02-175104
12T	SAE 12	02-175105

See section J for housing details.

8 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

10 Coil Series
H - 10 series, 29 W
 For coil part numbers and dimensions see Section C.

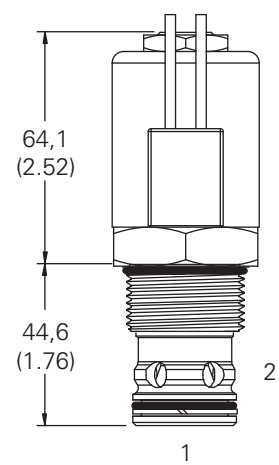
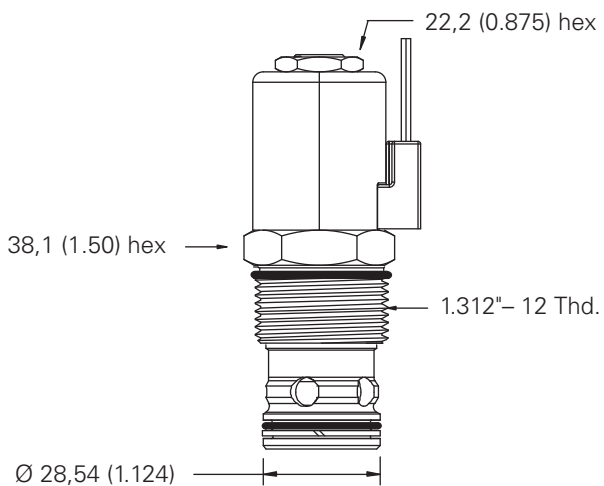
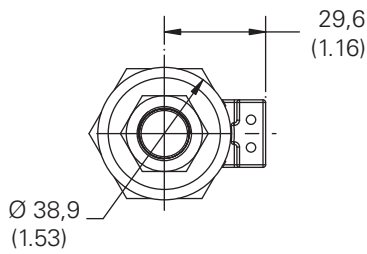
11 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

Dimensions
 mm (inch)

Torque cartridge in steel housing 136-149 Nm (100-110 ft. lbs)

Note
 When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV2-20-C/CM/CR

Poppet type, normally closed solenoid valve (free reverse flow)

Description

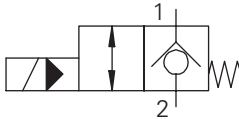
The SV2-20-C is a 2-way, 2-position, poppet type, pilot operated, normally closed screw-in cartridge solenoid valve.

Operation

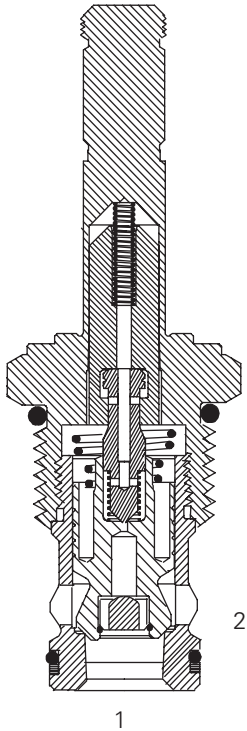
In the de-energized position, flow is blocked from port 2 to port 1 and free flow is allowed from port 1 to port 2.

In the energized position, bi-directional flow is allowed between port 1 and port 2.

Functional Symbol



Sectional View



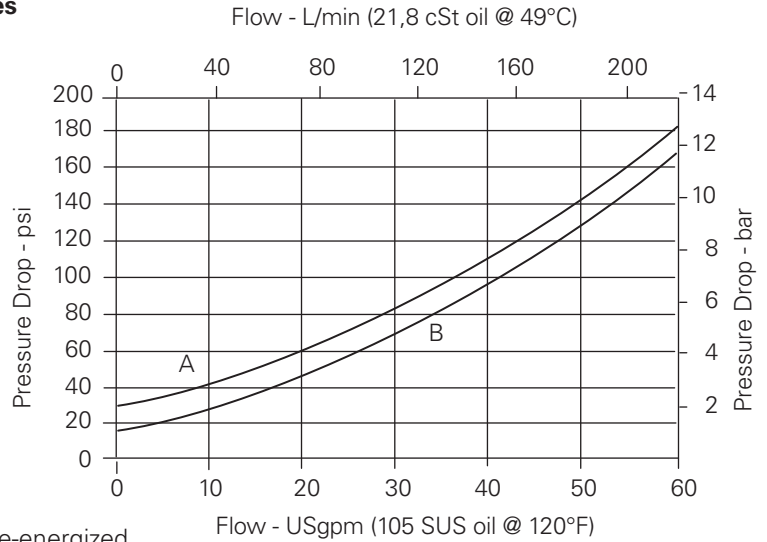
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	227 L/min (60 USgpm)
Internal leakage, port 2 to port 1	less than 5 drops/min. max @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-20-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	1,2 kg (2.70 lbs)
Seal kit	889615 (Buna-N), 889619 (Viton®) Viton is a registered trademark of E.I. DuPont

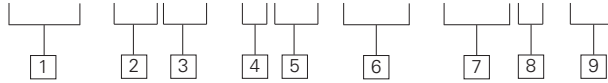
Pressure Drop Curves

Cartridge only



- A** - Port 1 to port 2 de-energized
- B** - Port 2 to port 1 energized

SV2 – 20 (V) – C (*) – * – ***** – 00**



- 1 Function**
SV2 - Solenoid valve

- 2 Size**
20 - 20 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
C - Normally closed

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
8B	1" BSPP	02-175464*
16T	SAE 16	566409*
6G	3/4" BSPP	876732
8G	1" BSPP	876734
12H	SAE 12	876733
16H	SAE 16	876735

*Light duty housing
See section J for housing details.

- 8 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)
- For coil part numbers and dimensions see Section C.

- 5 Manual override option**
Blank - No manual override
M - Knob type
R - Cable type
- For valve dimensions with manual override option installed see page A-153.

- 7 Voltage rating**
00 - No coil
12D - 12VDC
24D - 24VDC
36D - 36VDC
 - 24A - 24VAC
115A - 115VAC
230A - 230VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
- *Optional arc suppression diode.

- 9 Special features**
00 - None
- (Only required if valve has special features, omitted if "00.")

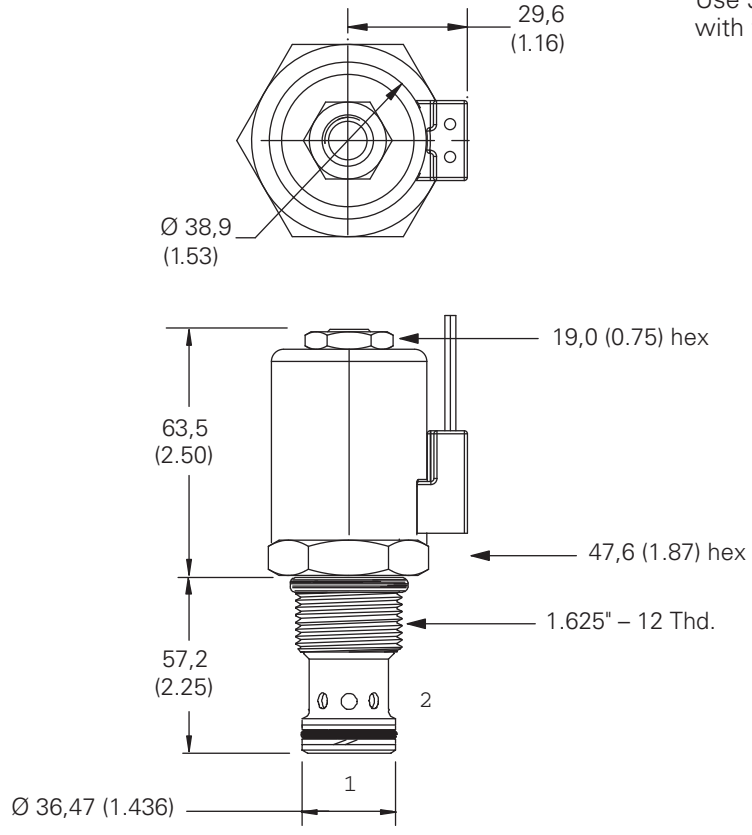
Note
Use J series, 23 W coils with this solenoid valve.

Dimensions
mm (inch)

Torque cartridge in aluminum housing 128-155 Nm (95-115 ft. lbs)

Note
When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV13-20-C/CM

Poppet type pilot operated solenoid valve, 350 bar

Description

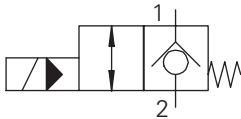
The SV13-20-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in cartridge solenoid valve.

Operation

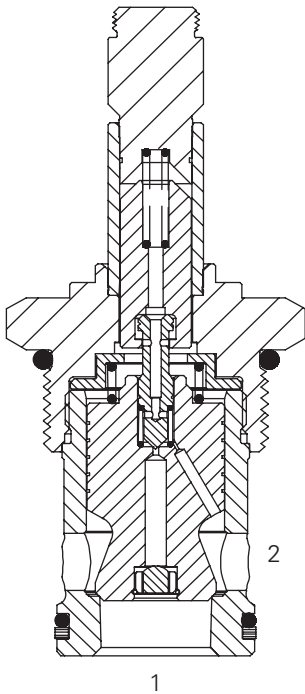
In the de-energized position, flow is blocked from port 2 to port 1 and free flow is allowed from port 1 to port 2.

In the energized position, the poppet lifts to allow flow in either direction.

Functional Symbol



Sectional View



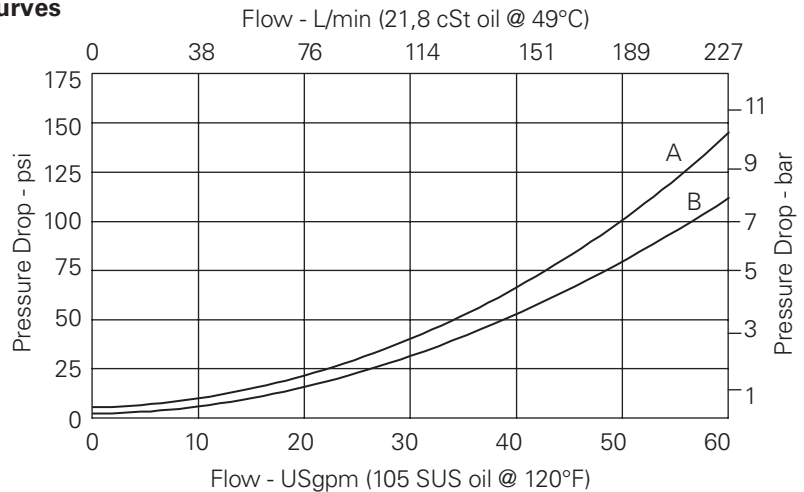
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	227 L/min (60 USgpm)
Internal leakage, port 2 to port 1	less than 5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-20-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,62 kg (1.37 lbs)
Seal kit	889615 (Buna-N), 889619 (Viton®) Viton is a registered trademark of E.I. DuPont

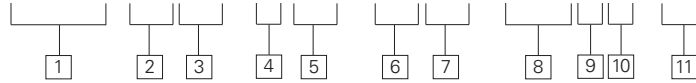
Pressure Drop Curves

Cartridge only



- A** - Port 2 to port 1 energized
- B** - Port 1 to port 2

SV13 – 20 (V) – C (M) – (S) ** – *** * H – 00**



1 Function
SV13 - Solenoid valve

2 Size
20 - 20 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Manual override option
Blank - No manual override
M - Manual override

For valve dimensions with manual override option installed see page A-153.

6 Valve housing material
Blank - Cartridge only
S - Steel

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
6G	3/4" BSPP	02-175110
8G	1" BSPP	02-175111
12T	SAE 12	02-175108
16T	SAE 16	02-175109

See section J for housing details.

8 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

9 Connector types

- Blank** - No coil
- G** - ISO 4400 DIN 43650
- Q** - Spade terminals
- W** - Leadwire
- N** - Deutsch (DC only)
- Y** - Amp JR (DC only)
- D** - Metripack 150 male (DC only)
- J** - Metripack 280 male (DC only)

10 Coil Series

H - 10 series, 29 W

For coil part numbers and dimensions see Section C.

11 Special features

00 - None

(Only required if valve has special features, omitted if "00.")

Dimensions

mm (inch)

Torque cartridge in steel housing 163-183 Nm (120-135 ft. lbs)

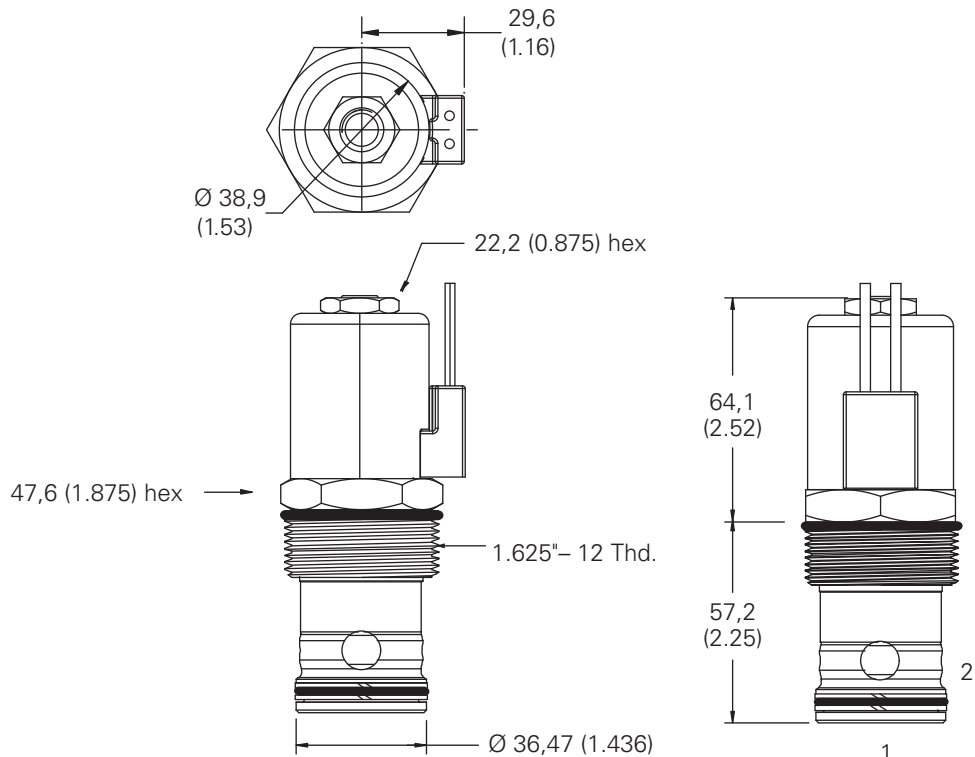
Note

When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV4-8-C/CM

Spool type, normally closed solenoid valve

Description

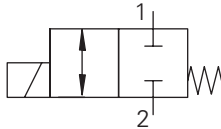
The SV4-8-C is a two-way, two-position, spool type, direct acting, normally closed solenoid valve.

Operation

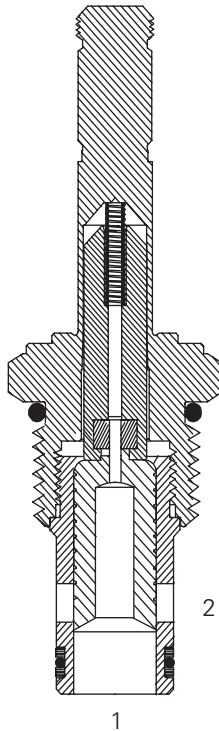
In the de-energized position, the SV4-8-C blocks flow in both directions.

In the energized position, the spool lifts to allow flow in either direction.

Functional Symbol



Sectional View



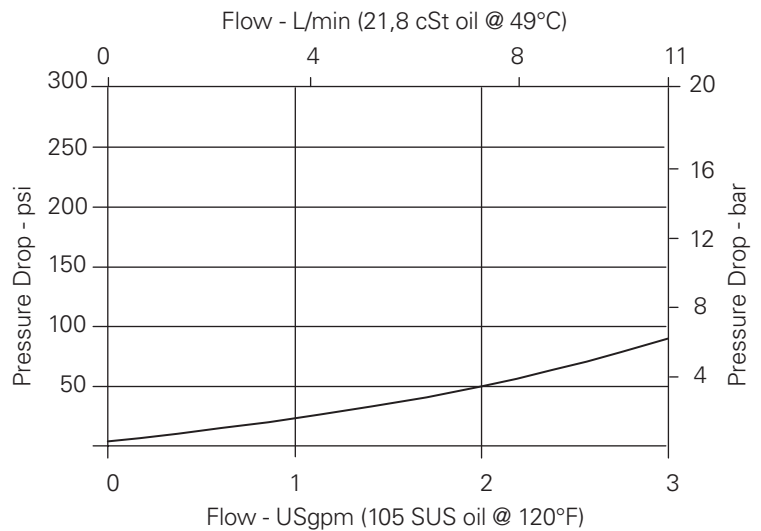
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	11 L/min (3USgpm)
Internal leakage	82 cm ³ /min (5 in ³ /min) max. @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Response times (100% rated voltage and flow)	Energize: 27 ms De-Energize: 24 ms
Cavity	C-8-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,27 kg (0.60 lbs)
Seal kit	02-160777 (Buna-N), 02-160778 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

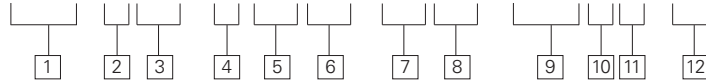
Pressure Drop Curve

Cartridge only



Port 1 to port 2 or Port 2 to port 1 (energized)

SV4 – 8 (V) – C (M) (F) – (A) ** – *** S – 00**



- 1 Function**
SV4 - Solenoid valve

- 2 Size**
8 - 8 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
C - Normally closed

- 5 Manual override option**
Blank - No manual override
M - Knob type
For valve dimensions with manual override option installed see page A-153.

- 6 Filter option**
Blank - None
F - Filter screen

7 Valve housing material
Omit for cartridge only
A - Aluminum

8 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-160727
3G	3/8" BSPP	02-160728
4T	SAE 4	02-160730
6T	SAE 6	02-160731
8T	SAE 8	02-160732

See section J for housing details.

- 9 Voltage rating**
- 00 - No coil
 - 12D - 12VDC
 - 24D - 24VDC
 - 36D - 36VDC
 - 24A - 24VAC
 - 115A - 115VAC
 - 230A - 230VAC
 - 12B - 12VDC/w diode*
 - 24B - 24VDC/w diode*
- *Optional arc suppression diode.

- 10 Connector types**
- Blank - No coil
 - G - ISO 4400 DIN 43650
 - Q - Spade terminals
 - W - Leadwire
 - N - Deutsch (DC only)
 - Y - Amp JR (DC only)
 - D - Metripack 150 male (DC only)
 - J - Metripack 280 male (DC only)
-
- 11 Coil series**
S - 8 series, 20 W
For coil part numbers and dimensions see Section C.

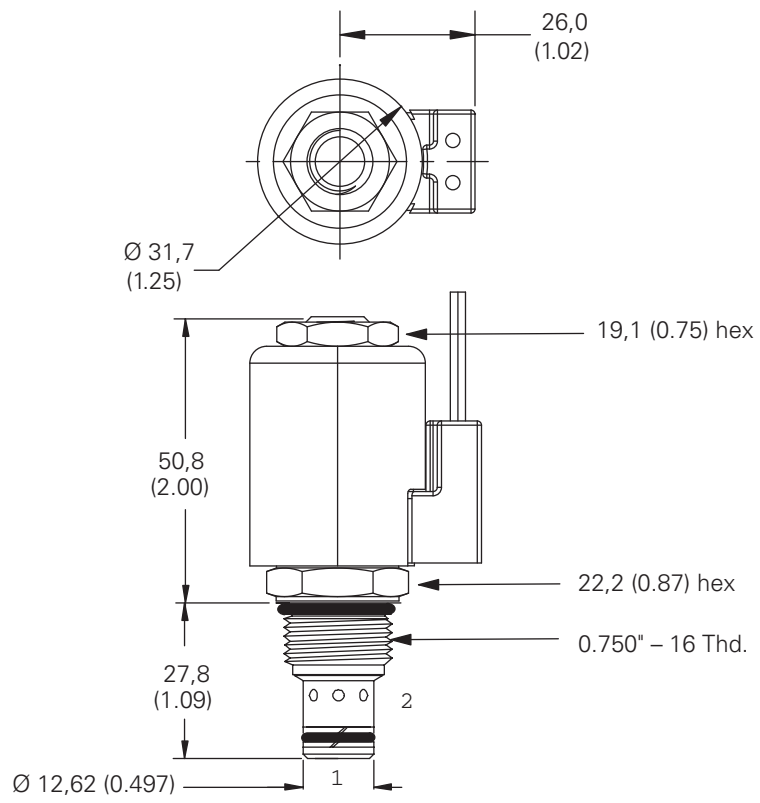
- 12 Special features**
- 00 - None
(Only required if valve has special features, omitted if "00.")

Dimensions
mm (inch)

Torque cartridge in aluminum housing 34-41 Nm (25-30 ft. lbs)

Note
When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV14-8-C/CM

Spool type, normally closed solenoid valve, 350 bar

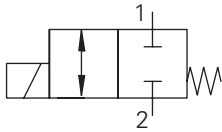
Description

The SV14-8-C is a 2-way, 2-position, spool type, normally closed, screw-in cartridge solenoid valve.

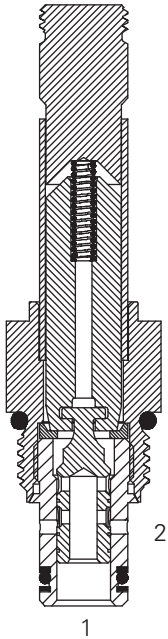
Operation

In the de-energized position, flow is blocked in both directions. In the energized position, the spool lifts to allow flow in either direction.

Functional Symbol



Sectional View



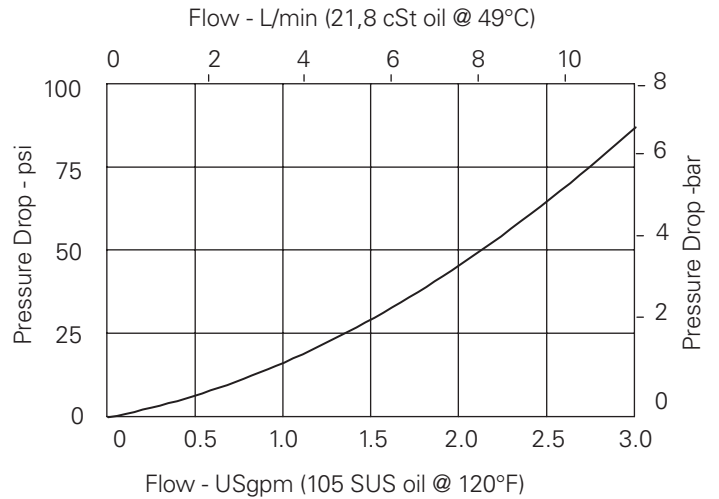
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	11 L/min (3 USgpm)
Internal leakage, port 2 to port 1	140cm ³ (8.5in ³ /min.) max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-8-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,11 kg (0.25 lbs)
Seal kit	02-160777 (Buna-N), 02-160778 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

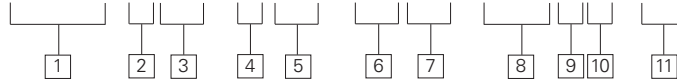
Pressure Drop Curve

Cartridge only



Port 2 to port 1 or port 1 to 2 (energized)

SV14 – 8 (V) – C (M) – (S) ** – ** * P – 00**



1 Function
SV14 - Solenoid valve

2 Size
8 - 8 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Manual override option
Blank - No manual override
M - Manual override

For valve dimensions with manual override option installed see page A-153.

6 Valve housing material
Blank - Cartridge only
S - Steel

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-160733
3G	3/8" BSPP	02-160734
4T	SAE 4	02-160736
6T	SAE 6	02-160737
8T	SAE 8	02-160738

See section J for housing details.

8 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

10 Coil Series
P - 8 series, 23 W
 For coil part numbers and dimensions see Section C.

11 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

Dimensions

mm (inch)

Torque cartridge in steel housing 34-41 Nm (25-30 ft. lbs)

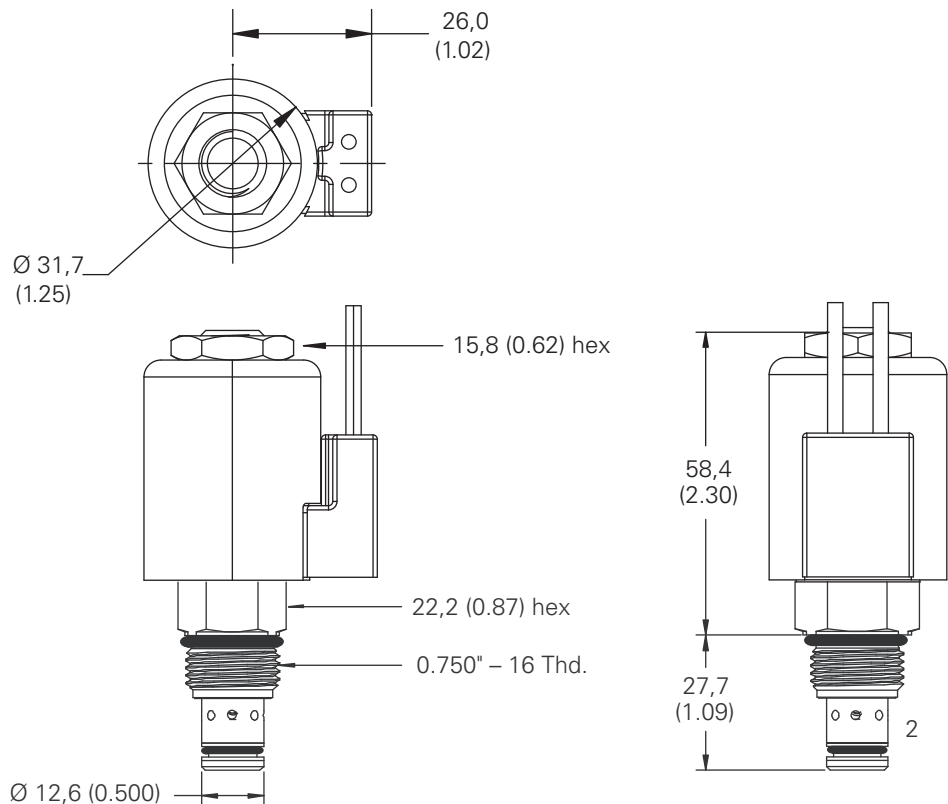
Note

When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV4-10-C/CM/CR

Spool type, normally closed solenoid valve

Description

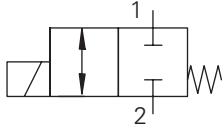
The SV4-10-C is a 2-way, 2-position, direct acting, spool-type, normally closed screw-in cartridge solenoid valve.

Operation

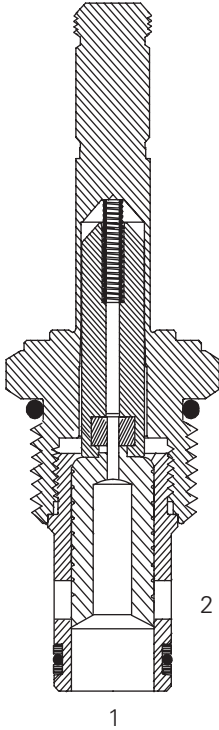
In the de-energized position, flow is blocked in both directions.

In the energized position, the spool lifts to allow flow in either direction.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

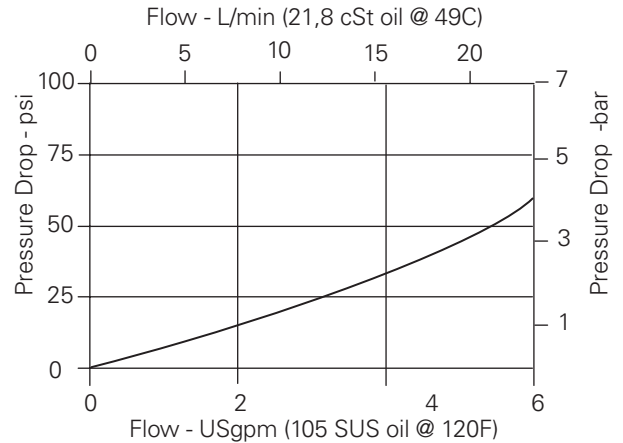
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	23 L/min (6 USgpm)
Internal leakage	82 cm ³ /min (5 in ³ /min) max. @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,4 kg (0.87 lbs)
Seal kit	565806 (Buna-N), 889627 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

Pressure Drop Curve

Cartridge only

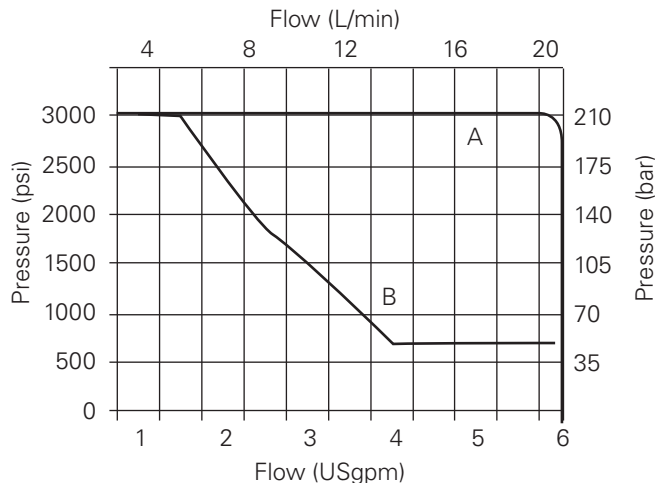
Pressure drop vs. flow

Port 1 to port 2 or port 2 to port 1 (energized)

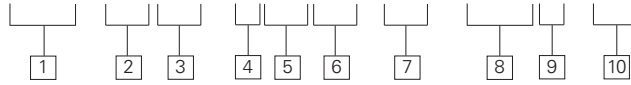


Operating Limits

- A - Port 2 to Port 1
- B - Port 1 to Port 2



SV4 – 10 (V) – C (*) (F) – ** – *** * – 00**



1 Function
SV4 - Solenoid valve

2 Size
10 - 10 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Manual override option
Blank - No manual override
M - Knob type
R - Cable type
 For valve dimensions with manual override option installed see page A-153.

6 Filter option
Blank - None
F - Filter screen

Dimensions
 mm (inch)

Torque cartridge in aluminum housing 47-54 Nm (35-40 ft. lbs)

Note
 When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
3B	3/8" BSPP	02-175462
6T	SAE 6	566151
2G	1/4" BSPP	876702
3G	3/8" BSPP	876703
6H	SAE 6	876700
8H	SAE 8	876701

See section J for housing details.

8 Voltage rating

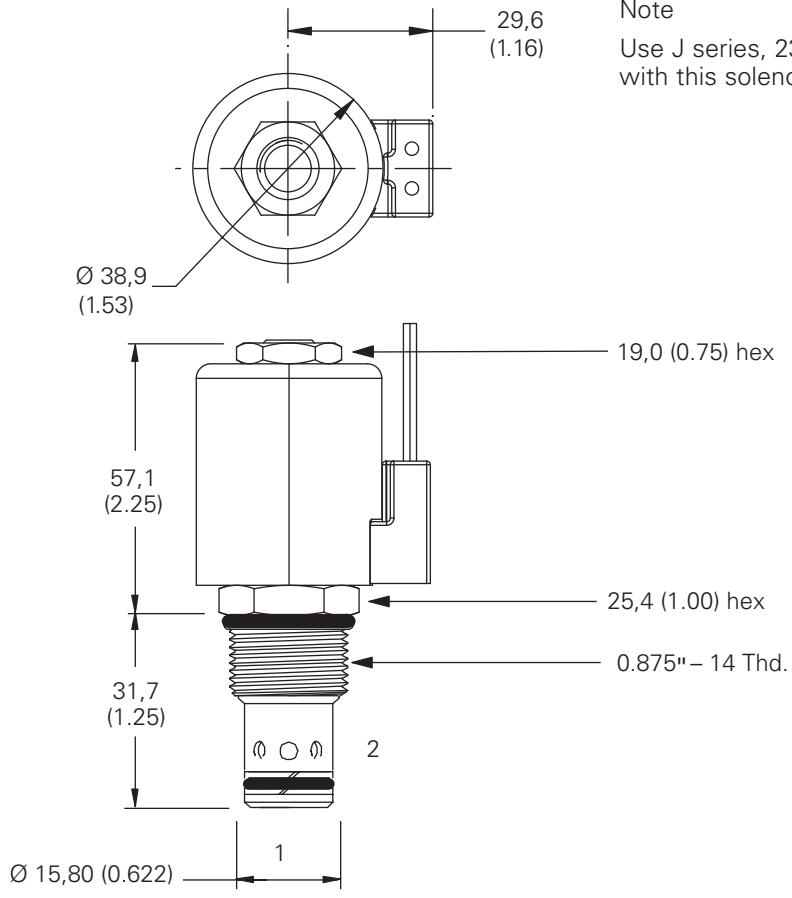
00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)
 For coil part numbers and dimensions see Section C.

10 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

Note
 Use J series, 23 W coils with this solenoid valve.



SV14-10-C/CM

Spool type, normally closed solenoid valve, 350 bar

Description

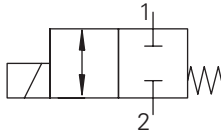
The SV14-10-C is a 2-way, 2-position, spool type, normally closed screw-in cartridge solenoid valve.

Operation

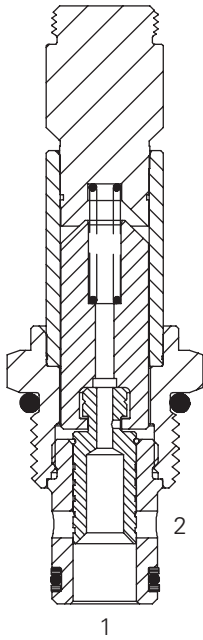
In the de-energized position, flow is blocked in both directions.

In the energized position, the spool lifts to allow flow in either direction.

Functional Symbol



Sectional View



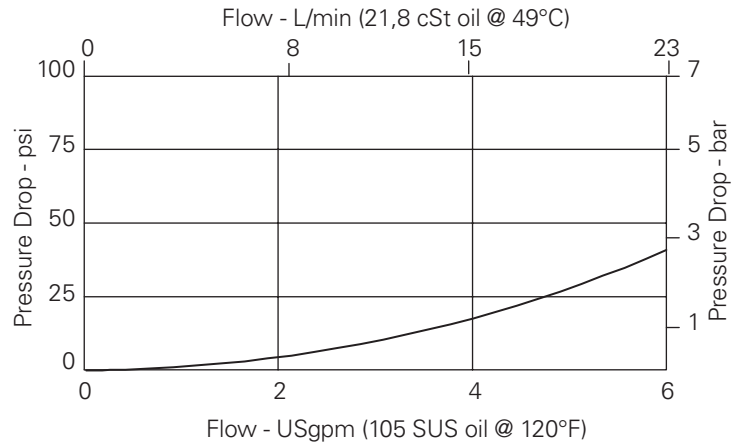
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	23 L/min (6 USgpm)
Internal leakage (port 2 to port 1)	140 cm ³ /min. (8.5 in ³ /min.) max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,18 kg (0.39 lbs)
Seal kit	565806 (Buna-N), 889627 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

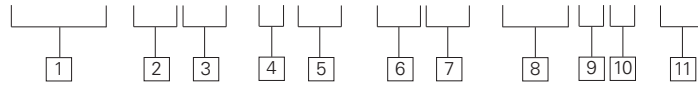
Pressure Drop Curve

Cartridge only



Port 1 to port 2 or
port 2 to port 1 (energized)

SV14 – 10 (V) – C (M) – (S) ** – *** * H – 00**



1 Function
SV14 - Solenoid valve

2 Size
10 - 10 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally closed

5 Manual override option
Blank - No manual override
M - Manual override

For valve dimensions with manual override option installed see page A-153.

6 Valve housing material
Blank - Cartridge only
S - Steel

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-175102
3G	3/8" BSPP	02-175103
6T	SAE 6	02-175100
8T	SAE 8	02-175101

See section J for housing details.

8 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

9 Connector types

- Blank** - No coil
- G** - ISO 4400 DIN 43650
- Q** - Spade terminals
- W** - Leadwire
- N** - Deutsch (DC only)
- Y** - Amp JR (DC only)
- D** - Metripack 150 male (DC only)
- J** - Metripack 280 male (DC only)

10 Coil series

H - 10 series, 29 W

For coil part numbers and dimensions see Section C.

11 Special features

00 - None
 (Only required if valve has special features, omitted if "00.")

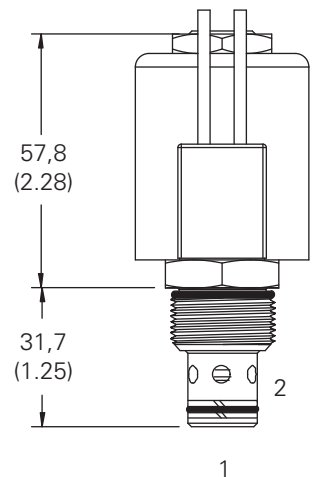
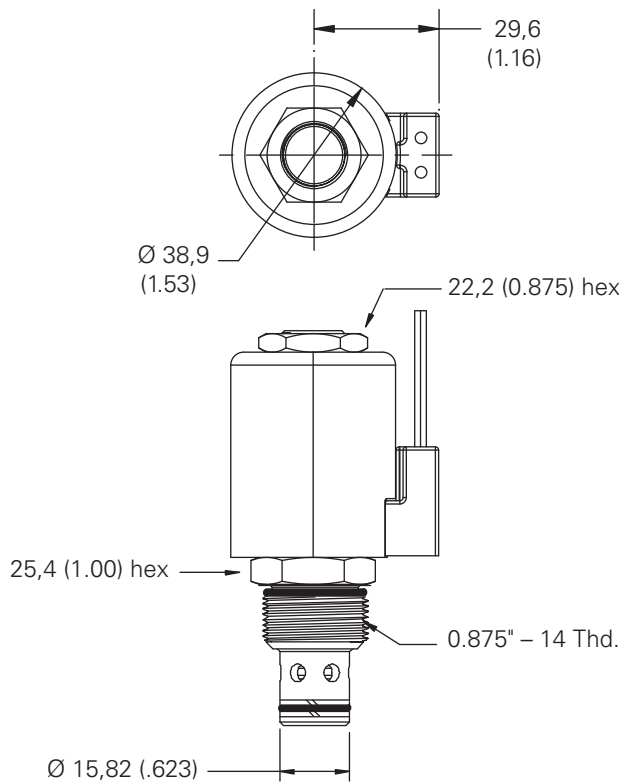
Dimensions

mm (inch)

Torque cartridge in steel housing 68-75 Nm (50-55 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV5-8-O/OP/OS

Poppet type, normally open solenoid valve

Description

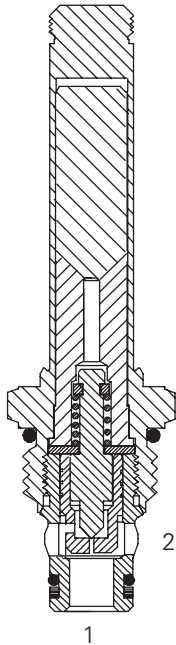
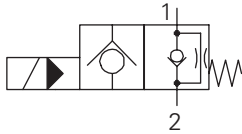
The SV5-8-O is a 2-way, 2-position, poppet type, pilot operated, normally open, solenoid valve. This valve is used in applications requiring low leakage, such as single acting cylinder applications.

Operation

In the de-energized position, the SV5-8-O allows free flow from port 2 to port 1, and restricted flow from port 1 to port 2.

In the energized position, flow is blocked from port 2 to port 1, and free flow is allowed from port 1 to port 2.

Functional Symbol



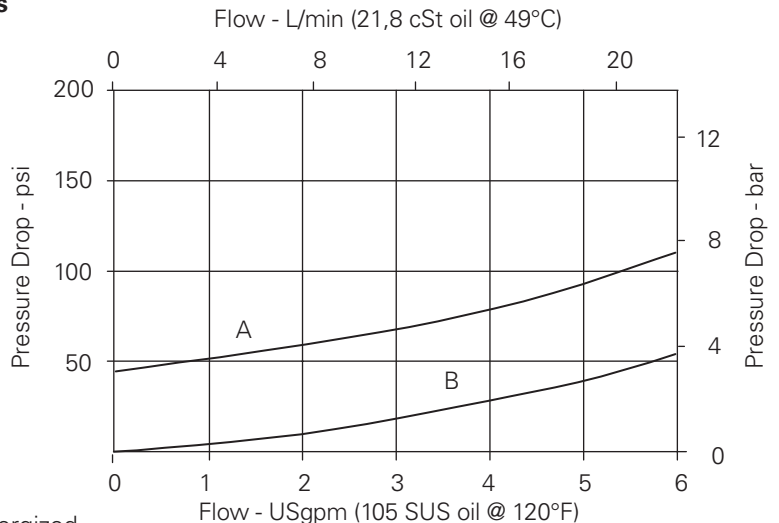
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	23 L/min (6 USgpm)
Internal leakage	less than 5 drops/min. max @ 210 bar (3000 psi) with valve energized
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Response times (100% rated voltage and flow)	Energize: 24 ms De-Energize: 25 ms
Cavity	C-8-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,28 kg (0.62 lbs)
Seal kit	02-165875 (Buna-N), 02-165877 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

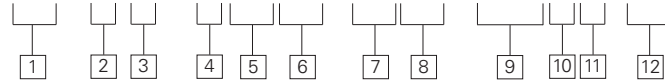
Pressure Drop Curves

Cartridge only



- A** - Port 1 to port 2 energized
- B** - Port 2 to port 1 de-energized

SV5 - 8 (V) - O (*) (F) - (A) ** - *** * S - 00**



- 1 Function**
SV5 - Solenoid valve

- 2 Size**
8 - 8 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
O - Normally open

- 5 Manual override option**
Blank - No manual override
P - Push type
S - Screw type
For valve dimensions with manual override option installed see page A-152.

- 6 Filter option**
Blank - None
F - Filter screen

7 Valve housing material
Omit for cartridge only
A - Aluminum

8 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-160727
3G	3/8" BSPP	02-160728
4T	SAE 4	02-160730
6T	SAE 6	02-160731
8T	SAE 8	02-160732

See section J for housing details.

9 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

- 10 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

- 11 Series Coil**
S - 8 series, 20 W
For coil dimensions see Section C.

- 12 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")

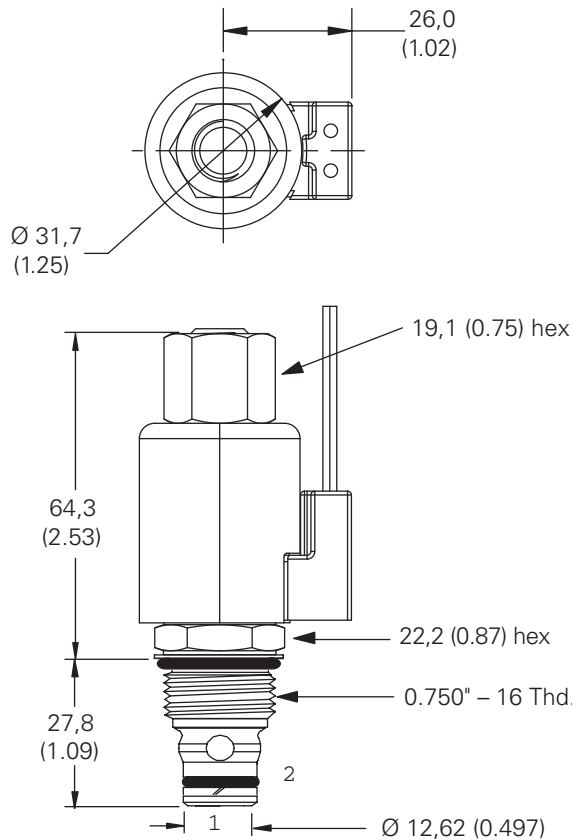
Dimensions

mm (inch)

Torque cartridge in aluminum or steel housing
34-41 Nm (25-30 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV15-8-O/OP/OS

Poppet type, normally open solenoid valve, 350 bar

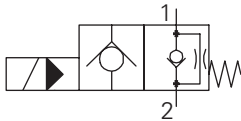
Description

The SV15-8-O is a 2-way, 2-position, pilot operated, poppet type, normally open, screw-in cartridge solenoid valve.

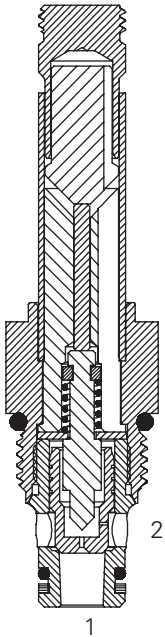
Operation

In the de-energized position, flow from port 1 to port 2 is restricted, while free flow is allowed from port 2 to port 1.

In the energized position, flow is blocked from port 2 to port 1, and flow is allowed from port 1 to port 2, when coil forces are overcome.



Sectional View



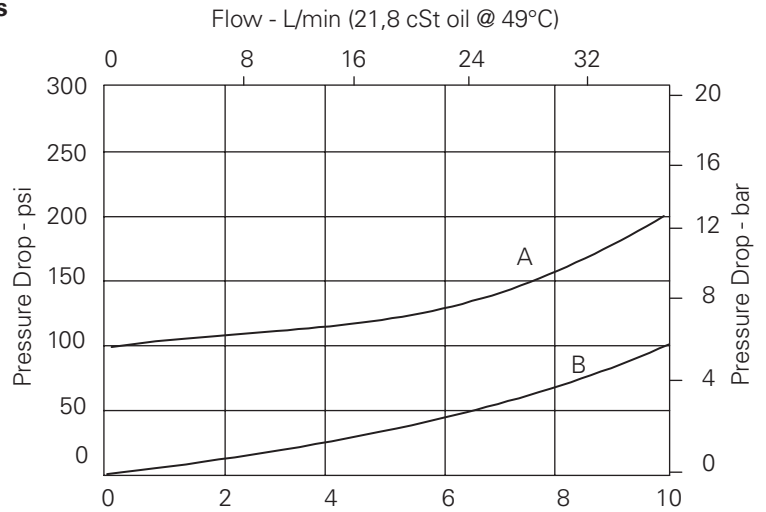
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	37 L/min (10 USgpm)
Internal leakage, port 2 to port 1	5 drops/min. max @ 210 bar (3000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-8-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,11 kg (0.25 lbs)
Seal kit	02-165875 (Buna-N), 02-165877 (Viton®) Viton is a registered trademark of E.I. DuPont

Pressure Drop Curves

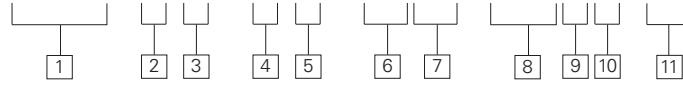
Cartridge only



A - Port 1 to port 2 energized

B - Port 2 to port 1 de-energized

SV15 – 8 (V) – O (*) – (S) ** – *** * P – 00**



1 Function
SV15 - Solenoid valve

2 Size
8 - 8 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
O - Normally open

5 Manual override option
Blank - No manual override
P - Push type
S - Screw type

For valve dimensions with manual override option installed see page A-152.

6 Valve housing material
Blank - Cartridge only
S - Steel

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-160733
3G	3/8" BSPP	02-160734
4T	SAE 4	02-160736
6T	SAE 6	02-160737
8T	SAE 8	02-160738

See section J for housings.

8 Voltage rating

00 - No coil	115A - 115VAC
12D - 12VDC	230A - 230VAC
24D - 24VDC	12B - 12VDC/w diode*
36D - 36VDC	24B - 24VDC/w diode*
24A - 24VAC	

*Optional arc suppression diode.

9 Connector types/coil
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

10 Coil series
P - 8 series, 23 W
 For coil dimensions see Section C.

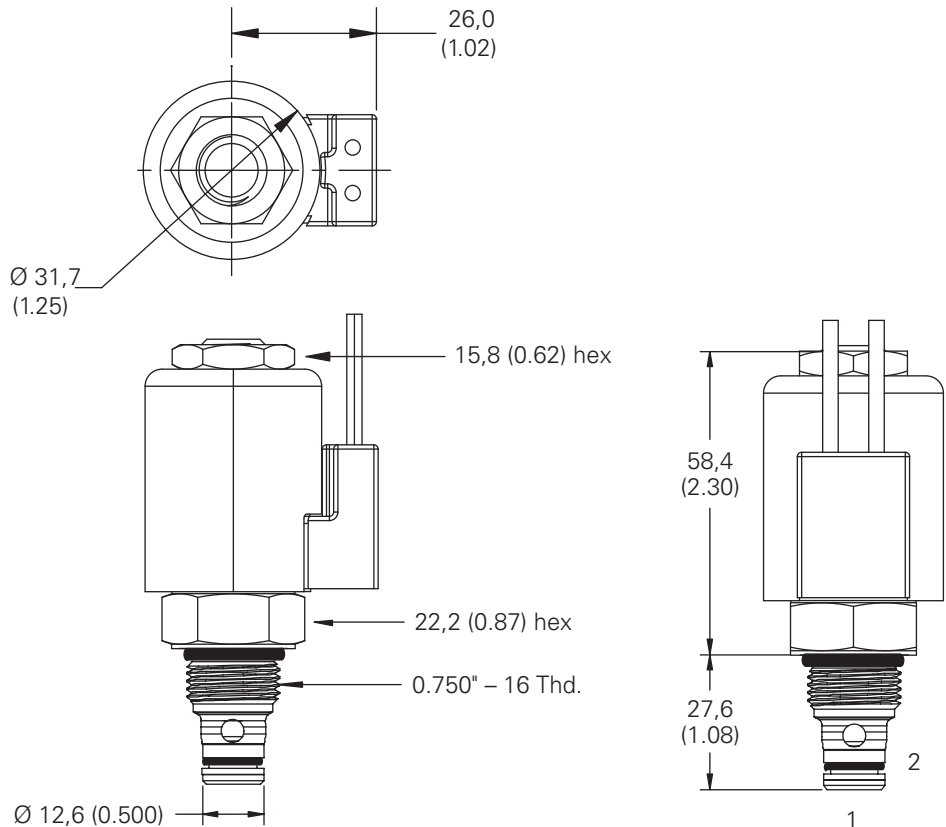
11 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

Dimensions

mm (inch)

Torque cartridge in aluminum or steel housing
 34-41 Nm (25-30 ft. lbs)

Note
 When solenoid valve is ordered as cartridge only, nut is included.



WARNING
 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SBV11-8-O

Bi-directional, normally open solenoid valve

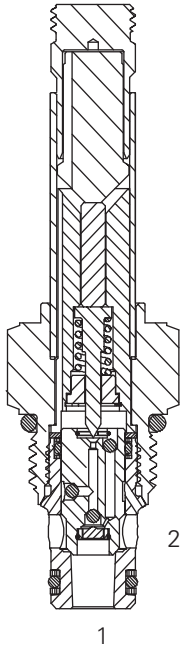
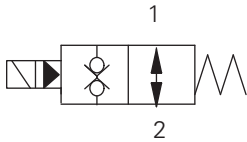
Description

The SBV11-8-O is a 2-way, 2-position, bi-directional, normally open, poppet type, screw-in cartridge solenoid valve.

Operation

In the de-energized position, flow is allowed in both directions. In the energized position, flow is blocked in both directions.

Functional Symbol



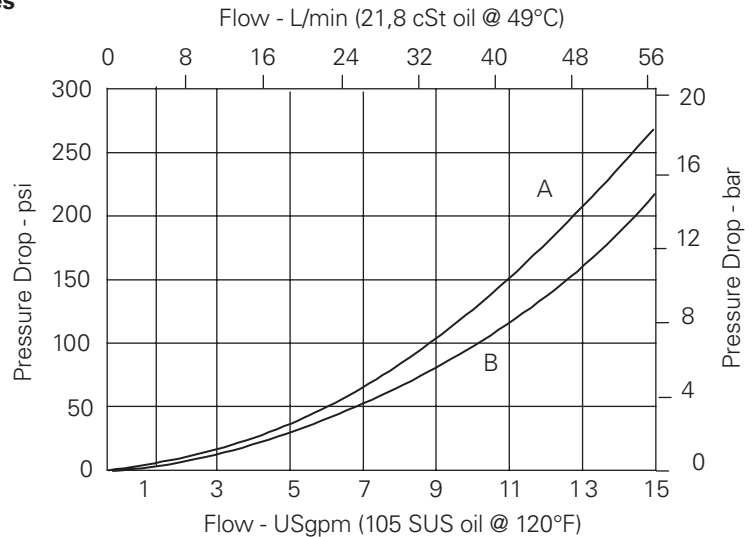
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	60 L/min (15 USgpm)
Internal leakage, port 1 to port 2 & port 2 to port 1	5 drops/min. max @ 350 bar (5000 psi) when energized
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-8-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum or steel
Weight cartridge only	0,12 kg (0.26 lbs)
Seal kit	02-160777 (Buna-N), 02-160778 (Viton®) Viton is a registered trademark of E.I. DuPont

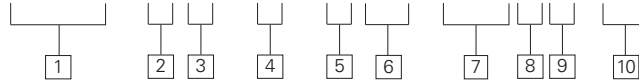
Pressure Drop Curves

Cartridge only



A - Port 1 to port 2
B - Port 2 to port 1

SBV11 – 8 (V) – O – (*) ** – *** * P – 00**



1 Function
SBV11 - Solenoid bi-directional valve

2 Size
8 - 8 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
O - Normally open

5 Valve housing material
Blank - Cartridge only
A - Aluminum
S - Steel

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum	Steel
0	Cartridge only		
2G	1/4" BSPP	02-160727	02-160733
3G	3/8" BSPP	02-160728	02-160734
4T	SAE 4	02-160730	02-160736
6T	SAE 6	02-160731	02-160737
8T	SAE 8	02-160732	02-160738

See section J for housings.

7 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

8 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

9 Coil series
P - 8 series, 23 W
 For coil dimensions see Section C.

10 Special features
00 - None
 (Only required if valve has special features,

Dimensions

mm (inch)

Torque cartridge in aluminum or steel housing
 34-41 Nm (25-30 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, nut is included.



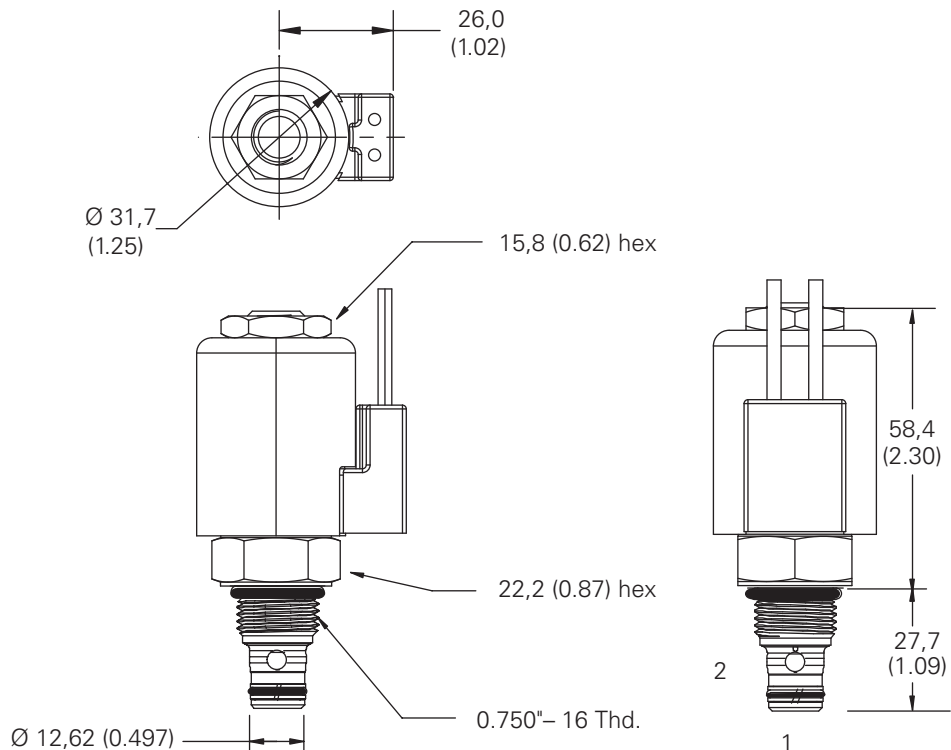
WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



WARNING

Aluminum housings can be used for pressures up to 210 bar (3000 psi) Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).



SV3-10-O/OP/OS

Poppet type, normally open solenoid valve (free reverse flow)

Description

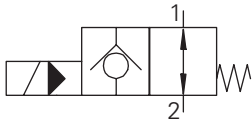
The SV3-10-O is a 2-way, 2-position, poppet type, pilot operated, normally open, screw-in cartridge solenoid valve.

Operation

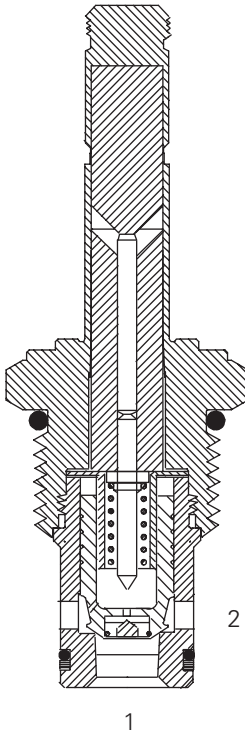
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2.

In the energized position, flow is blocked from port 2 to port 1, and is allowed from port 1 to port 2 when coil forces are overcome.

Functional Symbol



Sectional View



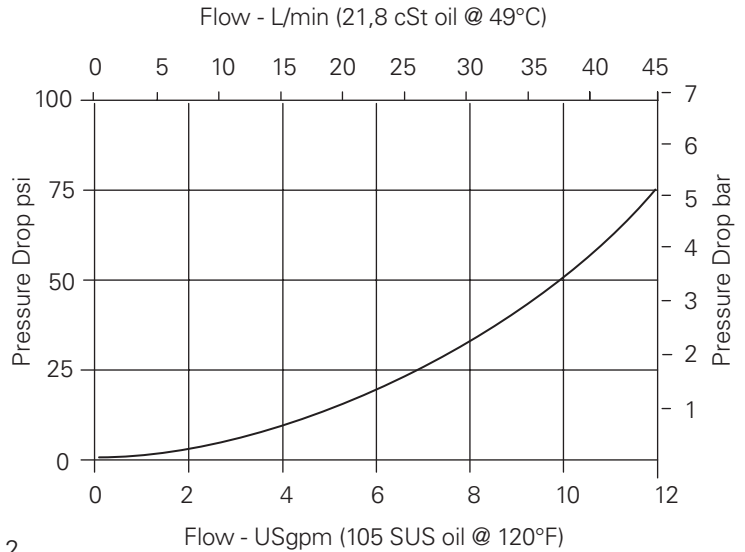
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	45 L/min (12 USgpm)
Internal leakage, port 2 to port 1	less than 5 drops/min. max @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,4 kg (0.87 lbs)
Seal kit	565803 (Buna-N), 566086 (Viton®) Viton is a registered trademark of E.I. DuPont

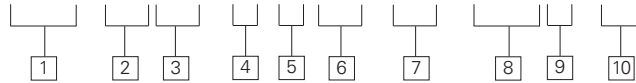
Pressure Drop Curve

Cartridge only



Port 1 to port 2 and port 2 to port 1 de-energized

SV3 – 10 (V) – O (*) (F) – ** – *** * – 00**



- 1 Function**
SV3 - Solenoid valve

- 2 Size**
10 - 10 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
O - Normally open

- 5 Manual Override Option**
Blank - No manual override
P - Push type
S - Screw type
For valve dimensions with manual override option installed see page A-152.

- 6 Filter option**
Blank - None
F - Filter screen

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
3B	3/8" BSPP	02-175462*
6T	SAE 6	566151*
2G	1/4" BSPP	876702
3G	3/8" BSPP	876703
6H	SAE 6	876700
8H	SAE 8	876701

*Light duty housing.
See section J for housings.

8 Voltage rating

00	No coil	24A - 24VAC
12D	12VDC	115A - 115VAC
24D	24VDC	230A - 230VAC
36D	36VDC	12B - 12VDC/w diode*
		24B - 24VDC/w diode*

*Optional arc suppression diode.

- 9 Connector types**
- Blank - No coil
 - G - ISO 4400 DIN 43650
 - Q - Spade terminals
 - W - Leadwire
 - N - Deutsch (DC only)
 - Y - Amp JR (DC only)
 - D - Metripack 150 male (DC only)
 - J - Metripack 280 male (DC only)

For coil dimensions see Section C.

10 Special features

- 00 - None
(Only required if valve has special features, omitted if "00.")

Note

Use J series, 23 W coils with this solenoid valve.

Dimensions

mm (inch)

Torque cartridge in aluminum housing 47-54 Nm (35-40 ft. lbs)

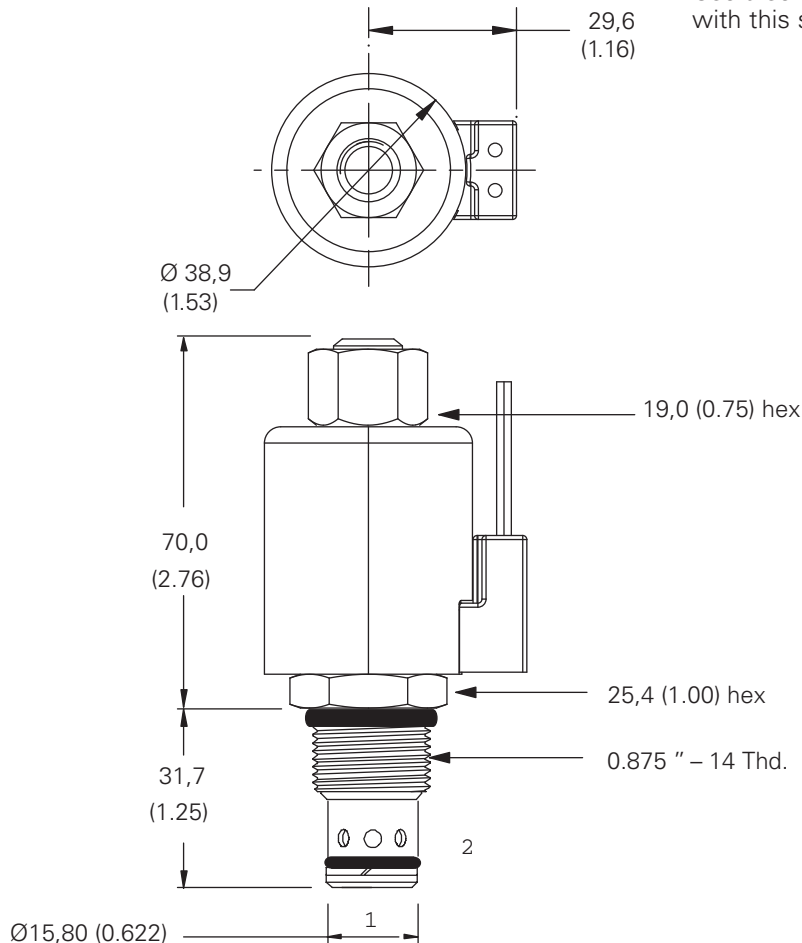
Note

When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV13-10-O/OP/OS

Poppet type, normally open solenoid valve, 350 bar (free reverse flow)

Description

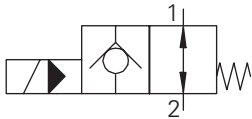
The SV13-10-O is a 2-way, 2-position, pilot operated, poppet type, normally open screw-in solenoid cartridge valve.

Operation

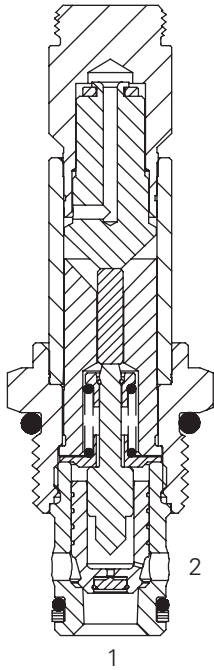
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2.

In the energized position, flow is blocked from port 2 to port 1, and is allowed from port 1 to port 2, when coil forces are overcome.

Functional Symbol



Sectional View



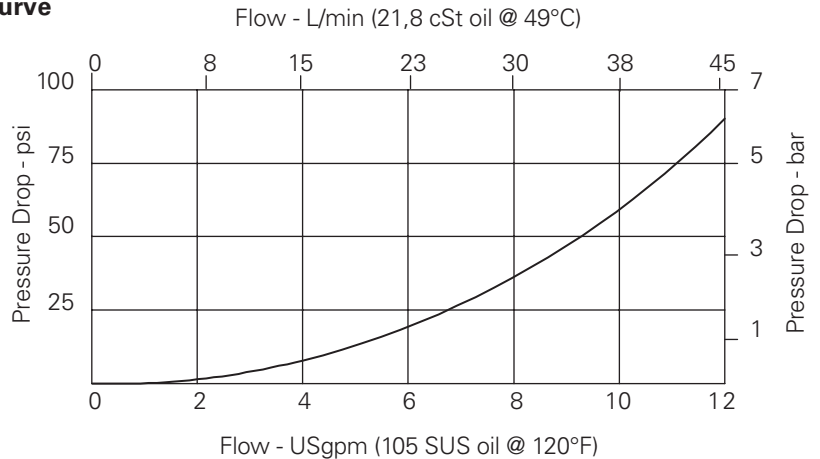
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	45 L/min (12 USgpm)
Internal leakage	less than 5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,18 kg (0.39 lbs)
Seal kit	565803 (Buna-N), 566086 (Viton®) Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve

Cartridge only

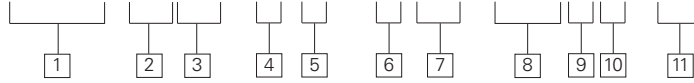


Application Note

This valve is pilot operated and requires a minimum flow of 1-2 L/min (0.3- .5 USgpm) in order to shift. For operation at very low flow conditions contact your Eaton representative.

Port 1 to port 2 and port 2 to port 1 de-energized

SV13 – 10 (V) – O (*) – (S) ** – *** * H – 00**



- 1 Function**
SV13 - Solenoid valve

- 2 Size**
10 - 10 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
O - Normally open

- 5 Manual override option**
Blank - No manual override
P - Push type
S - Screw type
For valve dimensions with manual override option installed see page A-152.

- 6 Valve housing material**
Blank - Cartridge only
S - Steel

- 7 Port Size**

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-175102
3G	3/8" BSPP	02-175103
6T	SAE 6	02-175100
8T	SAE 8	02-175101

See section J for housings.

- 9 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

- 10 Coil series**
H - 10 series, 29 W
For dimensions see Section C.

- 8 Voltage rating**
00 - No coil
12D - 12VDC
24D - 24VDC
36D - 36VDC
- 24A - 24VAC
115A - 115VAC
230A - 230VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
*Optional arc suppression diode.

- 11 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")

Dimensions

mm (inch)

Torque cartridge in steel housing 68-75 Nm (50-55 ft. lbs)

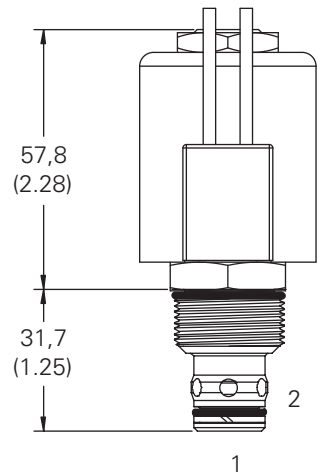
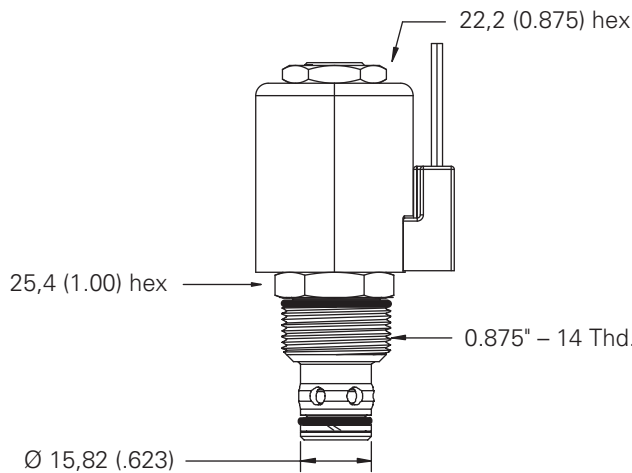
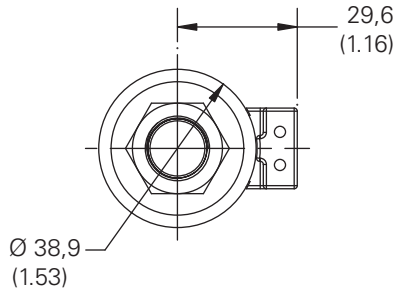
Note

When solenoid valve is ordered as cartridge only, nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV5-10-O/OP/OS

Poppet type, normally open solenoid valve

Description

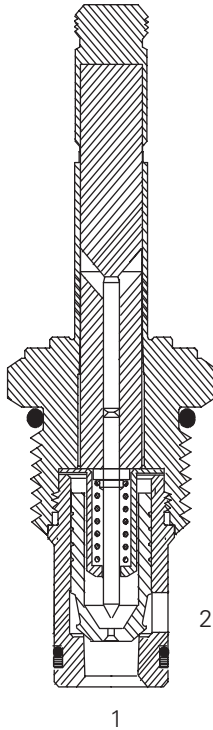
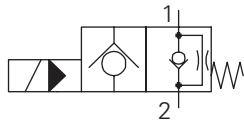
The SV5-10-O is a 2-way, 2-position, poppet type, pilot operated, normally open, screw-in cartridge solenoid valve.

Operation

In the de-energized position, flow from port 1 to port 2 is restricted while free flow is allowed from port 2 to port 1.

In the energized position, flow is blocked from port 2 to port 1, and flow is allowed from port 1 to port 2 when coil forces are overcome.

Functional Symbol



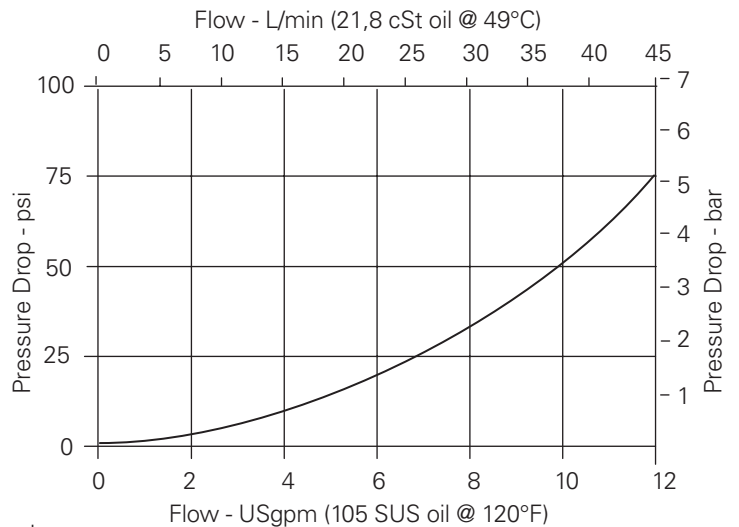
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	45 L/min (12 USgpm)
Internal leakage, port 2 to port 1	less than 5 drops/min. max @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,4 kg (0.87 lbs)
Seal kit	565803 (Buna-N), 566086 (Viton®) Viton is a registered trademark of E.I. DuPont

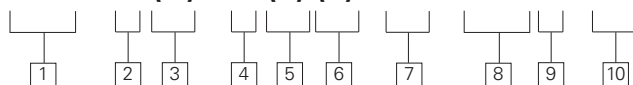
Pressure Drop Curve

Cartridge only



Port 2 to port 1 de-energized

SV5 – 10 (V) – O (*) (F) – ** – *** * – 00**



1 Function
SV5 - Solenoid valve

2 Size
10 - 10 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
O - Normally open

5 Manual Override Option
Blank - No manual override
P - Push type
S - Screw type
 For valve dimensions with manual override option installed see page A-152.

6 Filter option
Blank - None
F - Filter screen

Dimensions

mm (inch)

Torque cartridge in aluminum housing 47-54 Nm (35-40 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
3B	3/8" BSPP	02-175462*
6T	SAE 6	566151*
2G	1/4" BSPP	876702
3G	3/8" BSPP	876703
6H	SAE 6	876700
8H	SAE 8	876701

*Light duty housing. See section J for housings.

8 Voltage rating

00 - No coil
12D - 12VDC
24D - 24VDC
36D - 36VDC

24A - 24VAC
115A - 115VAC
230A - 230VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
 *Optional arc suppression diode.

9 Connector types

Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

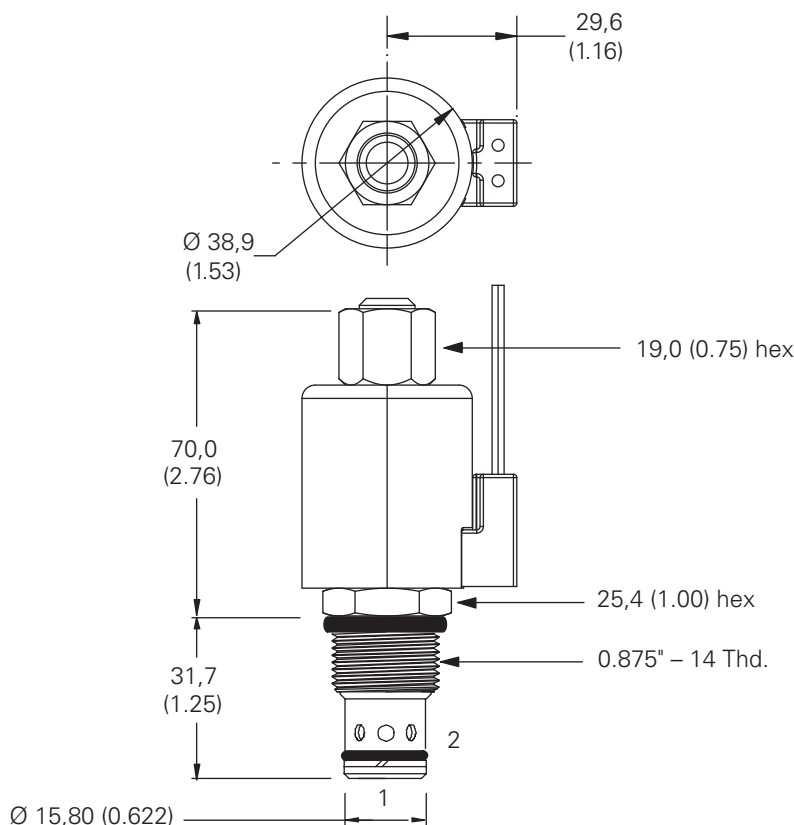
For coil dimensions see Section C.

10 Special features

00 - None
 (Only required if valve has special features, omitted if "00.")

Note

Use J series, 23 W coils with this solenoid valve.



SV15-10-O/OP/OS

Poppet type normally open solenoid valve, 350 bar

Description

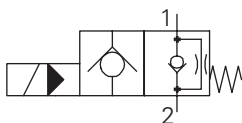
The SV15-10-O is a 2-way, 2-position, pilot operated, poppet type, normally open screw-in cartridge solenoid valve.

Operation

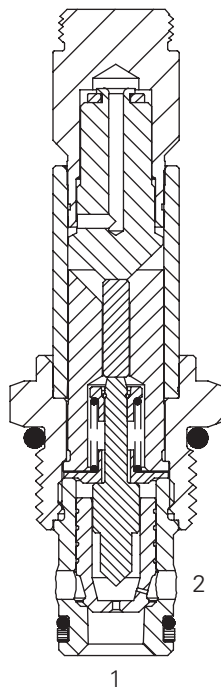
In the de-energized position, flow from port 1 to port 2 is restricted, while free flow is allowed from port 2 to port 1.

In the energized position, flow is blocked from port 2 to port 1, and flow is allowed from port 1 to port 2, when coil forces are overcome.

Functional Symbol



Sectional View



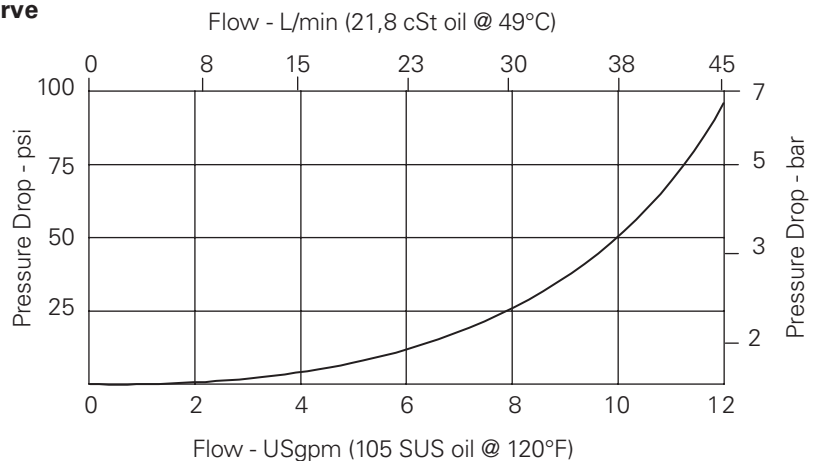
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	45 L/min (12 USgpm)
Internal leakage	less than 5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,18 kg (0.39 lbs)
Seal kit	565803 (Buna-N), 566086 (Viton®) Viton is a registered trademark of E.I. DuPont

Pressure Drop Curve

Cartridge only

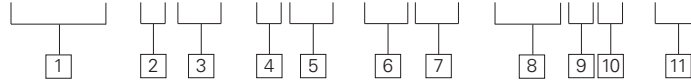


Application Note

This valve is pilot operated and requires a minimum flow of 1-2 L/min (0.3- 0.5 USgpm) in order to shift. For operation at very low flow conditions contact your Eaton representative.

Port 2 to port 1 de-energized

SV15 – 10 (V) – O (*) – (S) ** – *** * H – 00**



1 Function
SV15 - Solenoid valve

2 Size
10 - 10 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
O - Normally open

5 Manual override option
Blank - No manual override
P - Push type
S - Screw type
 For valve dimensions with manual override option installed see page A-152.

6 Valve housing material
Blank - Cartridge only
S - Steel

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-175102
3G	3/8" BSPP	02-175103
6T	SAE 6	02-175100
8T	SAE 8	02-175101

See section J for housings.

8 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

10 Coil series
H - 10 series, 29 W
 For coil dimensions see Section C.

11 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

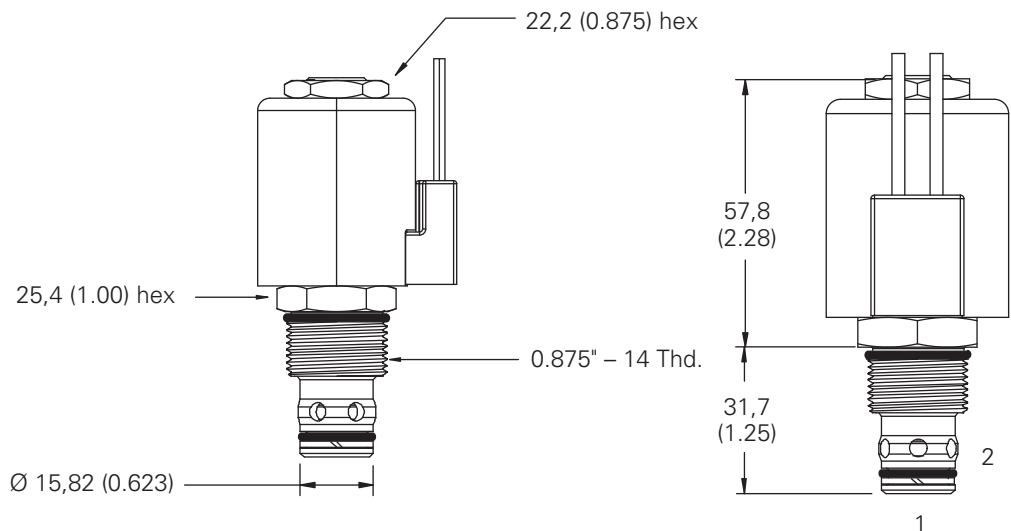
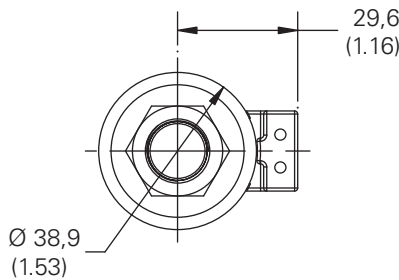
Dimensions

mm (inch)

Torque cartridge in steel housing 68-74 Nm (50-55 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, nut is included.



WARNING
 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SBV11-10-O

Bi-directional, normally open solenoid valve

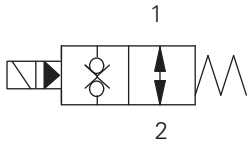
Description

The SBV11-10-O is a bi-directional, 2-way, 2-position, normally open, poppet type, screw-in cartridge, solenoid valve.

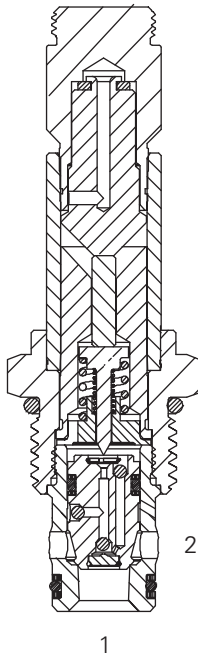
Operation

In the de-energized position, flow is allowed in both directions. In the energized position, flow is blocked in both directions.

Functional Symbol



Sectional View



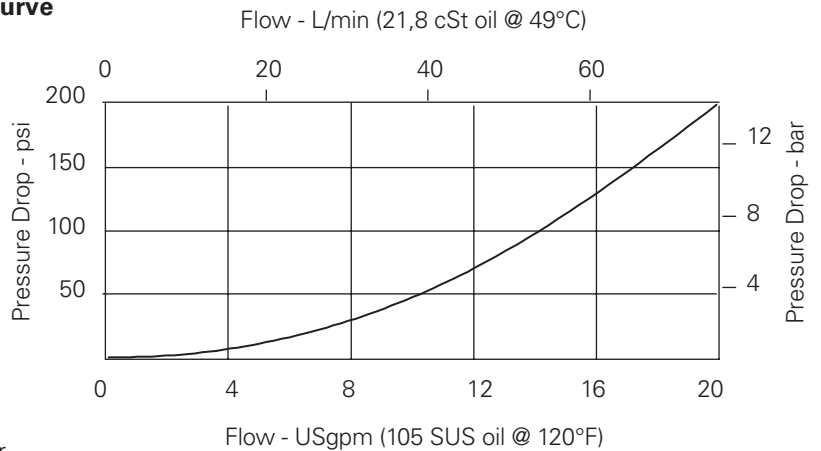
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	76 L/min (20 USgpm)
Internal leakage, port 1 to port 2 or port 2 to port 1	5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum or steel
Weight cartridge only	0,18 kg (0.39 lbs)
Seal kit	565806 (Buna-N), 889627 (Viton®) Viton is a registered trademark of E.I. DuPont

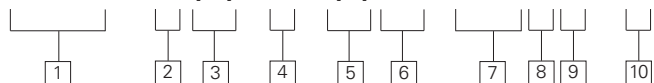
Pressure Drop Curve

Cartridge only



Port 1 to port 2 or
port 2 to port 1
de-energized

SBV11 – 10 (V) – O – (*) ** – *** * H – 00**



1 Function
SBV11 - Solenoid bi-directional valve

2 Size
10 - 10 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
O - Normally open

5 Valve housing material
Blank - Cartridge only
A - Aluminum
S - Steel

6 Port size

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum	Steel
0	Cartridge only		
2G	1/4" BSPP	876702	02-175102
3G	3/8" BSPP	876703	02-175103
3B	3/8" BSPP	02-175462*	–
6H	SAE 6	876700	–
6T	SAE 6	566151*	02-175100
8H	SAE 8	876701	–
8T	SAE 8	–	02-175101

*Light duty housings.
 See section J for housings.

7 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

8 Connector types

Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

9 Coil series

H - 10 series, 29 W
 For coil dimensions see Section C.

10 Special features

00 - None
 (Only required if valve has special features, omitted if "00.")

Dimensions

mm (inch)

Torque cartridge in housing
A - 47-54 Nm (35-40 ft. lbs)
S - 68-75 Nm (50-55 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, nut is included.



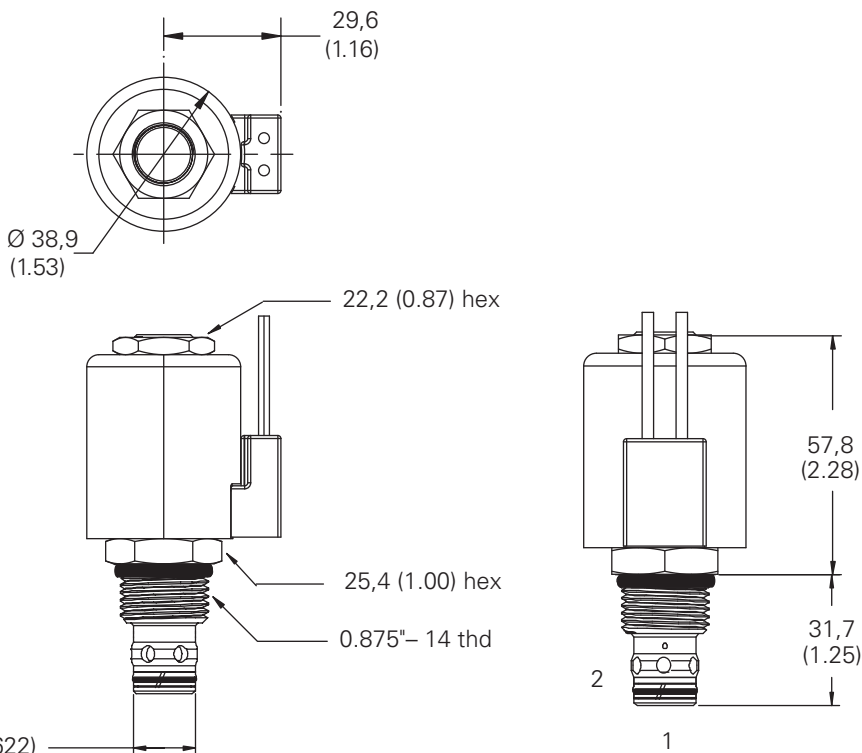
WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



WARNING

Aluminum housings can be used for pressures up to 210 bar (3000 psi) Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).



SV3-12-O/OP/OS

Poppet type, normally open solenoid valve

Description

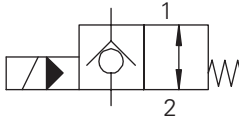
The SV3-12-O is a 2-way, 2-position, poppet-type, pilot-operated, normally open solenoid cartridge valve.

Operation

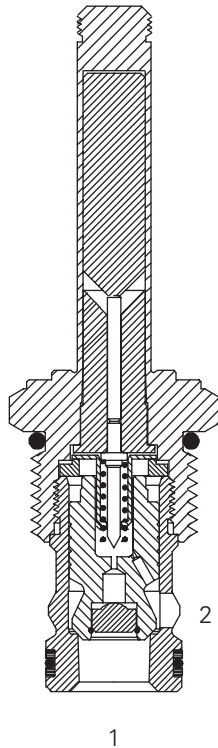
In the de-energized position, flow can pass through the valve from port 1 to port 2, or from port 2 to port 1.

In the energized position, flow is blocked from port 2 to port 1, and allowed from port 1 to port 2 when the coil force is overcome.

Functional Symbol



Sectional View



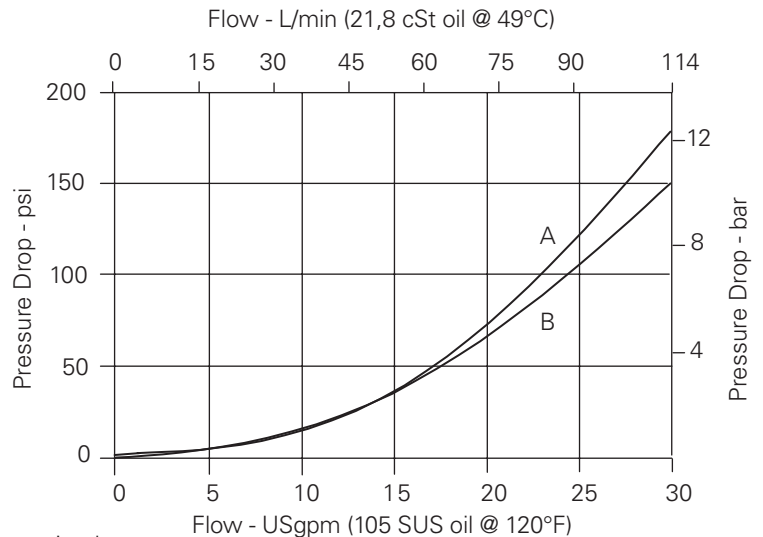
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	114 L/min (30 USgpm)
Internal leakage, port 2 to port 1	less than 5 drops/min. max @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Response times (100% rated voltage and flow)	Energize: 75 ms De-Energize: 150 ms
Cavity	C-12-2 or C-12-2U Add "U" after number if undercut is required. If undercut is not specified, expect 10 psi@15 USgpm and 20 psi @ 30 USgpm higher pressure drop.
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 17/15/12
Housing material (standard)	Aluminum
Weight including coil	0,336 kg (0.74 lbs)
Seal kit	02-165889 (Buna-N), 02-165888 (Viton®) Viton is a registered trademark of E.I. DuPont

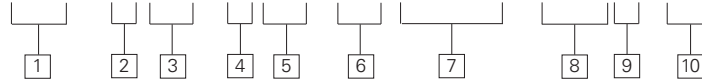
Pressure Drop Curves

Cartridge only



A - Port 2 to port 1 de-energized
B - Port 1 to port 2 energized

SV3 – 12 (V) – O (*) – (A) * (U) – **** * – 00**



1 Function
SV3 - Solenoid valve

2 Size
12 - 12 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
O - Normally open

5 Manual Override Option
Blank - No manual override
P - Push type
S - Screw type
 For valve dimensions with manual override option installed see page A-152.

6 Valve housing material
 Omit for cartridge only
A - Aluminum

Dimensions

mm (inch)

Torque cartridge in aluminum housing 81-95 Nm (60-70 ft. lbs)

Note
 When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER	CAVITY
0	Cartridge only		
4G	1/2" BSPP	02-161118	C-12-2
6G	3/4" BSPP	02-161117	C-12-2
10T	SAE 10	02-160640	C-12-2
12T	SAE 12	02-160644	C-12-2
4GU	1/2" BSPP	02-161116	C-12-2U
6GU	3/4" BSPP	02-161115	C-12-2U
10TU	SAE 10	02-160641	C-12-2U
12TU	SAE 12	02-160645	C-12-2U

See section J for housings.

8 Voltage rating

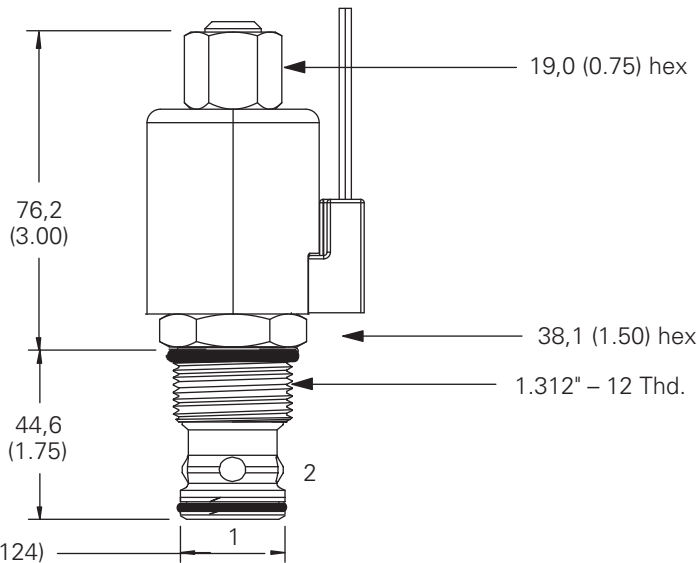
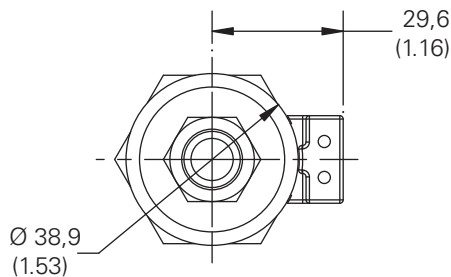
00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

For coil dimensions see Section C.

10 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")
 Note
 Use J series, 23 W coils with this solenoid valve.



SV13-12-O/OP/OS

Poppet type normally open solenoid valve, 350 bar

Description

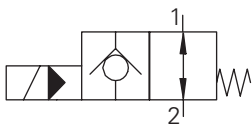
The SV13-12-O is a 2-way, 2-position, pilot operated, poppet type, normally open screw-in cartridge solenoid valve.

Operation

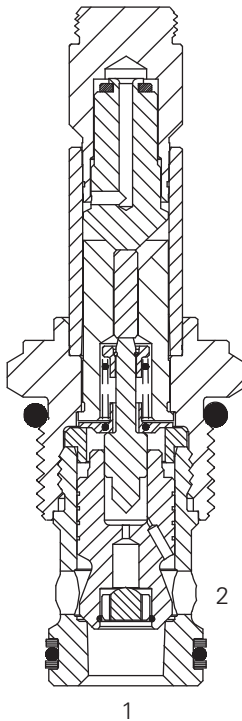
In the de-energized position, flow can pass through the valve from port 1 to port 2, or from port 2 to port 1.

In the energized position, flow is blocked from port 2 to port 1, and allowed from port 1 to port 2 when the coil force is overcome.

Functional Symbol



Sectional View



Application Note

This valve is pilot operated and requires a minimum flow of 1-2 L/min (0.3 - 0.5 USgpm) in order to shift. For operation at very low flow conditions contact your Eaton representative.

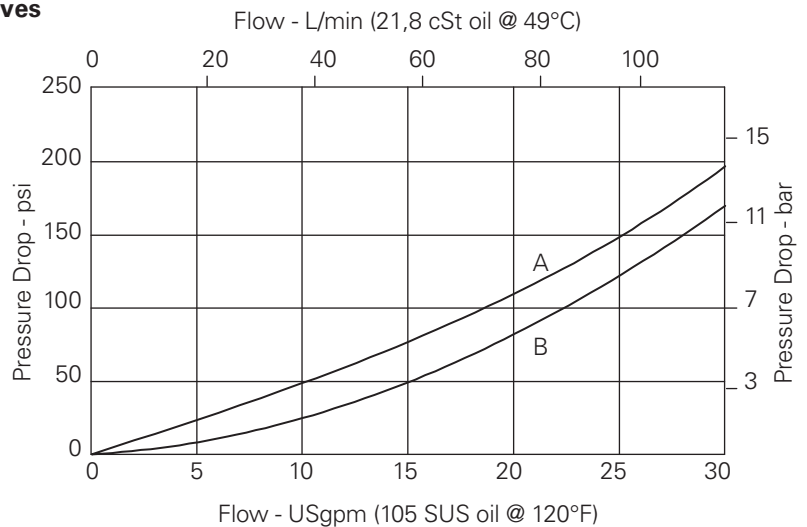
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	114 L/min (30 USgpm)
Internal leakage	less than 5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-12-2 or C-12-2U Add "U" after number if undercut is required. If undercut is not specified, expect 10 psi@15 USgpm and 20 psi @ 30 USgpm higher pressure drop.
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,27 kg (0.59 lbs)
Seal kit	02-165889 (Buna-N), 02-165888 (Viton®) Viton is a registered trademark of E.I. DuPont

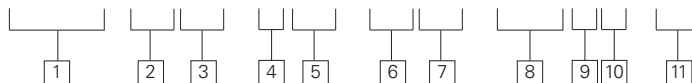
Pressure Drop Curves

Cartridge only



- A** - Port 1 to port 2 de-energized
- B** - Port 2 to port 1 de-energized

SV13 – 12 (V) – O (*) – (S) ** – *** * H – 00**



1 Function
SV13 - Solenoid valve

2 Size
12 - 12 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
O - Normally open

5 Manual override option
Blank - No manual override
P - Push type
S - Screw type

For valve dimensions with manual override option installed see page A-152.

6 Valve housing material
Blank - Cartridge only
S - Steel

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
4G	1/2" BSPP	02-175062
4GU	1/2" BSPP	02-172512
6G	3/4" BSPP	02-169665
6GU	3/4" BSPP	02-162922
10T	SAE 10	02-169744
10TU	SAE 10	02-169817
12T	SAE 12	02-169782
12TU	SAE 12	02-169790

See section J for housings.

8 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

10 Coil series
H - 10 series, 29 W
 For coil dimensions see Section C.

11 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

Dimensions

mm (inch)

Torque cartridge in steel housing 102-115 Nm (75-85 ft. lbs)

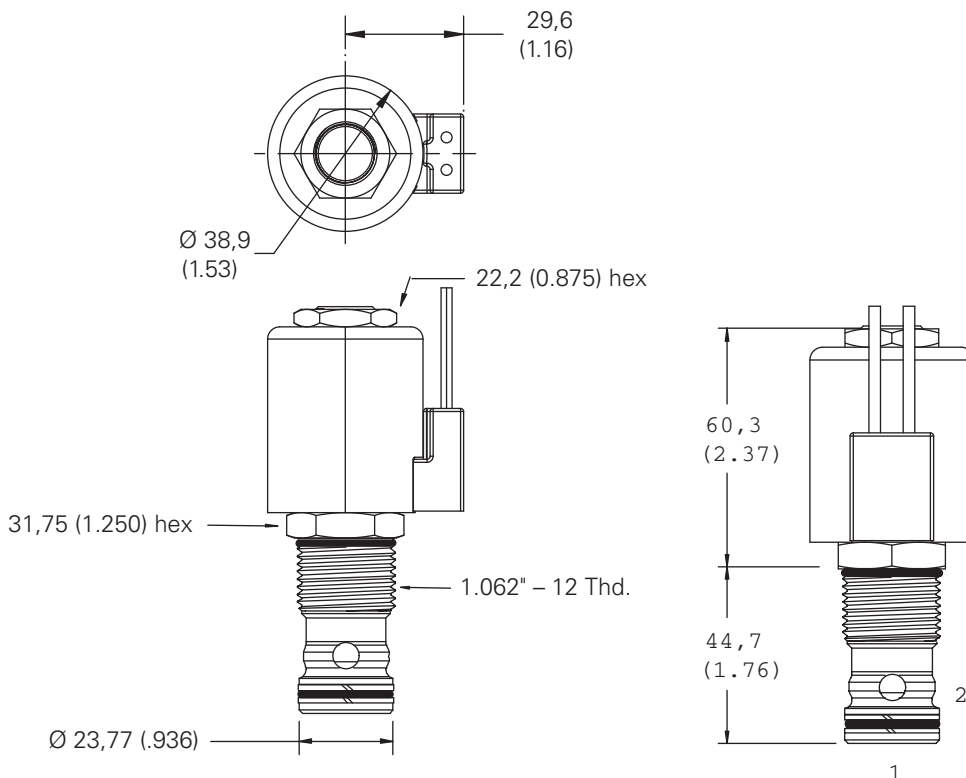
Note

When solenoid valve is ordered as cartridge only, nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SBV11-12-O

Bi-directional, normally open solenoid valve

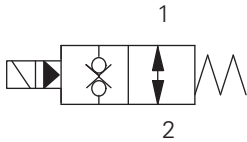
Description

The SBV11-12-O is a bi-directional, 2-way, 2-position, normally open, poppet type, screw-in cartridge, solenoid valve.

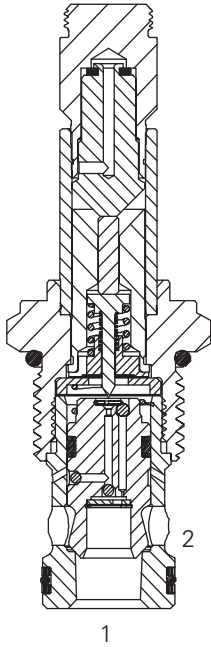
Operation

In the de-energized position, flow is allowed in both directions. In the energized position, flow is blocked in both directions.

Functional Symbol



Sectional View



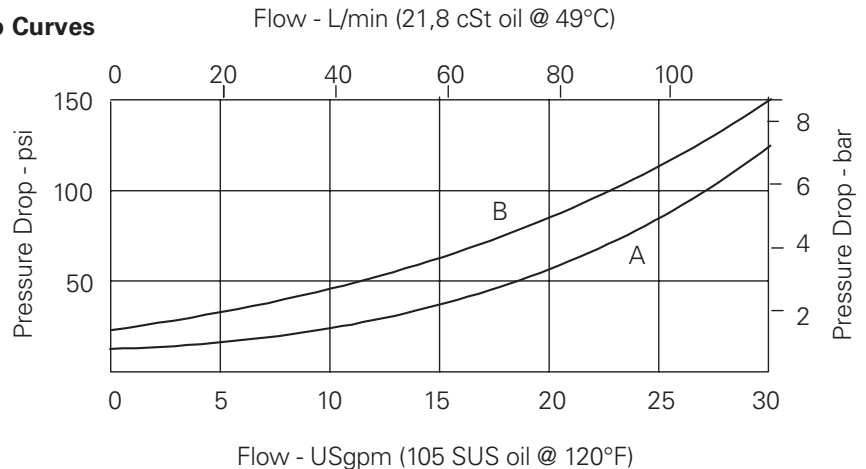
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	114 L/min (30 USgpm)
Internal leakage, port 1 to port 2 & port 2 to port 1	5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-12-2 or C-12-2U Add "U" after number if undercut is required. If undercut is not specified, expect 10 psi@15 USgpm and 20 psi @ 30 USgpm higher pressure drop.
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum or steel
Weight cartridge only	0,27 kg (0.59 lbs)
Seal kit	02-165889 (Buna-N), 02-165888 (Viton®) Viton is a registered trademark of E.I. DuPont

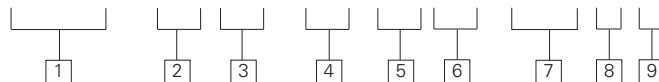
Pressure Drop Curves

Cartridge only



A - Port 1 to port 2
B - Port 2 to port 1

SBV11 - 12 (V) - O - (*) ** - *** * H**



1 Function
SBV11 - Solenoid bi-directional valve

2 Size
12 - 12 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
O - Normally open

5 Valve housing material
Blank - Cartridge only
A - Aluminum
S - Steel

6 Port Size

CODE	PORT SIZE	ALUMINUM	STEEL
0	Cartridge only		
4G	1/2" BSPP	02-161118	02-172062
4GU	1/2" BSPP	02-161116	02-172512
6G	3/4" BSPP	02-161117	02-169665
6GU	3/4" BSPP	02-161115	02-162922
10T	SAE 10	02-160640	02-169744
10TU	SAE 10	02-160641	02-169817
12T	SAE 12	02-160644	02-169782
12TU	SAE 12	02-160645	02-169790

See section J for housings.

8 Connector types

Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

9 Coil series

H - 10 series, 29 W
 For coil dimensions see Section C.

7 Voltage rating

00 - No coil
12D - 12VDC
24D - 24VDC
36D - 36VDC

24A - 24VAC
115A - 115VAC
230A - 230VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
 *Optional arc suppression diode.

10 Special features

00 - None
 (Only required if valve has special features, omitted if "00.")

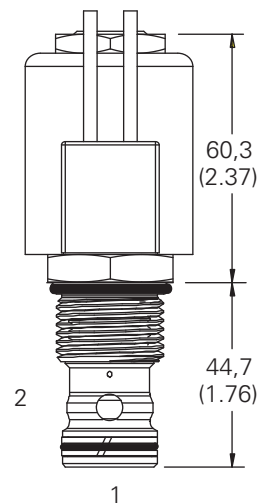
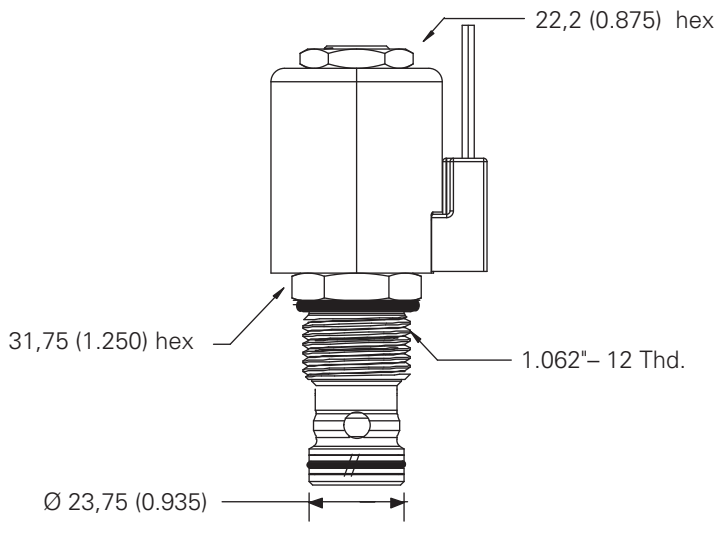
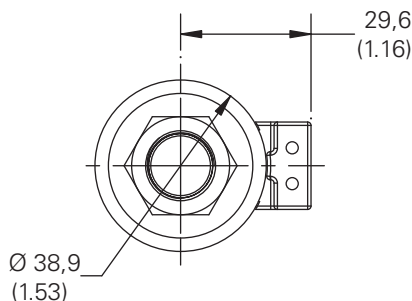
Dimensions

mm (inch)

Torque cartridge in housing
A - 81-95 Nm (60-70 ft. lbs)
S - 102-115 Nm (75-85 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



WARNING

Aluminum housings can be used for pressures up to 210 bar (3000 psi) Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).

SV3-16-O/OP/OS

Poppet type, normally open solenoid valve

Description

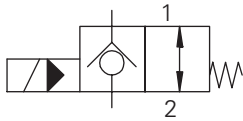
The SV3-16-O is a 2-way, 2-position, poppet type, pilot operated, normally open, screw-in cartridge solenoid valve.

Operation

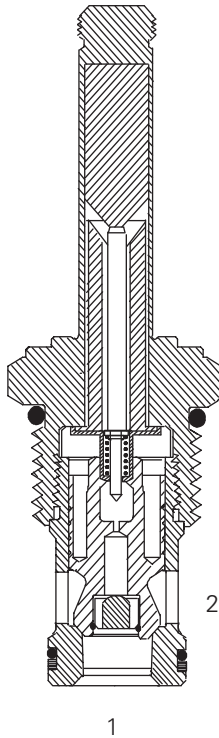
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2.

In the energized position, flow is blocked from port 2 to port 1 and allowed from port 1 to port 2 when coil forces are overcome.

Functional Symbol



Sectional View



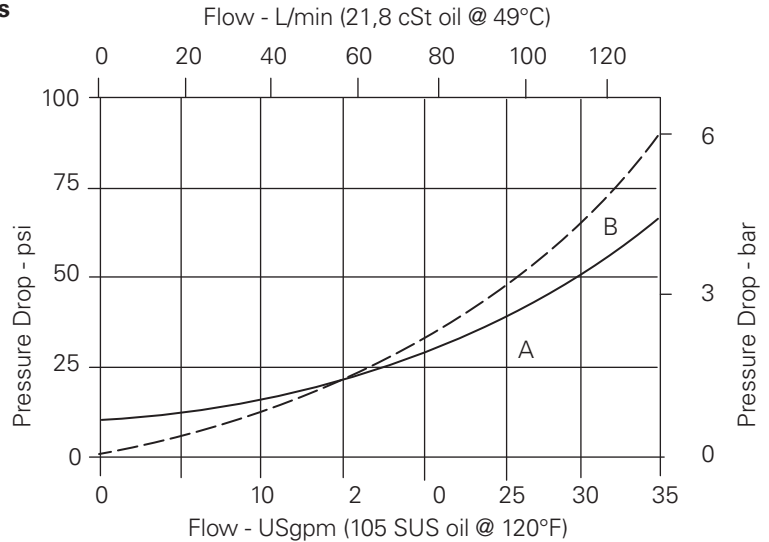
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	132 L/min (35 USgpm)
Internal leakage, port 2 to port 1	less than 5 drops/min. max @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-16-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,9 kg (1.98 lbs)
Seal kit	565810 (Buna-N), 889609 (Viton®) Viton is a registered trademark of E.I. DuPont

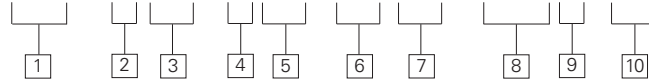
Pressure Drop Curves

Cartridge only



- A** - Port 1 to port 2 energized
- B** - Port 2 to port 1 de-energized

SV3 – 16 (V) – O (*) – (A) * – ***** * – 00**



1 Function
SV3 - Solenoid valve

2 Size
16 - 16 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
O - Normally open

5 Manual Override Option
Blank - No manual override
P - Push type
S - Screw type
 For valve dimensions with manual override option installed see page A-152.

6 Valve housing material
 Omit for cartridge only
A - Aluminum

Dimensions
 mm (inch)

Torque cartridge in aluminum housing 108-122 Nm (80-90 ft. lbs)

Note
 When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING

 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
6B	3/4" BSPP	02-175463*
12T	SAE 12	566149*
6G	3/4" BSPP	876718
10H	SAE 10	876717
12H	SAE 12	566113

See section J for housings.
 *Light duty housing

8 Voltage rating

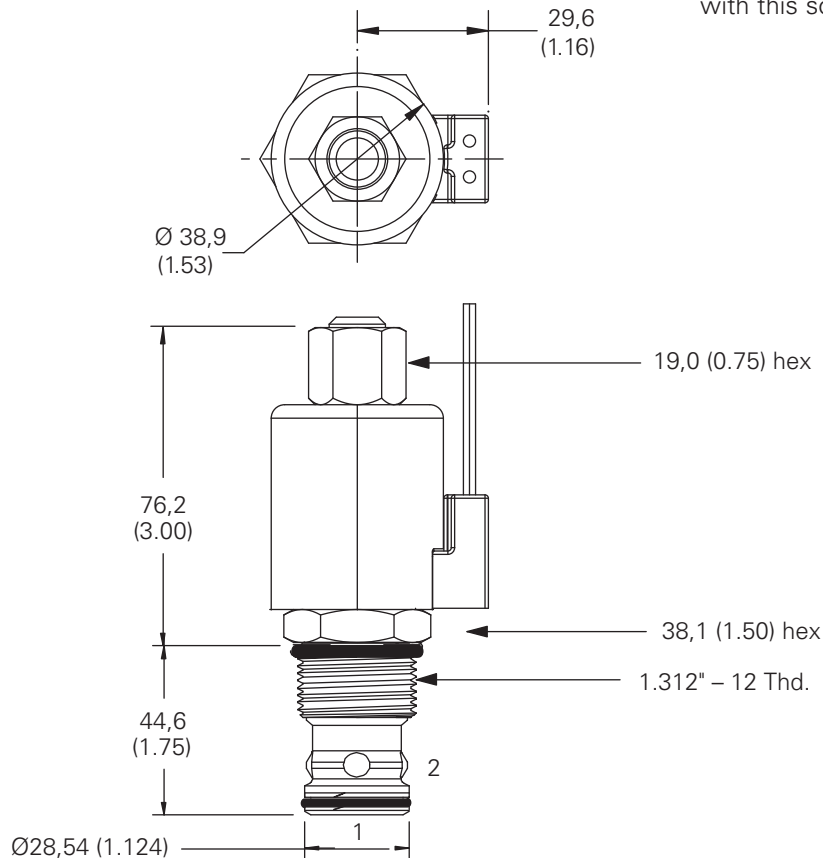
00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)
 For coil dimensions see Section C.

10 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

Note
 Use J series, 23 W coils with this solenoid valve.



SV13-16-O/OP/OS

Poppet type normally open solenoid valve, 350 bar

Description

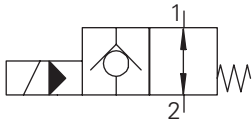
The SV13-16-O is a 2-way, 2-position, pilot operated, poppet type, normally open screw-in cartridge solenoid valve.

Operation

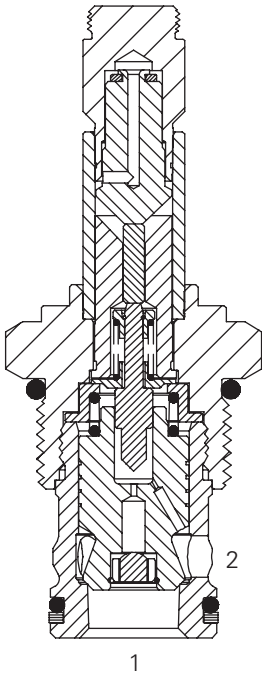
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2. In the energized position,

flow is blocked from port 2 to port 1 and allowed from port 1 to port 2, when the coil forces are overcome.

Functional Symbol



Sectional View



Application Note

This valve is pilot operated and requires a minimum flow of 1-2 L/min (0.3 - .5 USgpm) in order to shift. For operation at very low flow conditions contact your Eaton representative.

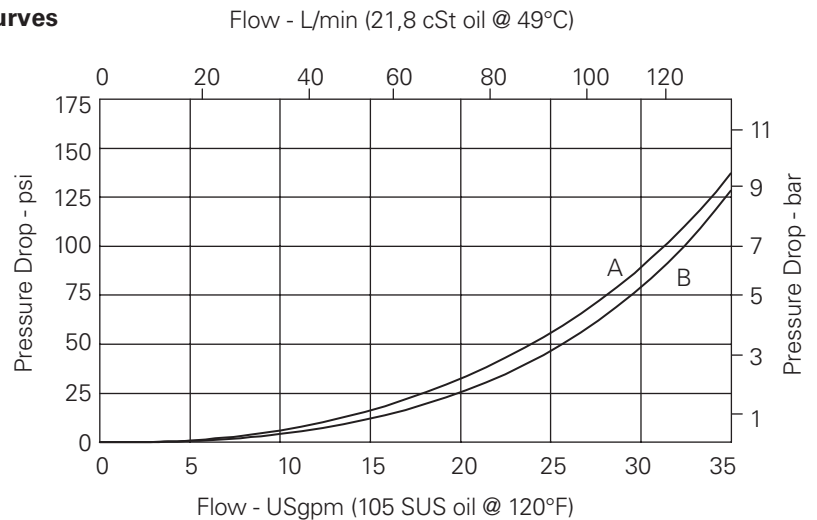
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	132 L/min (35 USgpm)
Internal leakage	less than 5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-16-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,39 kg (0.85 lbs)
Seal kit	565810 (Buna-N), 889609 (Viton®) Viton is a registered trademark of E.I. DuPont

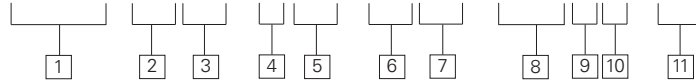
Pressure Drop Curves

Cartridge only



- A** - Port 2 to port 1 de-energized
- B** - Port 1 to port 2

SV13 – 16 (V) – O (*) – (S) ** – *** * H – 00**



- 1 Function**
SV13 - Solenoid valve

- 2 Size**
16 - 16 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
O - Normally open

- 5 Manual override option**
Blank - No manual override
P - Push type
S - Screw type
For valve dimensions with manual override option installed see page A-152.

- 6 Valve housing material**
Blank - Cartridge only
S - Steel

- 7 Port Size**

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
4G	1/2" BSPP	02-175106
6G	3/4" BSPP	02-175107
10T	SAE 10	02-175104
12T	SAE 12	02-175105

See section J for housings.

- 9 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

- 10 Coil series**
H - 10 series, 29 W
For coil dimensions see Section C.

- 8 Voltage rating**

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

- 11 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")

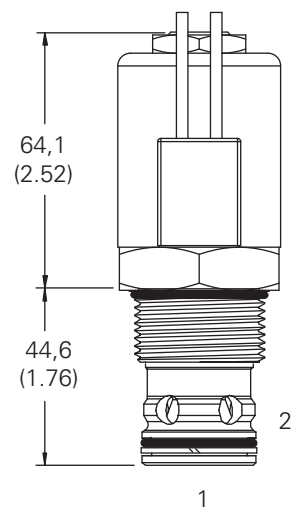
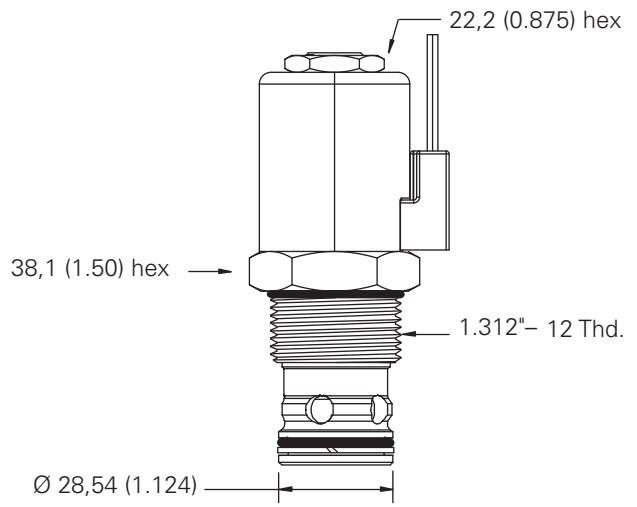
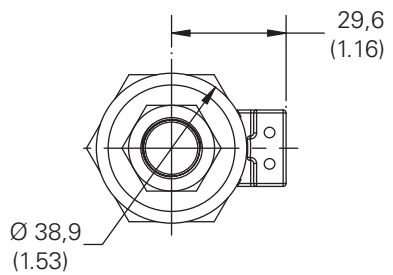
Dimensions

mm (inch)

Torque cartridge in steel housing 136-149 Nm (100-110 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, nut is included.



WARNING

 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV3-20-O/OP/OS

Poppet type, normally open solenoid valve

Description

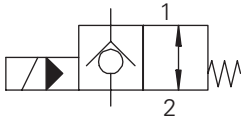
The SV3-20-O is a 2-way, 2-position, poppet type, pilot operated, normally open, screw-in cartridge solenoid valve.

Operation

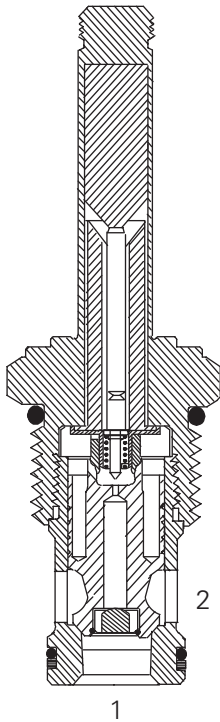
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2. In the energized position,

flow is blocked from port 2 to port 1 and allowed from port 1 to port 2 when coil forces are overcome.

Functional Symbol



Sectional View



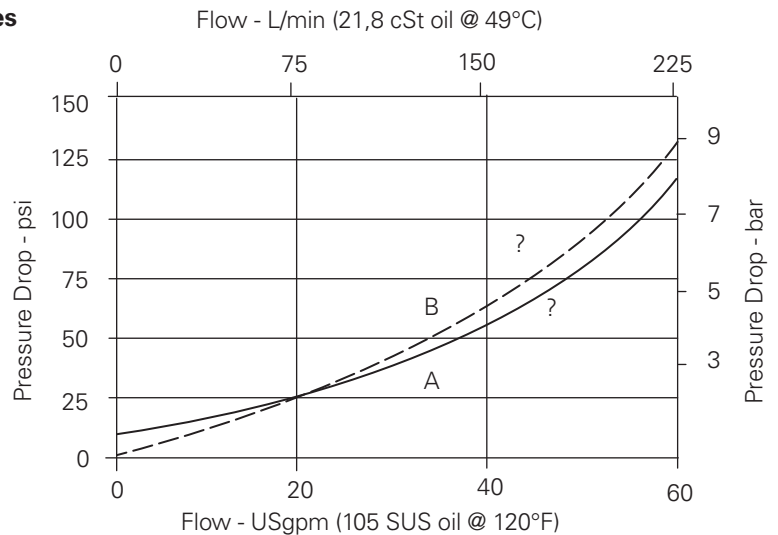
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

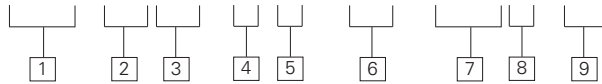
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	227 L/min (60 USgpm)
Internal leakage, port 2 to port 1	less than 5 drops/min. max @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Response times (100% rated voltage and flow)	Energize: 75 ms De-Energize: 150 ms
Cavity	C-20-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	1,2 kg (2.70 lbs)
Seal kit	889615 (Buna-N), 889619 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

Pressure Drop Curves

Cartridge only



SV3 – 20 (V) – O (*) – * – ***** * – 00**



1 Function
SV3 - Solenoid valve

2 Size
20 - 20 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
C - Normally open

5 Manual override option
Blank - No manual override
P - Push type
S - Screw type
 For valve dimensions with manual override option installed see page A-152.

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
8B	1" BSPP	02-175464*
16T	SAE 16	566409*
6G	3/4" BSPP	876732
8G	1" BSPP	876734
12H	SAE 12	876733
16H	SAE 16	876735

*Light duty housings.
 See pages J-3 and J-4 for housings.

7 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

8 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)
 For coil dimensions see Section C.

9 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

Note
 Use J series, 23 W coils with this solenoid valve.

Dimensions

mm (inch)

Torque cartridge in aluminum housing 128-155 Nm (95-115 ft. lbs)

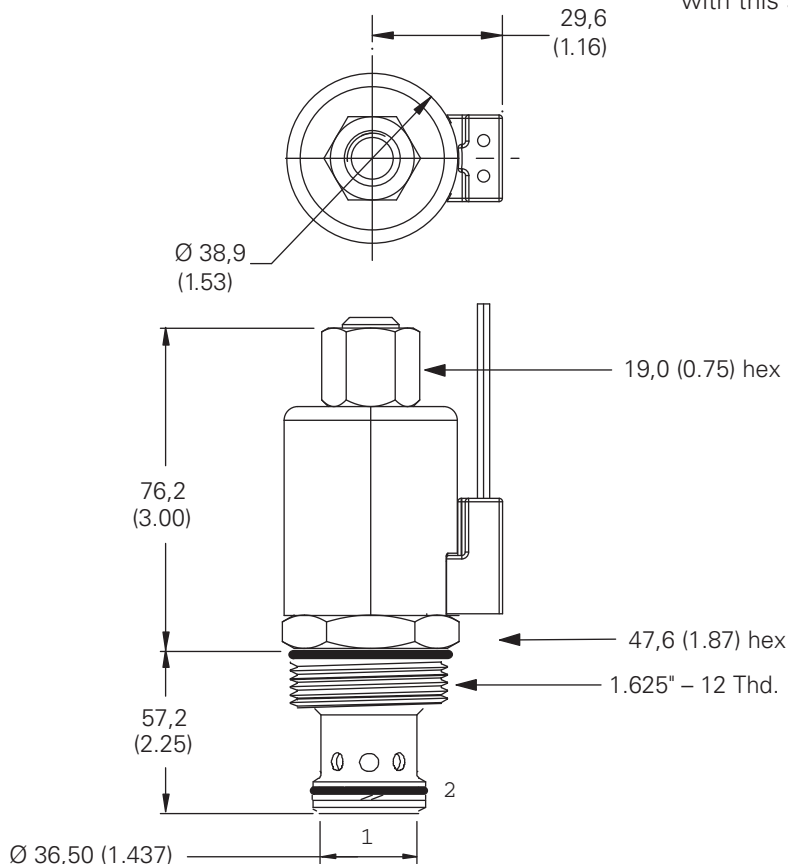
Note

When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV13-20-O/OP/OS

Poppet type, normally open solenoid valve

Description

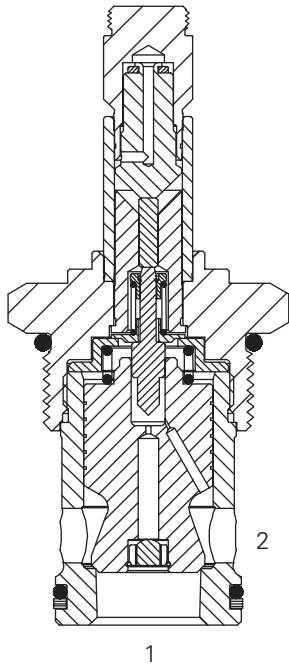
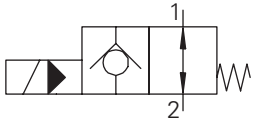
The SV13-20-O is a 2-way, 2-position, pilot operated, poppet type, normally open screw-in cartridge solenoid valve.

Operation

In the de-energized position, this valve allows bi-directional flow between port 1 and port 2. In the energized position,

flow is blocked from port 2 to port 1 and allowed from port 1 to port 2, when the coil forces are overcome.

Functional Symbol



Application Note

This valve is pilot operated and requires a minimum flow of 1-2 L/min (0.3 - .5 USgpm) in order to shift. For operation at very low flow conditions contact your Eaton representative.

RATINGS AND SPECIFICATIONS

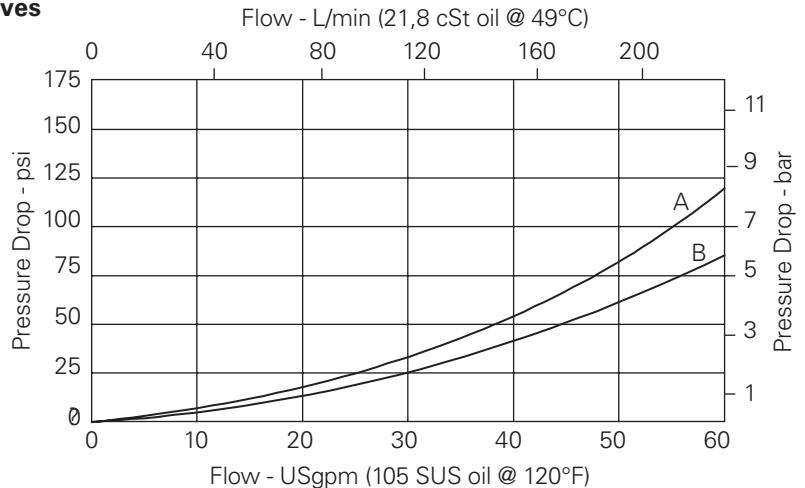
Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)*
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	227 L/min (60 USgpm)
Internal leakage, port 2 to port 1	less than 5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-20-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,62 kg (1.37 lbs)
Seal kit	889615 (Buna-N), 889619 (Viton®) Viton is a registered trademark of E.I. DuPont

*For application pressure over 280 bar (4000 psi) consult factory

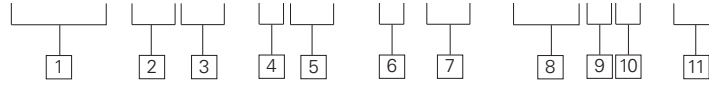
Pressure Drop Curves

Cartridge only



- A** - Port 2 to port 1 de-energized
- B** - Port 1 to port 2

SV13 – 20 (V) – O (*) – (S) * – ***** H – 00**



1 Function
SV13 - Solenoid valve

2 Size
20 - 20 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
O - Normally open

5 Manual override option
Blank - No manual override
P - Push type
S - Screw type

For valve dimensions with manual override option installed see page A-152.

6 Valve housing material
Blank - Cartridge only
S - Steel

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
6G	3/4" BSPP	02-175110
8G	1" BSPP	02-175111
12T	SAE 12	02-175108
16T	SAE 16	02-175109

See section J for housings.

8 Voltage rating
00 - No coil
12D - 12VDC
24D - 24VDC
36D - 36VDC
24A - 24VAC
115A - 115VAC
230A - 230VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
 *Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

10 Coil series
H - 10 series, 29 W
 For coil dimensions see Section C..

9 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

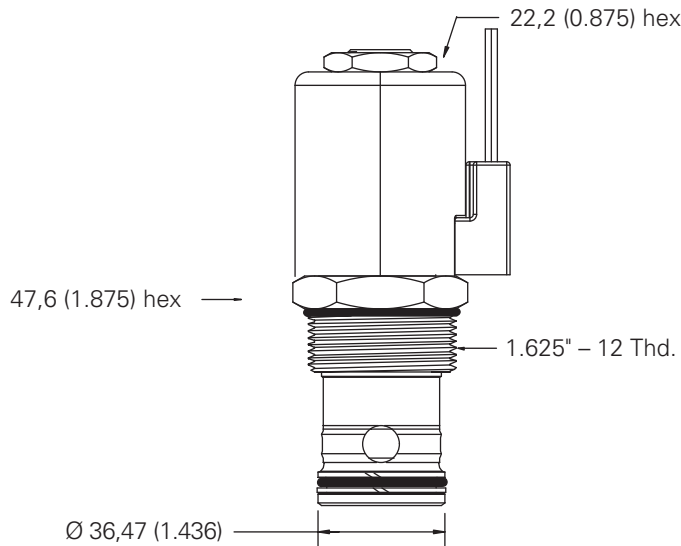
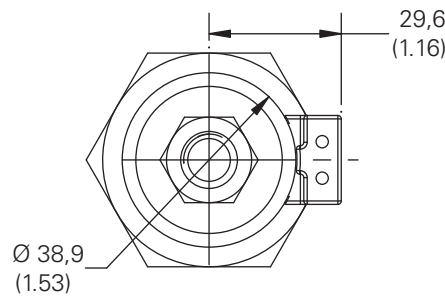
Dimensions

mm (inch)

Torque cartridge in steel housing 163-183 Nm (120-135 ft. lbs)

Note

When solenoid valve is ordered as cartridge only,



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV4-8-O/OM

Poppet type, normally open solenoid valve

Description

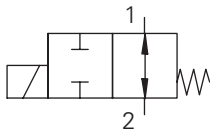
The SV4-8-O is a 2-way, spool type, direct acting, normally open, solenoid valve.

Operation

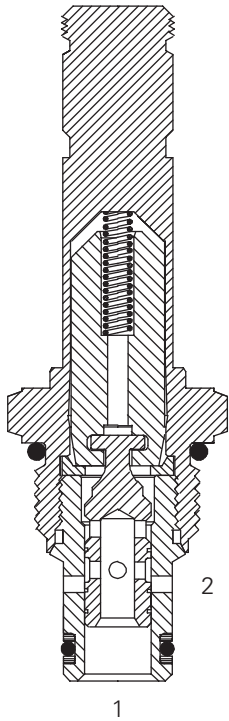
In the de-energized position, the SV4-8-O valve allows bi-directional flow between ports 1 and 2.

In the energized position, both ports 1 and 2 are blocked.

Functional Symbol



Sectional View



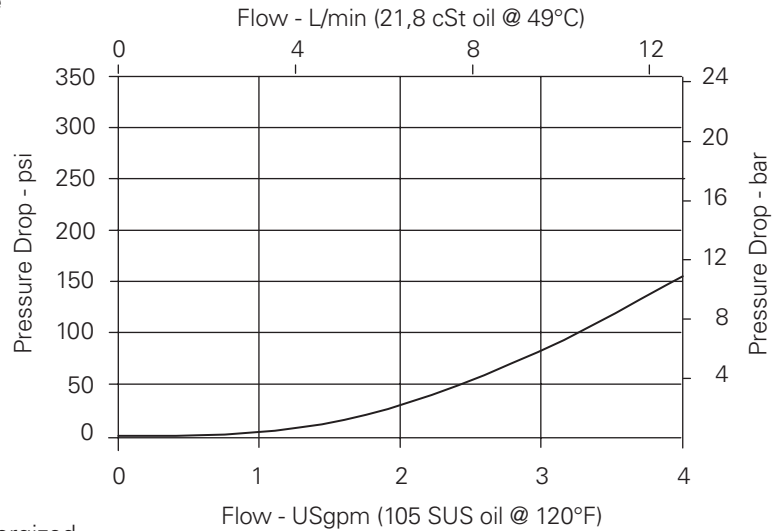
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	13 L/min (4 USgpm)
Internal leakage	82 cm ³ /min (5 in ³ /min) max. @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Response times (100% rated voltage and flow)	Energize: 21 ms De-Energize: 38 ms
Cavity	C-8-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,27 kg (0.60 lbs)
Seal kit	02-160777 (Buna-N), 02-160778 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

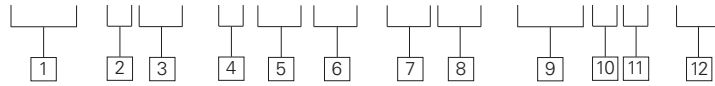
Pressure Drop Curve

Cartridge only



Port 2 to port 1 de-energized
Port 1 to port 2 de-energized

SV4 - 8 (V) - O (M) (F) - (A) ** - *** S - 00**



- 1 Function**
SV4 - Solenoid valve

- 2 Size**
8 - 8 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
O - Normally open

- 5 Manual override option**
Blank - No manual override
M - Knob type
For valve dimensions with manual override option installed see page A-153.

- 6 Filter option**
Blank - None
F - Filter screen

7 Valve housing material
Omit for cartridge only
A - Aluminum

8 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-160727
3G	3/8" BSPP	02-160728
4T	SAE 4	02-160730
6T	SAE 6	02-160731
8T	SAE 8	02-160732

See section J for housings.

9 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

- 10 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

11 Coil series
S - 8 series, 20 W
For coil part numbers see Section C.

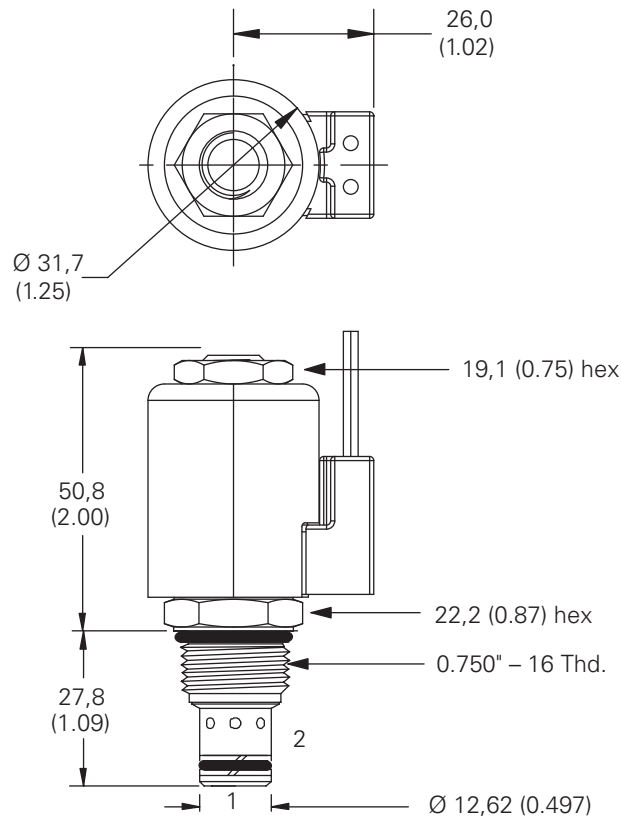
12 Special features
00 - None
(Only required if valve has special features, omitted if "00.")

Dimensions
mm (inch)

Torque cartridge in steel or aluminum housing 34-41 Nm (25-30 ft. lbs)

Note
When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV14-8-O/OM

Spool type, normally open solenoid valve, 350 bar

Description

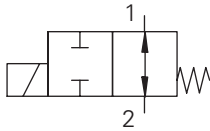
The SV14-8-O is a 2-way, 2-position, spool type, direct acting, normally open screw-in cartridge solenoid valve.

Operation

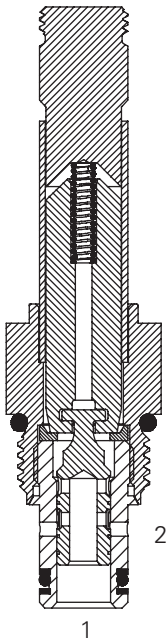
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2.

In the energized position, both ports are closed.

Functional Symbol



Sectional View



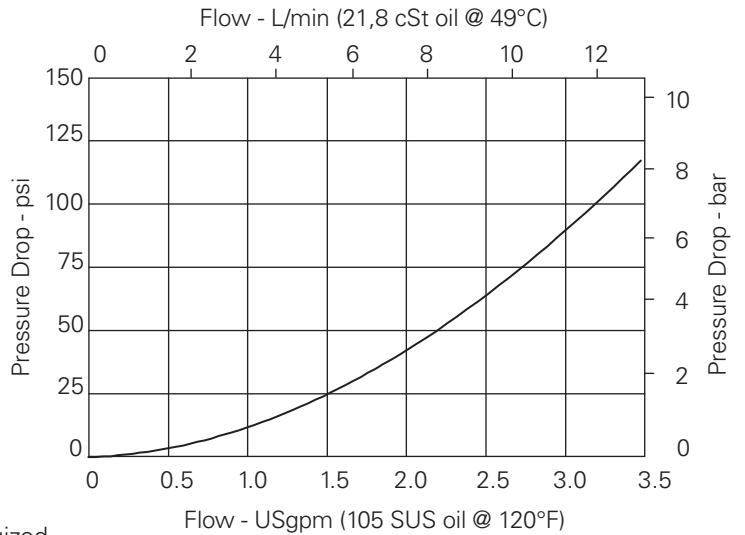
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	13 L/min (3.5 USgpm)
Internal leakage, port 2 to port 1	140 cm ³ /min (8.5 in ³ /min) max. @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-8-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,11 kg (0.25 lbs)
Seal kit	02-165875 (Buna-N), 02-165877 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

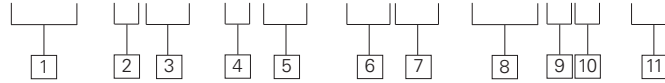
Pressure Drop Curve

Cartridge only



Port 2 to port 1 de-energized
Port 1 to port 2 de-energized

SV14 – 8 (V) – O (M) – (S) ** – *** * P – 00**



- 1 Function**
SV14 - Solenoid valve

- 2 Size**
8 - 8 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
O - Normally open

- 5 Manual override option**
Blank - No manual override
M - Manual override

- 6 Valve housing material**
Blank - Cartridge only
S - Steel

- 7 Port Size**

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-160733
3G	3/8" BSPP	02-160734
4T	SAE 4	02-160736
6T	SAE 6	02-160737
8T	SAE 8	02-160738

- 9 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

- 10 Coil series**
P - 8 series, 23 W
For coil dimensions see Section C.

For valve dimensions with manual override option installed see page A-153.

See section J for housings.

- 8 Voltage rating**

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

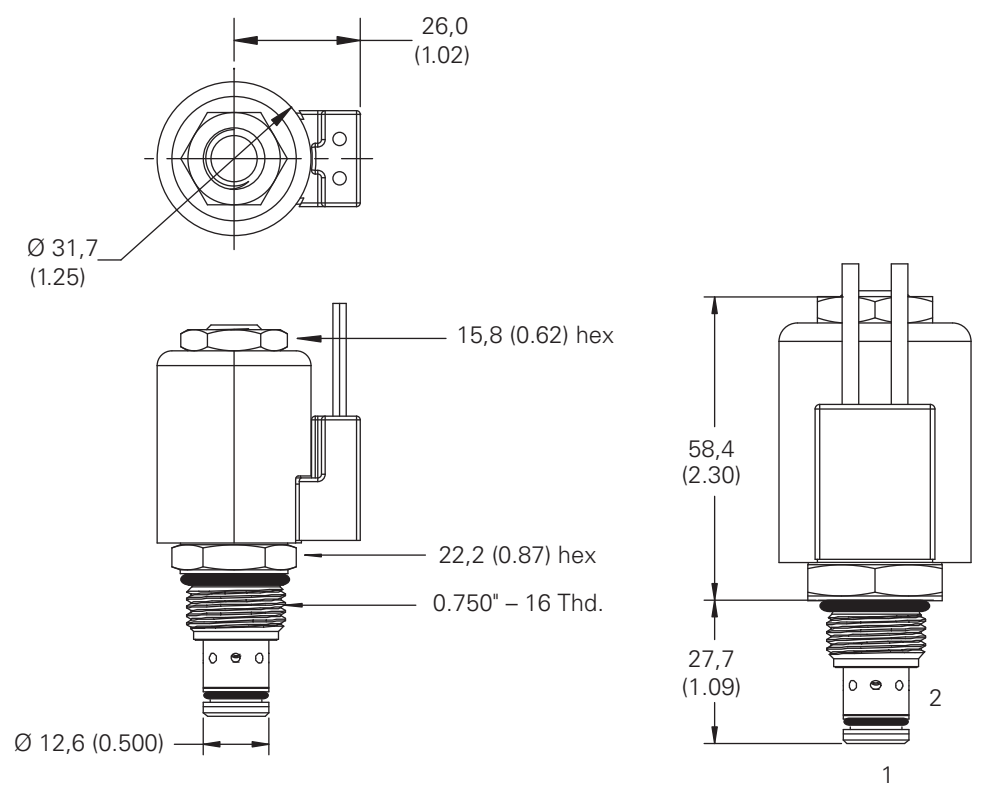
- 11 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")

Dimensions
mm (inch)

Torque cartridge in steel or aluminum housing
34-41 Nm (25-30 ft. lbs)

Note
When solenoid valve is ordered as cartridge only, nut is included.

WARNING
Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV4-10-O/OM/OR

Spool type, normally closed solenoid valve

Description

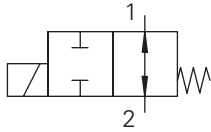
The SV4-10-O is a 2-way, 2-position, spool type, direct acting, normally open, screw-in cartridge solenoid valve.

Operation

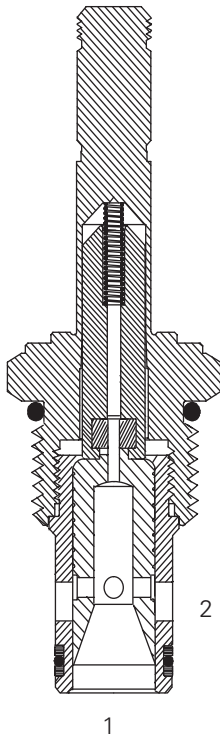
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2.

In the energized position both ports are closed.

Functional Symbol



Sectional View



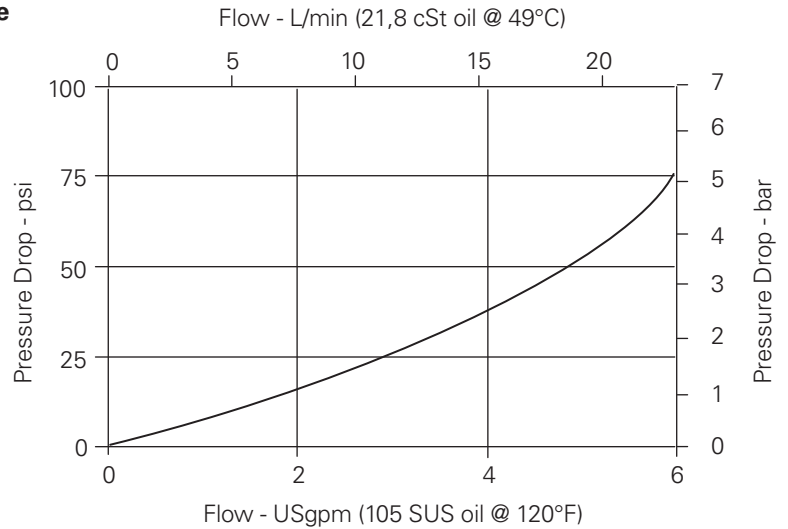
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	23 L/min (6 USgpm)
Internal leakage, port 2 to port 1	82 cm ³ /min (5 in ³ /min) max. @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including cartridge	0,4 kg (0.87 lbs)
Seal kit	565806 (Buna-N), 889627 (Viton®) Viton is a registered trademark of E.I. DuPont

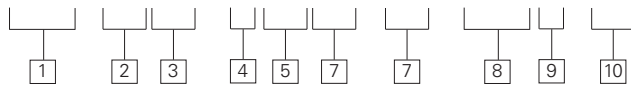
Pressure Drop Curve

Cartridge only



Port 2 to port 1 or
Port 1 to port 2 de-energized

SV4 – 10 (V) – O (*) (F) – ** – *** * – 00**



1 Function
SV4 - Solenoid valve

2 Size
10 - 10 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
O - Normally open

5 Manual override option
Blank - No manual override
M - Knob type
R - Cable type
 For valve dimensions with manual override option installed see page A-153.

6 Filter option
Blank - None
F - Filter screen

Dimensions
 mm (inch)

Torque cartridge in aluminum housing 47-54 Nm (35-40 ft. lbs)

Note
 When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
3B	3/8" BSPP	02-175462*
6T	SAE6	566151*
2G	1/4" BSPP	876702
3G	3/8" BSPP	876703
6H	SAE 6	876700
8H	SAE 8	876701

*Light duty housing. See section J for housings.

8 Voltage rating

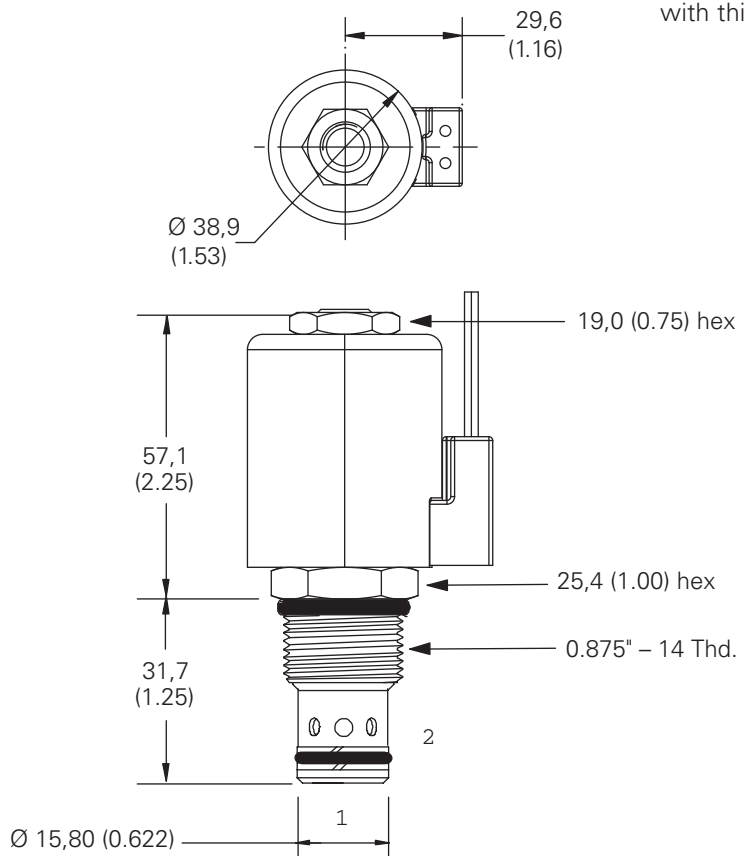
00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)
 For coil dimensions see Section C.

10 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

Note
 Use J series, 23 W coils with this solenoid valve.



SV14-10-O/OM

Spool type, normally open solenoid valve, 350 bar

Description

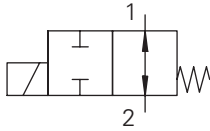
The SV14-10-O is a 2-way, 2-position, spool type, direct acting, normally open screw-in cartridge solenoid valve.

Operation

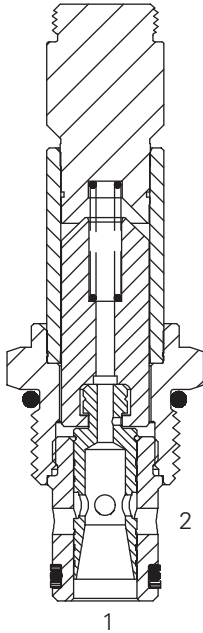
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2.

In the energized position, both ports are closed.

Functional Symbol



Sectional View



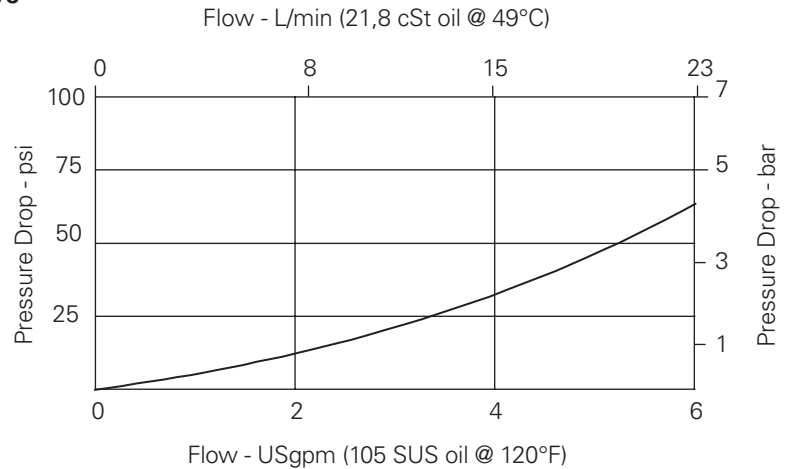
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	23 L/min (6 USgpm)
Internal leakage, port 2 to port 1	140 cm ³ /min. (8.5 in ³ /min.) max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-2
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,18 kg (0.39 lbs)
Seal kit	566806 (Buna-N), 889627 (Viton®) Viton is a registered trademark of E.I. DuPont

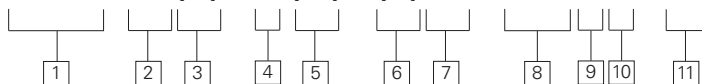
Pressure Drop Curve

Cartridge only



Port 2 to port 1 or
Port 1 to port 2 de-energized

SV14 – 10 (V) – O (M) – (S) ** – *** * H – 00**



1 Function
SV14 - Solenoid valve

2 Size
10 - 10 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
O - Normally open

5 Manual override option
Blank - No manual override
M - Manual override
For valve dimensions with manual override option installed see page A-153.

6 Valve housing material
Blank - Cartridge only
S - Steel

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-175102
3G	3/8" BSPP	02-175103
6T	SAE 6	02-175100
8T	SAE 8	02-175101

See section J for housings.

8 Voltage rating
Blank - No coil
12D - 12VDC
24D - 24VDC
36D - 36VDC
24A - 24VAC
115A - 115VAC
230A - 230VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
*Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

10 Coil series
H - 10 series, 29 W
For coil dimensions see Section C..

11 Special features
00 - None
(Only required if valve has special features, omitted if "00.")

Dimensions

mm (inch)

Torque cartridge in steel housing 68-75 Nm (50-55 ft. lbs)

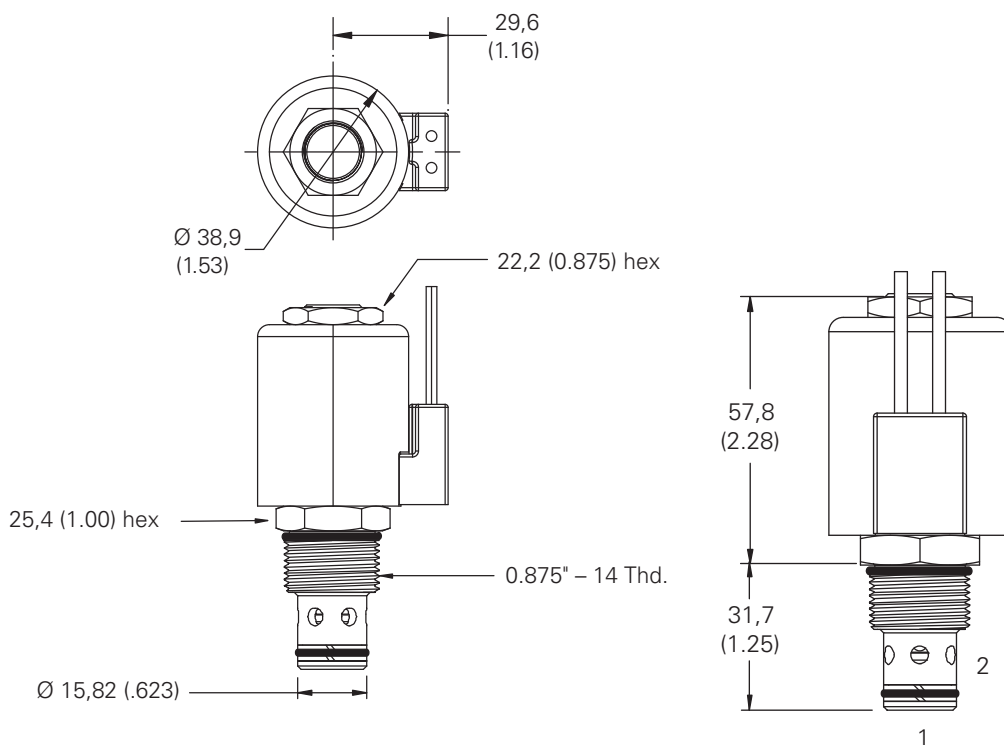
Note

When solenoid valve is ordered as cartridge only, nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV1-8-3/3M

3-way, 2-position spool type solenoid valve,

Description

The SV1-8-3 is a 3-way, 2-position, direct acting, spool type solenoid valve. This valve can be used in applications requiring separate pressure and tank

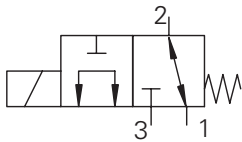
lines, such as a single acting cylinder, or any other application where a three-way, two-position solenoid valve is needed.

Operation

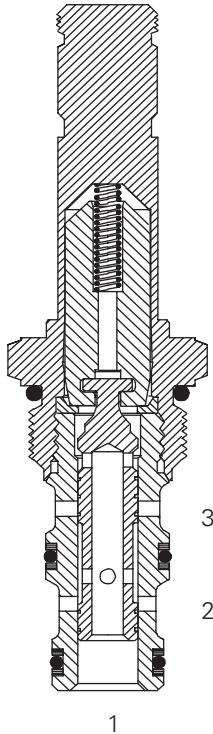
In the de-energized position, the SV1-8-3 allows flow from port 2 to port 1, while port 3 is blocked.

In the energized position, flow is allowed from port 1 to port 3, while port 2 is blocked.

Functional Symbol



Sectional View



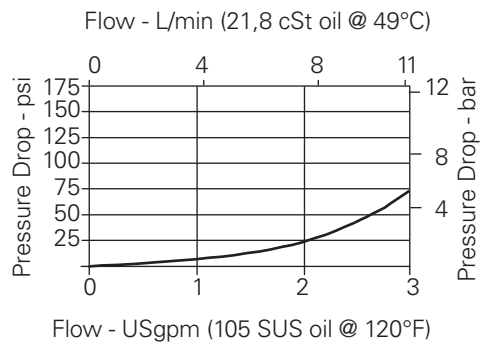
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	11 L/min (3 USgpm)
Internal leakage (per land)	82 cm ³ /min (5 in ³ /min) max. @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-8-3
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,30 kg (0.66 lbs)
Seal kit	02-160755 (Buna-N), 02-160756 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

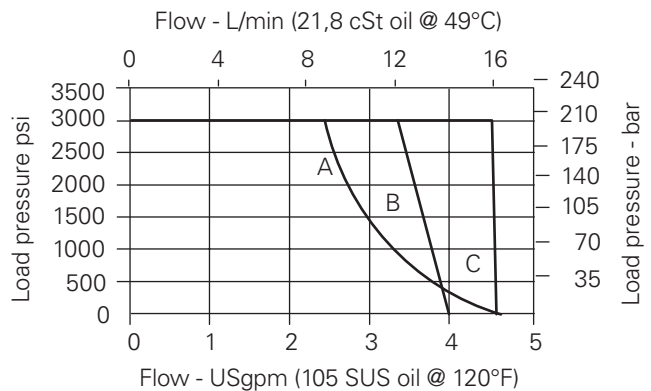
Pressure Drop Curves

Cartridge only

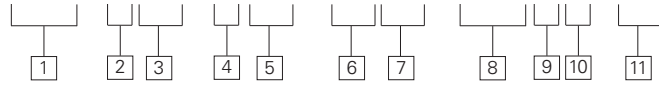


Operating Limits

- A** - Selector 1 to 3
- B** - Normally Open
- C** - Normally closed and Selector 1 to 2



SV1 – 8 (V) – 3 (M) – (A) ** – *** S – 00**



- 1 Function**
SV1 - Solenoid valve

- 2 Size**
8 - 8 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
3 - 3-way, 2 position

- 5 Manual override option**

Blank - No manual override
M - Knob type
For valve dimensions with manual override option installed see page A-153.

6 Valve housing material
Omit for cartridge only
A - Aluminum

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-160739
3G	3/8" BSPP	02-160740
4T	SAE 4	02-160741
6T	SAE 6	02-160742

See section J for housings.

- 8 Voltage rating**
- Blank - No coil
 - 12D - 12VDC
 - 24D - 24VDC
 - 36D - 36VDC
 - 24A - 24VAC
 - 115A - 115VAC
 - 230A - 230VAC
 - 12B - 12VDC/w diode*
 - 24B - 24VDC/w diode*
- *Optional arc suppression diode.

- 9 Connector types**
- Blank - No coil
 - G - ISO 4400 DIN 43650
 - Q - Spade terminals
 - W - Leadwire
 - N - Deutsch (DC only)
 - Y - Amp JR (DC only)
 - D - Metripack 150 male (DC only)
 - J - Metripack 280 male (DC only)
-
- 10 Coil series**
S - 8 series, 20 W

- 11 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")

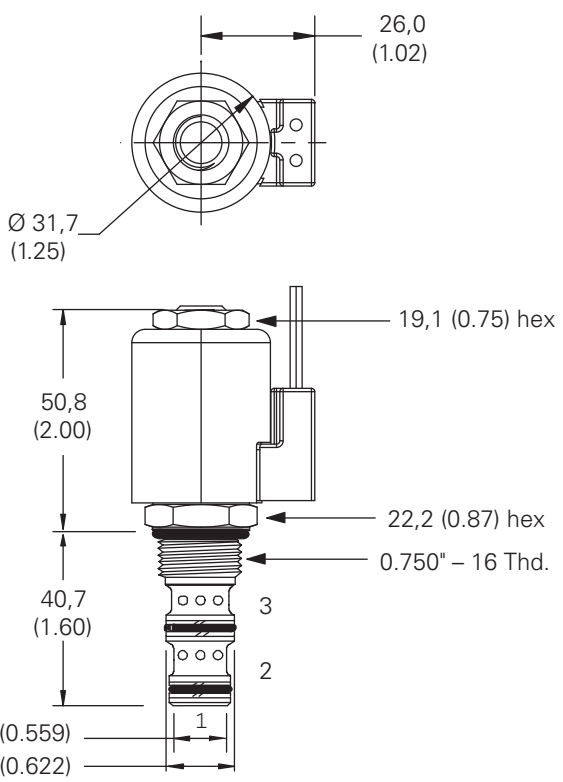
Dimensions

mm (inch)

Torque cartridge in steel or aluminum housing
34-41 Nm (25-30 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV11-8-3/3M

3-way, 2-position spool type solenoid valve, 350 bar

Description

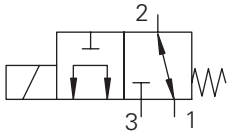
The SV11-8-3 is a 3-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

Operation

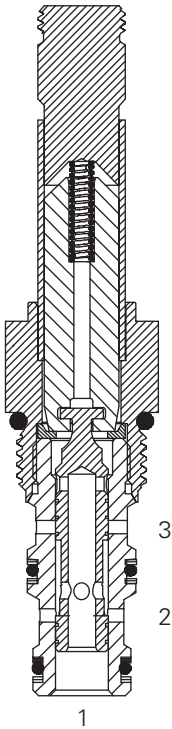
In the de-energized position, this valve allows flow from port 2 to port 1 while port 3 is blocked.

In the energized position, flow is allowed from port 1 to port 3 while port 2 is blocked.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

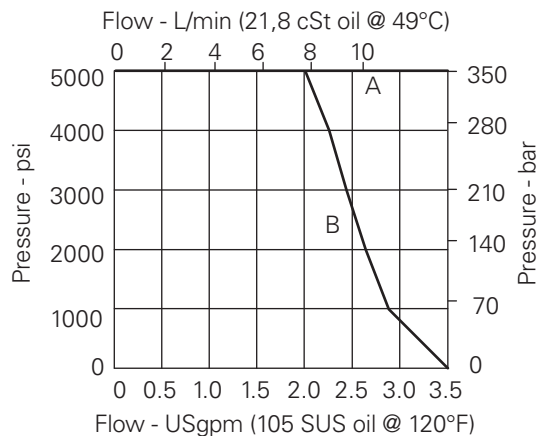
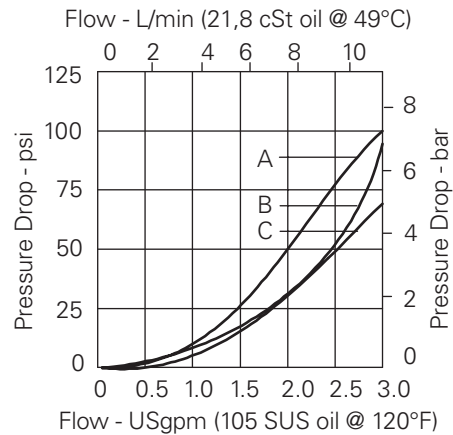
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	11 L/min (3 USgpm)
Internal leakage, combined port 2 and port 1	140 cm ³ /min. (8.5 in ³ /min.) max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-8-3
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,13 kg (0.28 lbs)
Seal kit	02-160755 (Buna-N), 02-160756 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

Performance characteristics

Cartridge only

Pressure drop vs. flow

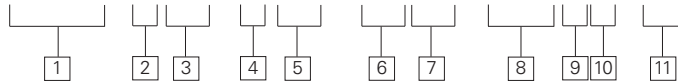
- A - Port 1 to 2 and 1 to 3
- B - Port 3 to 1



Operating Limits

- A - Normally open & closed
- B - Selector 1 to 2 and 1 to 3

SV11 – 8 (V) – 3 (M) – (S) ** – ** * P – 00**



1 Function
SV11 - Solenoid valve

2 Size
8 - 8 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
3 - 3-way, 2 position

5 Manual override option
Blank - No manual override
M - Manual override
 For valve dimensions with manual override option installed see page A-153.

6 Valve housing material
Blank - Cartridge only
S - Steel

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-160743
3G	3/8" BSPP	02-160744
4T	SAE 4	02-160745
6T	SAE 6	02-160746

See section J for housings.

8 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

10 Coil series
P - 8 series, 23 W
 For coil dimensions see Section C.

11 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

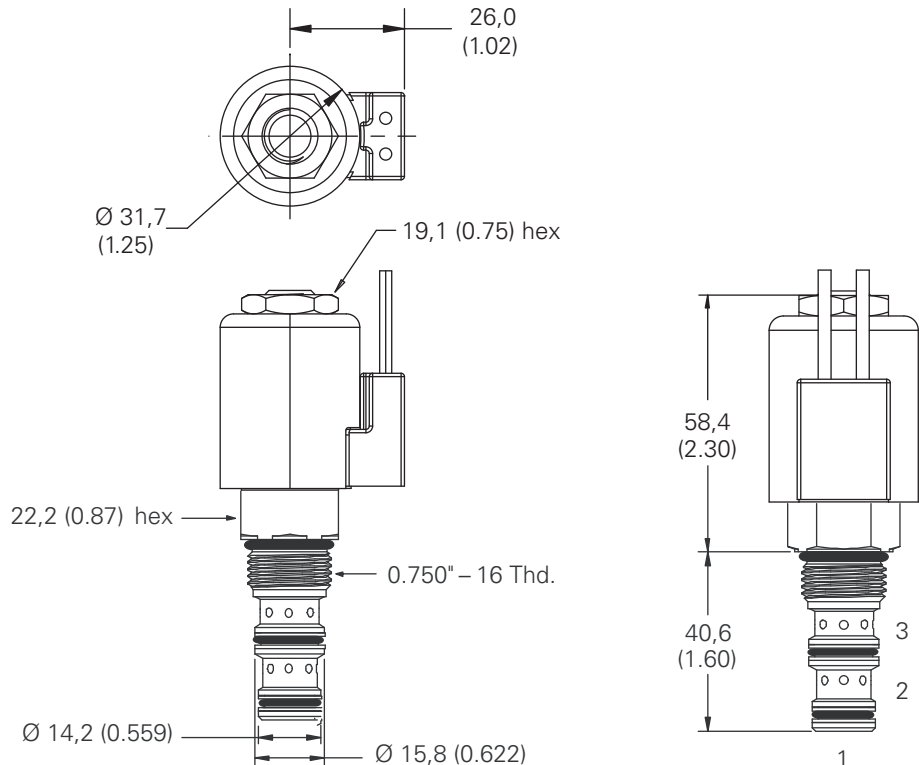
Dimensions

mm (inch)

Torque cartridge in steel or aluminum housing
 34-41 Nm (25-30 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV4-8-3/3M

3-way, 2-position, spool type solenoid valve

Description

The SV4-8-3 is a 3-way, 2-position, direct acting, spool type solenoid valve.

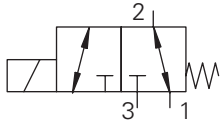
Operation

In the de-energized position, the SV4-8-3 allows flow from port 2 to port 1, while port 3 is blocked.

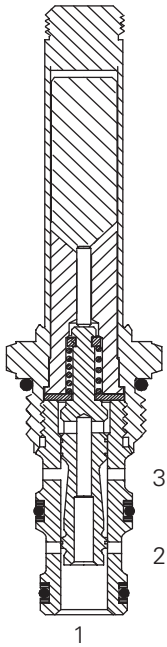
In the energized position, flow is allowed from port 2 to port 3, while blocking port 1.

Pressure on port 1 should not exceed 20 bar (300 psi).

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

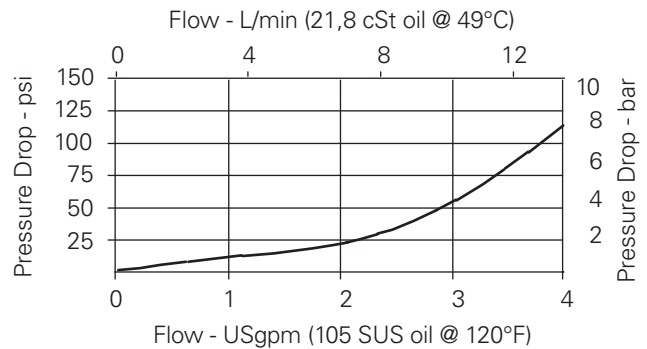
Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	13 L/min (4 USgpm)
Internal leakage	82 cm ³ /min (5 in ³ /min) max. @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Response times (100% rated voltage and flow)	Energize: 22 ms De-Energize: 27 ms
Cavity	C-8-3
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,29 kg (0.64 lbs)
Seal kit	02-160755 (Buna-N), 02-160756 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

Pressure Drop Curve

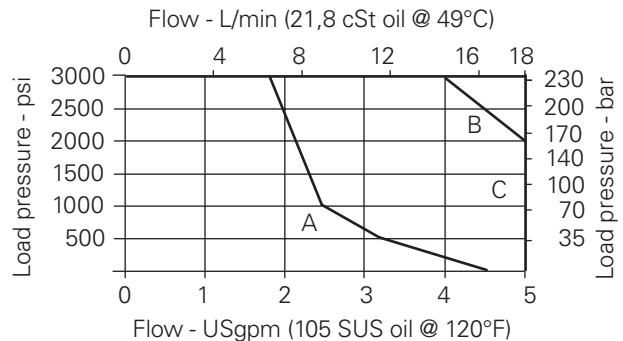
Cartridge only

Port 2 to port 1
and port 2 to port 3

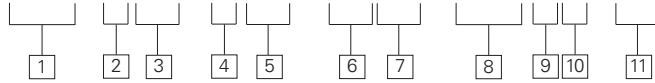


Operating Limits

- A** - Normally open port 1 to port 2
- B** - Normally closed port 3 to port 1
- C** - Selector 2 to 1 and 2 to 3



SV4 – 8 (V) – 3 (M) – (A) ** – *** S – 00**



- 1 Function**
SV4 - Solenoid valve

- 2 Size**
8 - 8 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
3 - 3-way, 2 position

- 5 Manual override option**

Blank - No manual override
M - Push type
For valve dimensions with manual override option installed see page A-152.

- 6 Valve housing material**
Omit for cartridge only
A - Aluminum

 - 7 Port Size**
- | CODE | PORT SIZE | HOUSING NUMBER |
|-----------|----------------|----------------|
| 0 | Cartridge only | |
| 2G | 1/4" BSPP | 02-160739 |
| 3G | 3/8" BSPP | 02-160740 |
| 4T | SAE 4 | 02-160741 |
| 6T | SAE 6 | 02-160742 |
- See section J for housings.

- 8 Voltage rating**
- | | |
|---------------------|-----------------------------|
| 00 - No coil | 24A - 24VAC |
| 12D - 12VDC | 115A - 115VAC |
| 24D - 24VDC | 230A - 230VAC |
| 36D - 36VDC | 12B - 12VDC/w diode* |
| | 24B - 24VDC/w diode* |
- *Optional arc suppression diode.

- 9 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

- 10 Coil series**
S - 8 series, 20 W
For coil dimensions see Section C.

- 11 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")

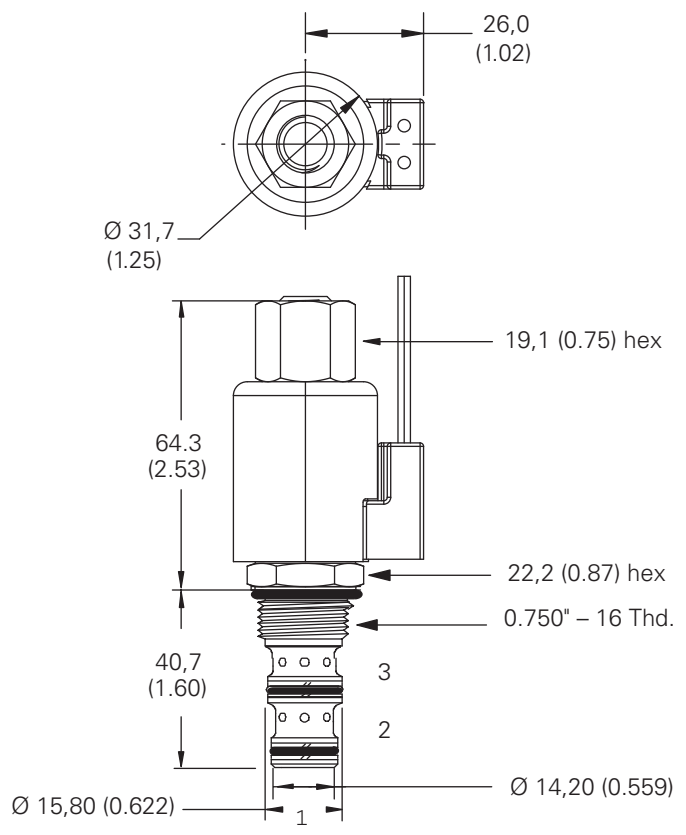
Dimensions

mm (inch)

Torque cartridge in aluminum or steel housing 34-41 Nm (25-30 ft. lbs)

Note
When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV1-10-3/3M/3R

3-way, 2-position, spool type solenoid valve

Description

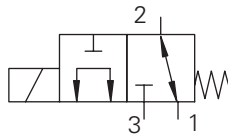
The SV1-10-3 is a 3-way, 2-position, direct acting, spool type screw-in cartridge solenoid valve.

Operation

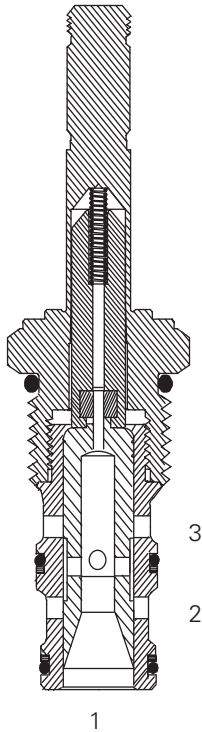
In the de-energized position, this valve allows flow from port 2 to port 1 while port 3 is blocked.

In the energized position, flow is allowed from port 1 to port 3 while port 2 is blocked.

Functional Symbol



Sectional View



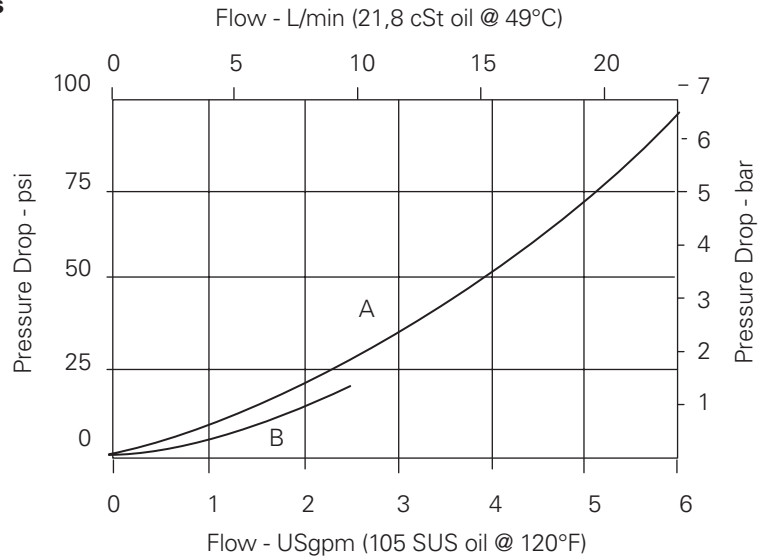
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	23 L/min (6 USgpm) Max. flow port 1 to 2 – 10 L/min (2.5 USgpm)
Internal leakage	164 cm ³ /min (10 in ³ /min) max. @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-3
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,42 kg (0.93 lbs)
Seal kit	889624 (Buna-N), 889688 (Viton®) Viton is a registered trademark of E.I. DuPont

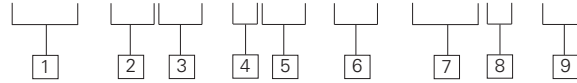
Pressure Drop Curves

Cartridge only



- A** - Port 3 to port 1 energized
- B** - Port 1 to port 2 de-energized

SV1 – 10 (V) – 3 (*) – ** – *** – 00**



- 1 Function**
SV1 - Solenoid valve

- 2 Size**
10 - 10 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
3 - 3-way, 2 position

- 5 Manual override option**
Blank - No manual override
M - Knob type
R - Cable type
For valve dimensions with manual override option installed see page A-153.

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
3B	3/8" BSPP	02-173358*
6T	SAE6	566162*
2G	1/4" BSPP	876705
3G	3/8" BSPP	876714
6H	SAE 6	876704
8H	SAE 8	876711

*Light duty housing.
See section J for housings.

- 8 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)
- For coil dimensions see Section C.
- 9 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")

7 Voltage rating

00	No coil	24A - 24VAC
12D	12VDC	115A - 115VAC
24D	24VDC	230A - 230VAC
36D	36VDC	12B - 12VDC/w diode*
		24B - 24VDC/w diode*

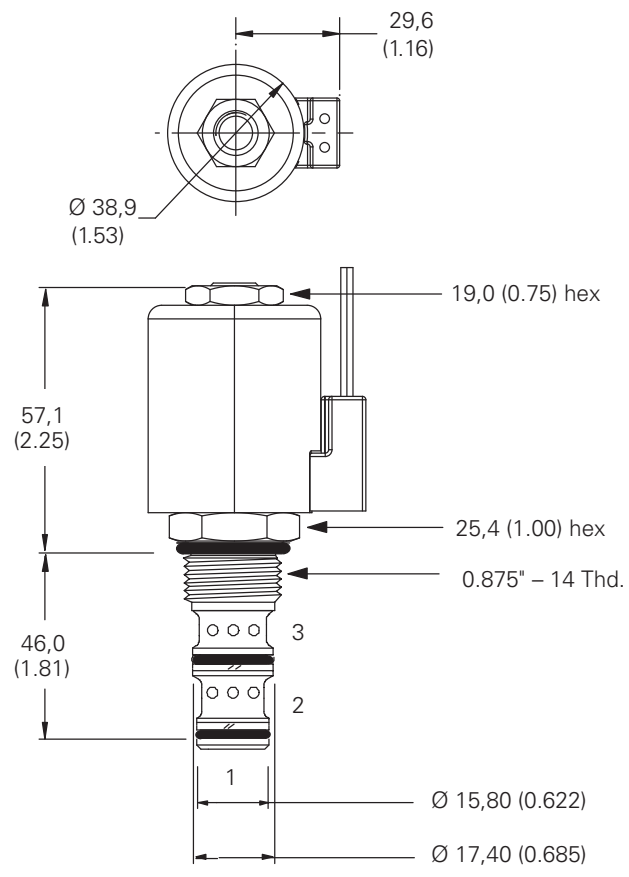
*Optional arc suppression diode.

Note
Use J series, 23 W coils with this solenoid valve.

Dimensions
mm (inch)

Torque cartridge in aluminum housing 47-54 Nm (35-40 ft. lbs)

Note
When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING
Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV11-10-3/3M

3-way, 2-position, spool type solenoid valve,
350 bar

Description

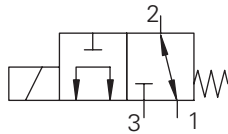
The SV11-10-3 is a 3-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

Operation

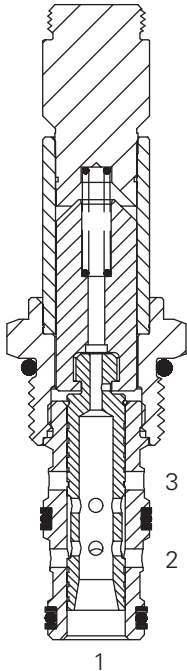
In the de-energized position, this valve allows flow from port 2 to port 1 while port 3 is blocked.

In the energized position, flow is allowed from port 1 to port 3 while port 2 is blocked.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

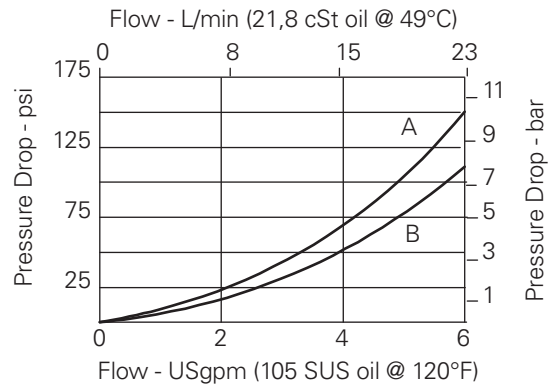
Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	23 L/min (6 USgpm)
Internal leakage, port 2 to port 1	164 cm ³ /min. (10 in ³ /min.) max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-3
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,19 kg (0.42 lbs)
Seal kit	889624 (Buna-N), 889688 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

Pressure Drop Curves

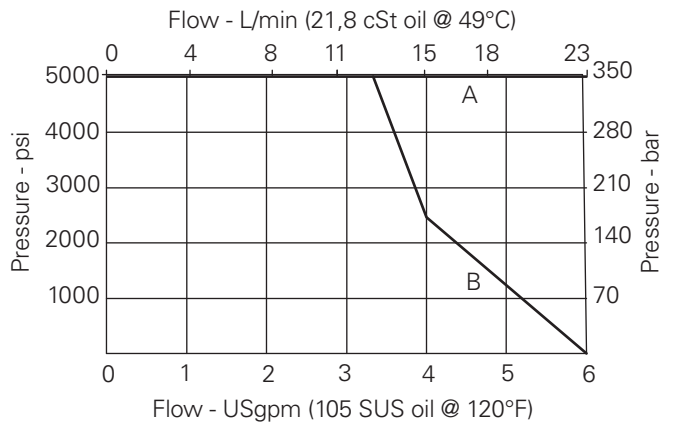
Cartridge only

- A** - Port 3 to port 1
- B** - Port 1 to port 2

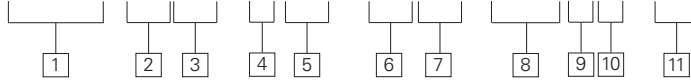


Operating Limits

- A** - Normally open, normally closed - selector 1 to 2
- B** - Selector 1 to 2



SV11 – 10 (V) – 3 (M) – (S) ** – *** * H – 00**



1 Function
SV11 - Solenoid valve

2 Size
10 - 10 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
3 - 3-way, 2 position

5 Manual override option
Blank - No manual override
M - Manual override

For valve dimensions with manual override option installed see page A-153.

6 Valve housing material
Blank - Cartridge only
S - Steel

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-175127
3G	3/8" BSPP	02-175128
6T	SAE 6	02-175124
8T	SAE 8	02-175125

See section J for housings.

8 Voltage rating

00 - No coil
12D - 12VDC
24D - 24VDC
36D - 36VDC

24A - 24VAC
115A - 115VAC
230A - 230VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
 *Optional arc suppression diode.

9 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

10 Coil series
H - 10 series, 29 W
 For coil dimensions see Section C..

11 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

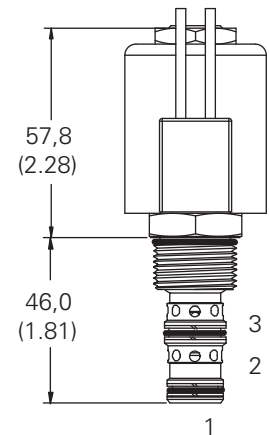
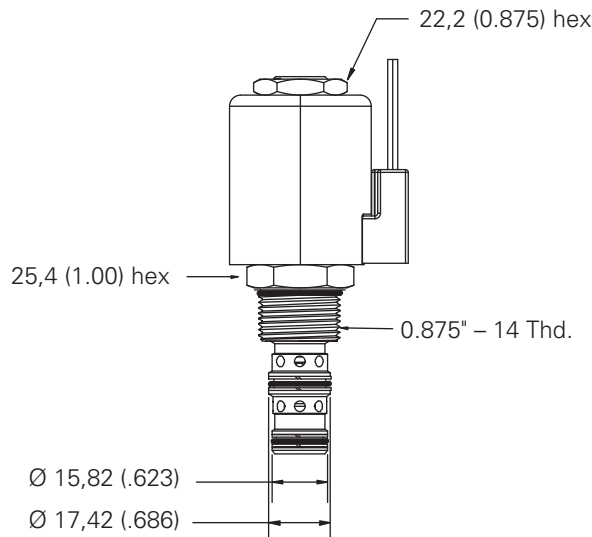
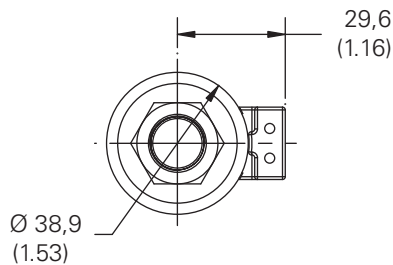
Dimensions

mm (inch)

Torque cartridge in steel housing 68-75 Nm (50-55 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV4-10-3/3P/3S

3-way, 2-position, spool type solenoid valve

Description

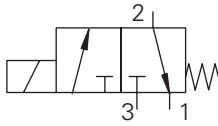
The SV4-10-3 is a 3-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

Operation

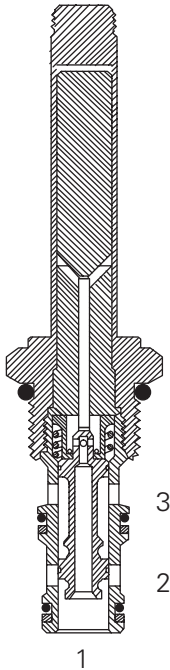
In the de-energized position, this valve allows flow from port 2 to port 1 while port 3 is blocked.

In the energized position, flow is allowed from port 2 to port 3 while port 1 is blocked.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure 210 bar (3000 psi)*

* Flow from P1 to P2 must be less than 7,6 L/min (2 USgpm)

Cartridge fatigue pressure (infinite life) 210 bar (3000 psi)

Rated flow 23 L/min (6 USgpm)
Max. flow port 1 to port 2 - 10 L/min (2.5 USgpm)

Internal leakage 164 cm³/min (10 in³/min) max. @ 210 bar (3000 psi)

Temperature range -40° to 120°C (-40° to 248°F)

Coil duty Continuous from 85% to 110% of nominal voltage

Cavity C-10-3

Fluids All general purpose hydraulic fluids such as:
MIL-H-5606, SAE 10, SAE 20 etc.

Filtration Cleanliness code 18/16/13

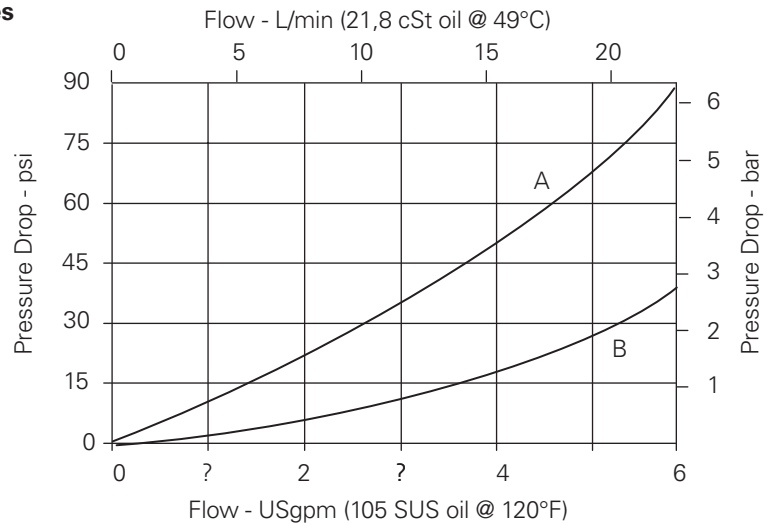
Housing material (standard) Aluminum

Weight including coil 0,42 kg (0.93 lbs)

Seal kit 889624 (Buna-N), 889688 (Viton®)
Viton is a registered trademark of E.I. DuPont

Pressure Drop Curves

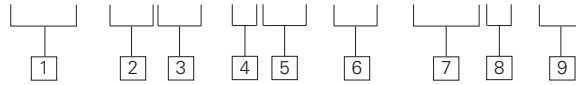
Cartridge only



A - Port 3 to port 2 energized

B - Port 2 to port 1 de-energized

SV4 – 10 (V) – 3 (*) – ** – *** – 00**



1 Function
SV4 - Solenoid valve

2 Size
10 - 10 size

3 Seal material
Blank - Buna-N
V - Viton®

4 Style
3 - 3-way, 2 position

5 Manual override option
Blank - No manual override
M - Manual override
P - Push type
S - Screw type
 For valve dimensions with manual override option installed see page A-153.

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
3B	3/8" BSPP	02-173358*
6T	SAE6	566162*
2G	1/4" BSPP	876705
3G	3/8" BSPP	876714
6H	SAE 6	876704
8H	SAE 8	876711

*Light duty housing.
 See section J or housings.

7 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

8 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)
 For coil dimensions see Section C.

9 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")

Note
 Use J series, 23 W coils with this solenoid valve.

Dimensions

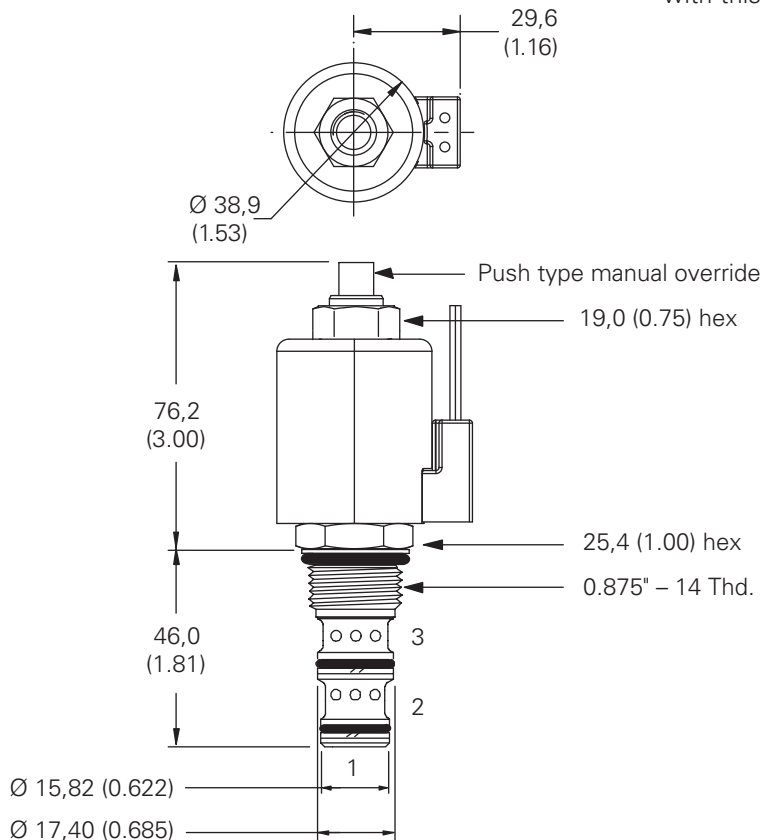
mm (inch)

Torque cartridge in aluminum housing 47-54 Nm (35-40 ft. lbs)

Note
 When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
 Flow from port 1 to port 2 must be less than 7,6 L/min (2 USgpm).

WARNING
 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV1A/B-12-3

3-way, 2-position, spool type solenoid valve

Description

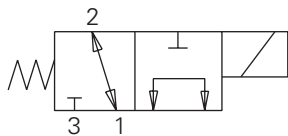
The SV1A/B-12-3 is a 3-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

Operation

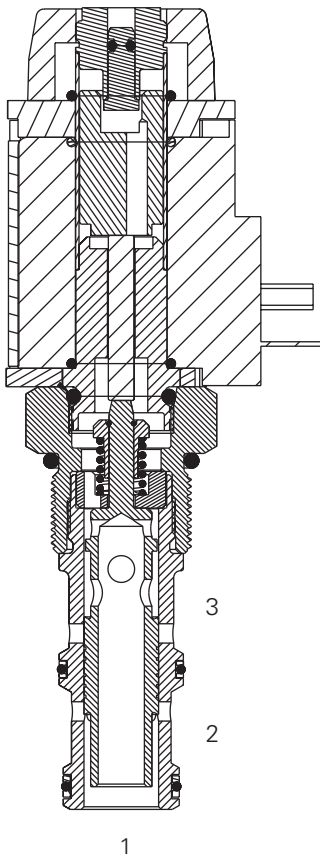
In the de-energized position, this valve allows flow from port 1 to port 2 while port 3 is blocked.

In the energized position, flow is allowed from port 3 to port 1 while port 2 is blocked.

Functional Symbol



Sectional View



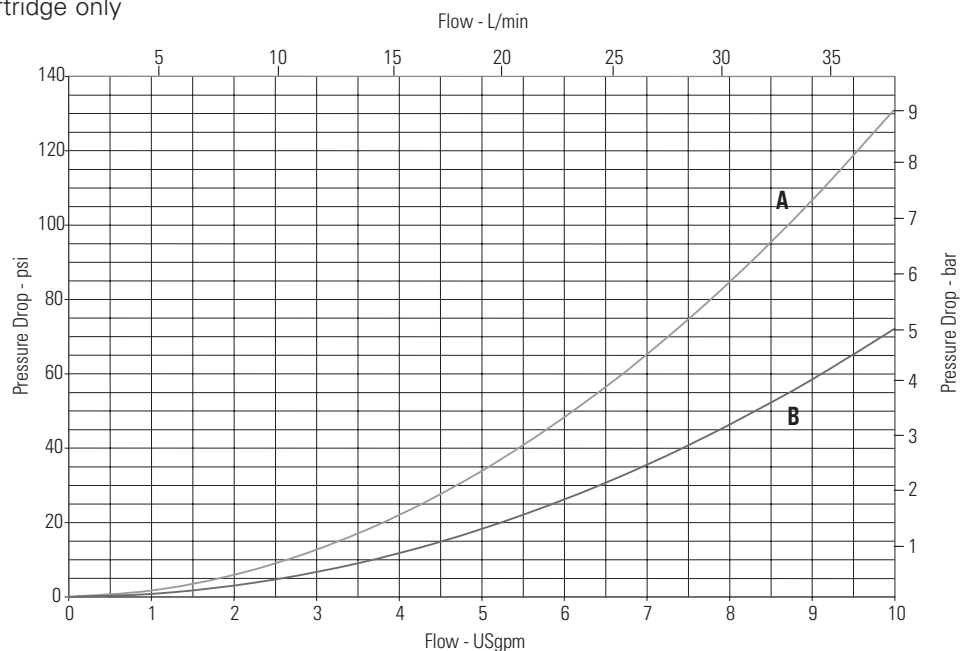
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure	210 bar (3000 psi)	
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)	
Rated flow	SV1A-12-3	38 L/min (10 USgpm)
		Max. flow port 1 to port 2 - 27 L/min (7 USgpm)
	SV1B-12-3	42 L/min (11 USgpm)
		Max. flow port 1 to port 2 - 34 L/min (9 USgpm)
Internal leakage	300 cm ³ /min (21.5 in ³ /min) max. @ 210 bar (3000 psi)	
Temperature range	-40° to 120°C (-40° to 248°F)	
Coil duty	Continuous from 85% to 110% of nominal voltage	
Cavity	C-12-3	
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.	
Filtration	Cleanliness code 18/16/13	
Housing material (standard)	Aluminum	
Weight including coil	SV1A-12-3	0,68 kg (1.5 lbs)
	SV1B-12-3	0,86 kg (1.9 lbs)
Seal kit	9900171-000 (Buna-N), 9900172-000 (Viton®) Viton is a registered trademark of E.I. DuPont	

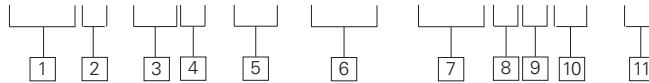
Pressure Drop Curves

Cartridge only



- A** - Port 3 to port 1 energized
- B** - Port 1 to port 2 de-energized

SV1 * - 12 * - 3P - ** - **** * * * * - ****



- 1 Function**
SV1 - Solenoid valve

- 2 Max Flow**
A - 38 L/min (10 USgpm)
B - 42 L/min (11 USgpm)

- 3 Size**
12 - 12 size

- 4 Seal Material**
Blank - Buna-N
V - Viton®

- 5 Style**
3P - 3 way, push type manual override

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
A6G	3/4" BSPP	02-161816
A12H	SAE 12	02-160646

- 9 Coil types**
Blank - No coil
L - L series (30W EN 490) used for SV1A-12
R - R series (30W) used for SV1B-12

- 7 Voltage rating**
00 - No coil
12D - 12VDC
24D - 24VDC
24A - 24VAC
110A - 110VAC
115A - 115VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
*Optional arc suppression diode.
- 8 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
W - Leadwire
N - Deutsch (DC only)
For coil dimensions see Section C.

- 10 Coil special features**
Blank - No coil
00 - No special feature

- 11 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")
SF - Soft shift

Dimensions

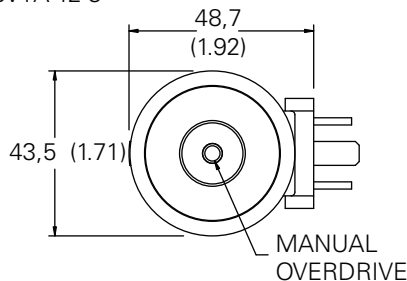
mm (inch)

Torque cartridge in aluminum housing 81-95 Nm (60-70ft. lbs)

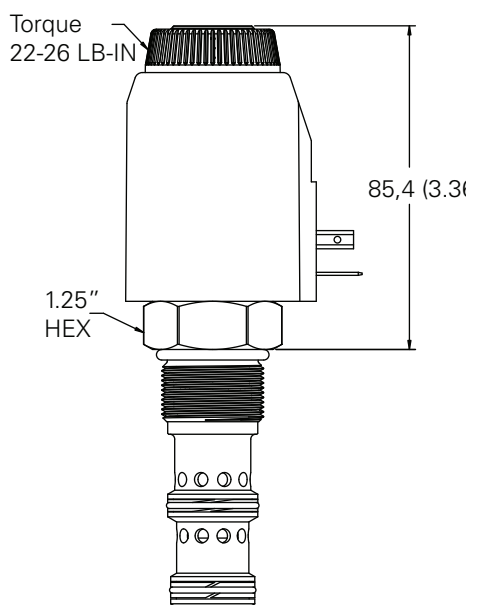
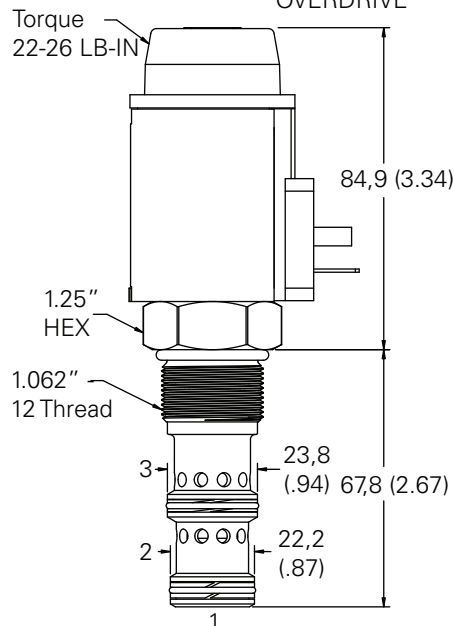
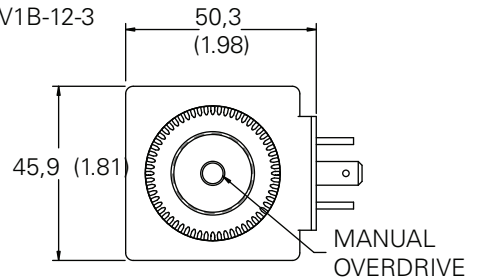
Note

When solenoid valve is ordered as cartridge only, coil nut is included.

SV1A-12-3



SV1B-12-3



WARNING

Maintain 2.5-3 Nm (1.8-2.2 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV2A/B-12-3

3-way, 2-position, spool type solenoid valve

Description

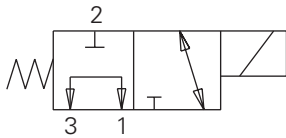
The SV2A/B-12-3 is a 3-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

Operation

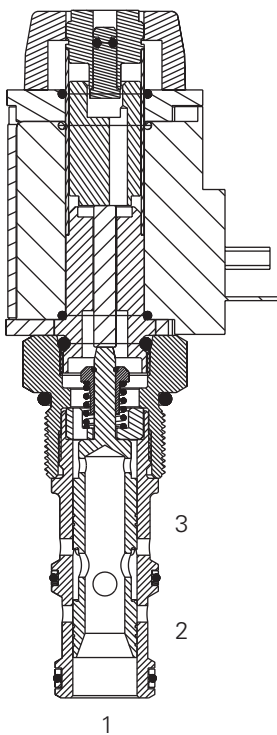
In the de-energized position, this valve allows flow from port 1 to port 3 while port 2 is blocked.

In the energized position, flow is allowed from port 2 to port 1 while port 3 is blocked.

Functional Symbol



Sectional View

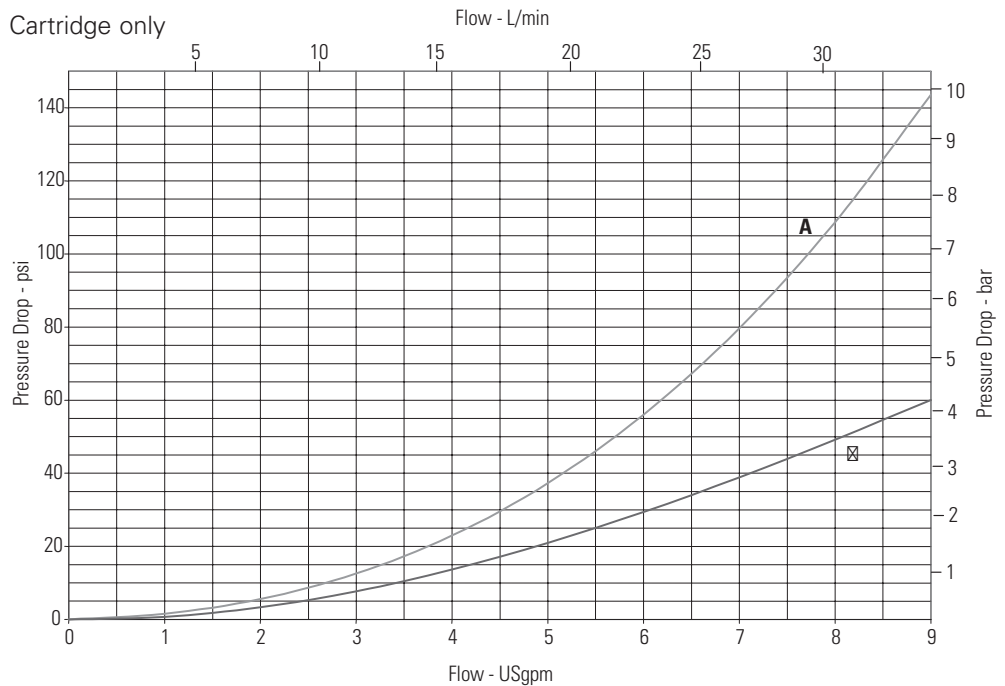


RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

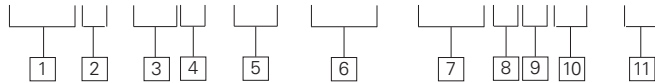
Typical application pressure		210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)		210 bar (3000 psi)
Rated flow	SV2A-12-3	30 L/min (8 USgpm)
		Max. flow port 1 to port 3 - 27 L/min (7 USgpm)
	SV2B-12-3	38 L/min (10 USgpm)
		Max. flow port 1 to port 3 - 34 L/min (9 USgpm)
Internal leakage		300 cm ³ /min (21.5 in ³ /min) max. @ 210 bar (3000 psi)
Temperature range		-40° to 120°C (-40° to 248°F)
Coil duty		Continuous from 85% to 110% of nominal voltage
Cavity		C-12-3
Fluids		All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration		Cleanliness code 18/16/13
Housing material (standard)		Aluminum
Weight including coil	SV2A-12-3	0,68 kg (1.5 lbs)
	SV2B-12-3	0,86 kg (1.9 lbs)
Seal kit		9900171-000 (Buna-N), 9900172-000 (Viton®) Viton is a registered trademark of E.I. DuPont

Pressure Drop Curves



A - Port 2 to port 1 energized
B - Port 1 to port 3 de-energized

SV2 * - 12 * - 3P - ** - **** * * * * - ****



1 Function
SV2 - Solenoid valve

2 Max Flow
A - 30 L/min (8 USgpm)
B - 38 L/min (10 USgpm)

3 Size
12 - 12 size

4 Seal Material
Blank - Buna-N
V - Viton®

5 Style
3P - 3 way, push type manual override

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
A6G	3/4" BSPP	02-161816
A12H	SAE 12	02-160646

7 Voltage rating
00 - No coil
12D - 12VDC
24D - 24VDC
24A - 24VAC
110A - 110VAC
115A - 115VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
 *Optional arc suppression diode.

8 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
W - Leadwire
N - Deutsch (DC only)
 For coil dimensions see Section C.

9 Coil types
Blank - No coil
L - L series (30W EN 490) used for SV2A-12
R - R series (30W) used for SV2B-12

10 Coil special features
Blank - No coil
00 - No special feature

11 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")
SF - Soft shift

Dimensions

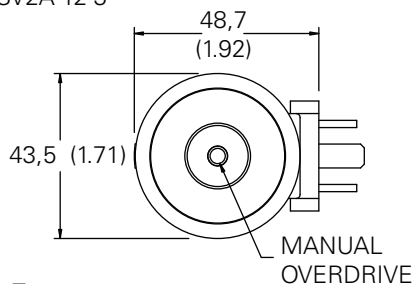
mm (inch)

Torque cartridge in aluminum housing 81-95 Nm (60-70ft. lbs)

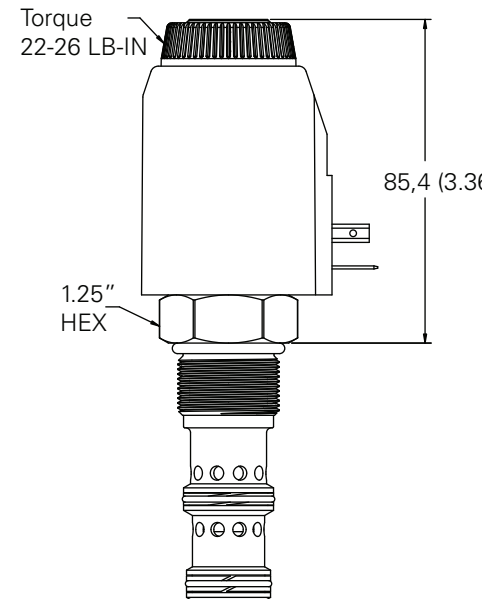
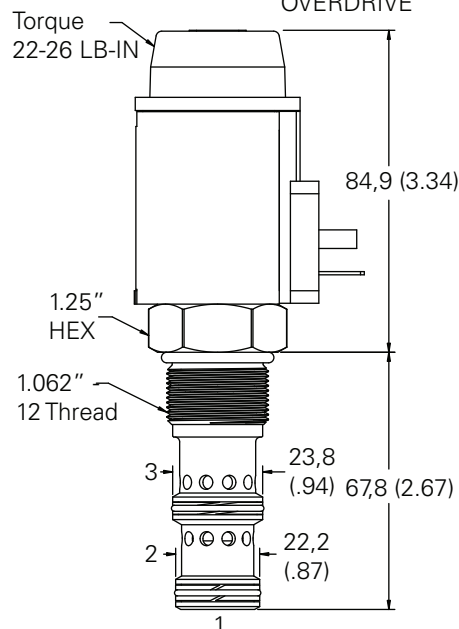
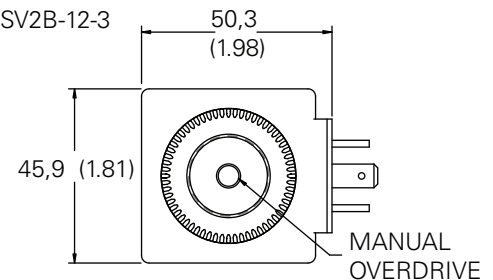
Note

When solenoid valve is ordered as cartridge only, coil nut is included.

SV2A-12-3



SV2B-12-3



WARNING

Maintain 2.5-3 Nm (1.8-2.2 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV4A/B-12-3

3-way, 2-position, spool type solenoid valve

Description

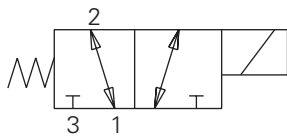
The SV4A/B-12-3 is a 3-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

Operation

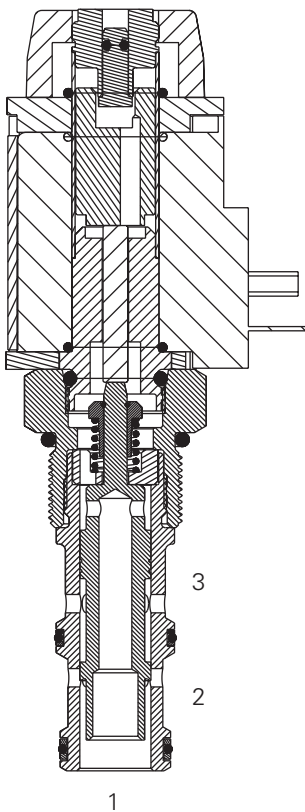
In the de-energized position, this valve allows flow from port 2 to port 1 while port 3 is blocked.

In the energized position, flow is allowed from port 3 to port 2 while port 1 is blocked.

Functional Symbol



Sectional View



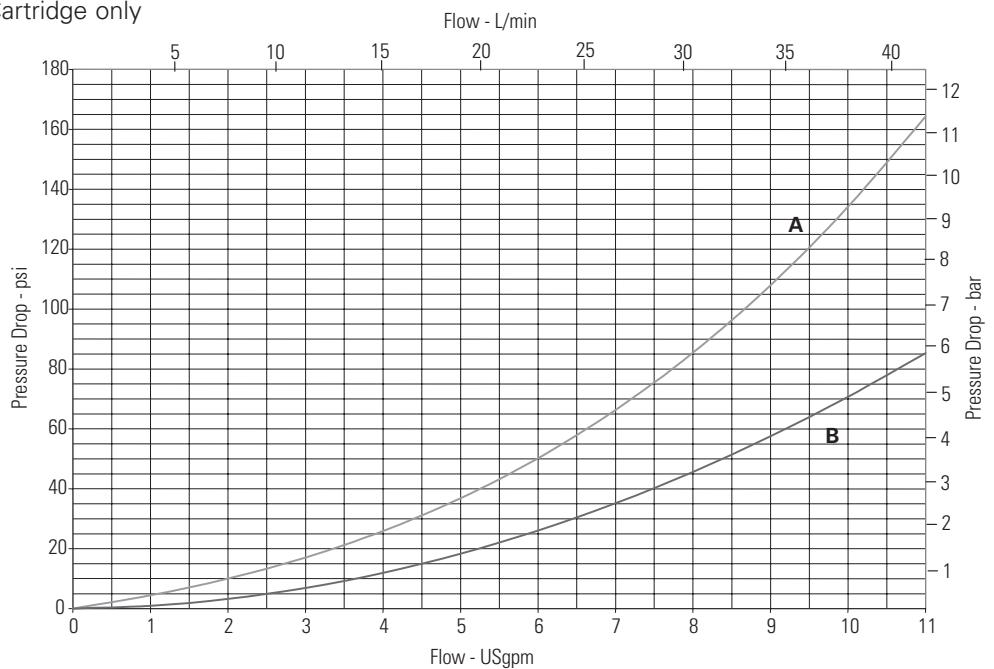
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure	210 bar (3000 psi)	
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)	
Rated flow	SV4A-12-3 SV4B-12-3	34 L/min (9 USgpm) 42 L/min (11 USgpm)
Internal leakage	300 cm ³ /min (21.5 in ³ /min) max. @ 210 bar (3000 psi)	
Temperature range	-40° to 120°C (-40° to 248°F)	
Coil duty	Continuous from 85% to 110% of nominal voltage	
Cavity	C-12-3	
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.	
Filtration	Cleanliness code 18/16/13	
Housing material (standard)	Aluminum	
Weight including coil	SV4A-12-3	0,68 kg (1.5 lbs)
	SV4B-12-3	0,86 kg (1.9 lbs)
Seal kit	9900171-000 (Buna-N), 9900172-000 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>	

Pressure Drop Curves

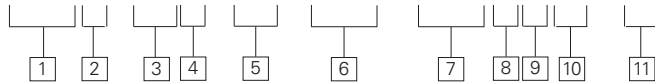
Cartridge only



A - Port 3 to port 2 energized

B - Port 2 to port 1 de-energized

SV4 * - 12 * - 3P - ** - **** * * * * - ****



1 Function
SV4 - Solenoid valve

2 Max Flow
A - 34 L/min (9 USgpm)
B - 42 L/min (11 USgpm)

3 Size
12 - 12 size

4 Seal Material
Blank - Buna-N
V - Viton®

5 Style
3P - 3 way, push type manual override

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
A6G	3/4" BSPP	02-161816
A12H	SAE 12	02-160646

7 Voltage rating
00 - No coil
12D - 12VDC
24D - 24VDC
24A - 24VAC
110A - 110VAC
115A - 115VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
 *Optional arc suppression diode.

8 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
W - Leadwire
N - Deutsch (DC only)
 For coil dimensions see Section C.

9 Coil types
Blank - No coil
L - L series (30W EN 490) used for SV4A-12
R - R series (30W) used for SV4B-12

10 Coil special features
Blank - No coil
00 - No special feature

11 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")
SF - Soft shift

Dimensions

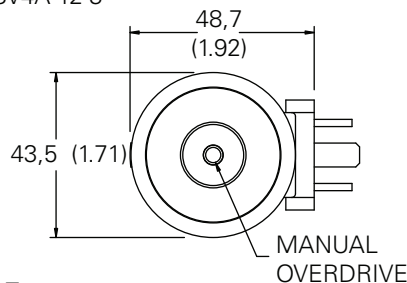
mm (inch)

Torque cartridge in aluminum housing 81-95 Nm (60-70ft. lbs)

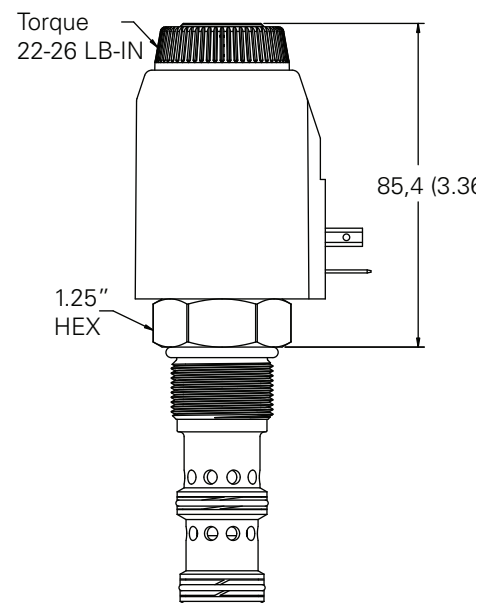
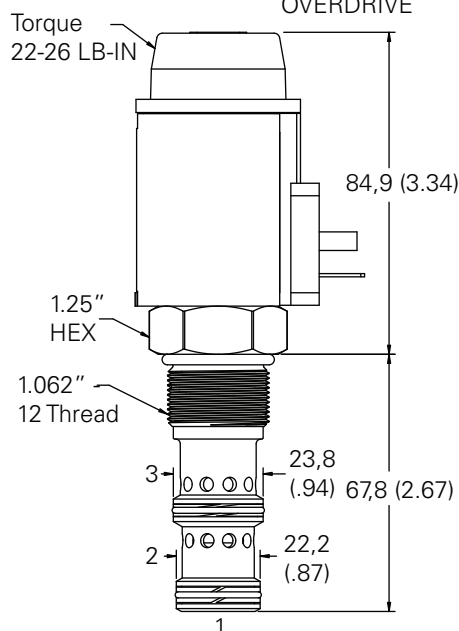
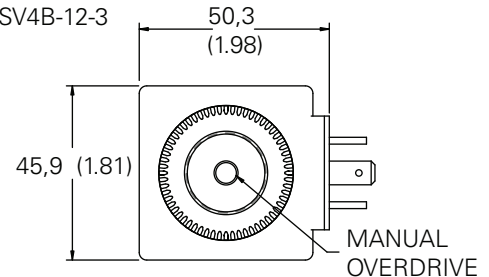
Note

When solenoid valve is ordered as cartridge only, coil nut is included.

SV4A-12-3



SV4B-12-3



WARNING

Maintain 2.5-3 Nm (1.8-2.2 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV1-8-4/4M

4-way, 2-position, spool type

Description

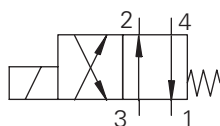
The SV1-8-4 is a 4-way, 2-position, direct acting, spool type solenoid valve.

Operation

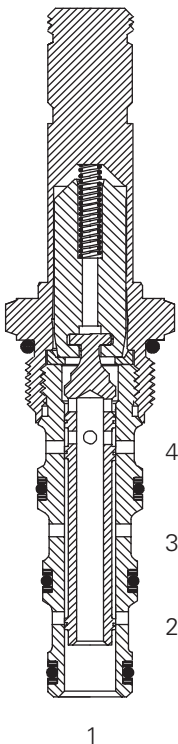
In the de-energized position, the SV1-8-4 allows flow from port 4 to port 1, and from port 3 to port 2.

In the energized position, flow is allowed from port 3 to port 4, and from port 2 to port 1.

Functional Symbol



Sectional View



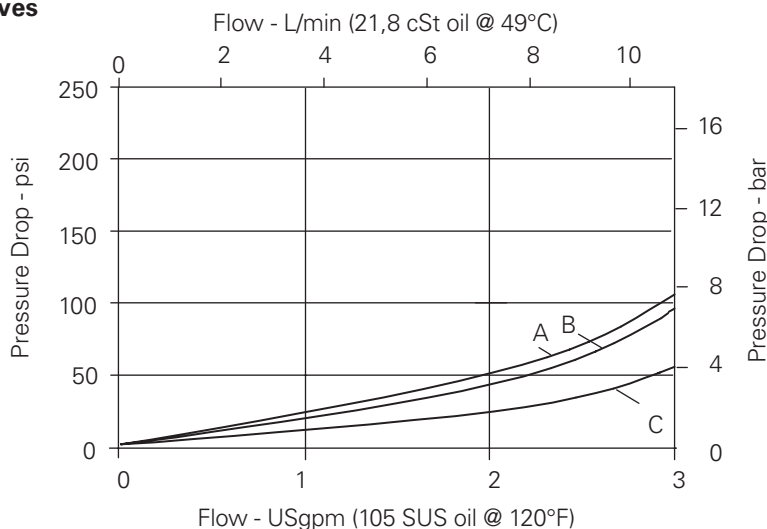
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	11 L/min (3 USgpm)
Internal leakage (per land)	82 cm ³ /min (5 in ³ /min) max. @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-8-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,31 kg (0.69 lbs)
Seal kit	02-160757 (Buna-N), 02-160758 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

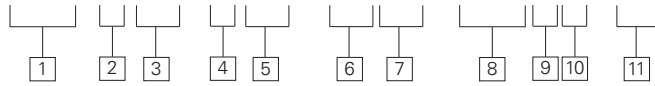
Pressure Drop Curves

Cartridge only



- A** - Port 3 to port 4 or port 3 to port 2
- B** - Port 4 to port 1
- C** - Port 2 to port 1

SV1 – 8 (V) – 4 (M) – (A) ** – *** * S – 00**



- 1 Function**
SV1 - Solenoid valve

- 2 Size**
8 - 8 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
4 - 4-way, 2 position

- 5 Manual override option**
Blank - No manual override
M - Manual override
For valve dimensions with manual override option installed see page A-153.

6 Valve housing material
Omit for cartridge only
A - Aluminum

7 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-160747
3G	3/8" BSPP	02-160748
4T	SAE 4	02-160749
6T	SAE 6	02-160750

See section J for housings.

8 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

- 9 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

10 Coil series
S - 8 series, 20 W
For coil dimensions see Section C.

11 00 - None
(Only required if valve has special features, omitted if "00.")

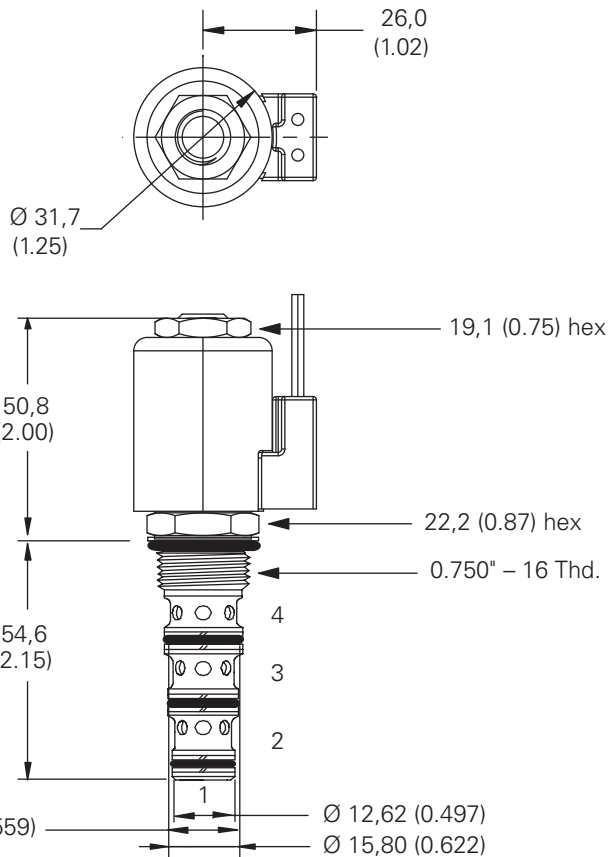
Dimensions

mm (inch)

Torque cartridge in steel or aluminum housing
34-41 Nm (25-30 ft. lbs)

Note

When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV11-8-4/4M

4-way, 2-position spool type solenoid valve, 350 bar

Description

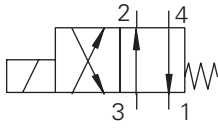
The SV11-8-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

Operation

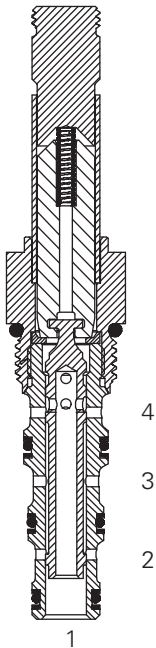
In the de-energized position, this valve allows flow from port 3 to port 2 and from port 4 to port 1.

In the energized position, flow is allowed from port 3 to port 4 and from port 2 to port 1.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

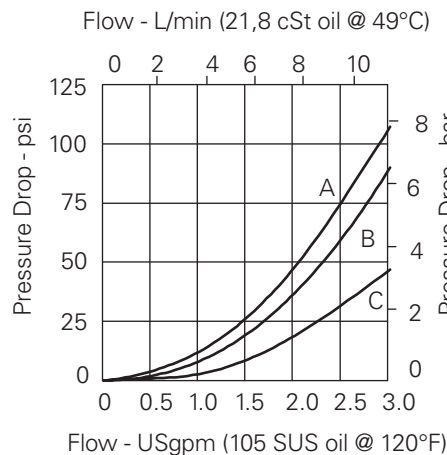
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	11 L/min (3 USgpm)
Internal leakage (per land)	82 cm ³ /min. (5 in ³ /min.) max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-8-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,14 kg (0.30 lbs)
Seal kit	02-160757 (Buna-N), 02-160758 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

Performance Characteristics

Cartridge only

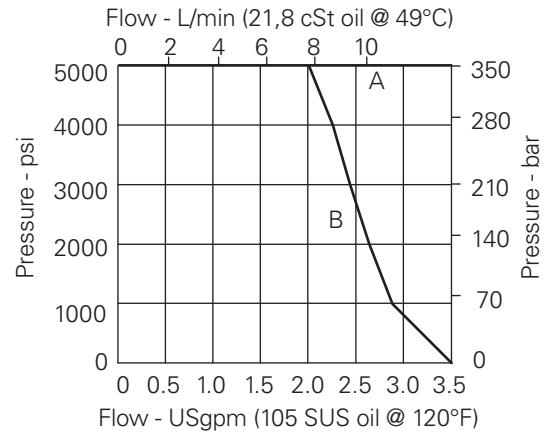
Pressure drop vs. flow

- A** - Port 3 to 4 and 3 to 2
- B** - Port 4 to 1
- C** - Port 2 to 1

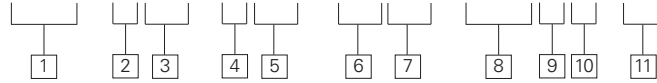


Operating Limits

- A** - Port 2 to 1, 4 to 1, and 3 to 2
- B** - Port 3 to 4



SV11 – 8 (V) – 4 (M) – (S) ** – *** * P – 00**



- 1 Function**
SV11 - Solenoid valve

- 2 Size**
8 - 8 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
4 - 4-way, 2 position

- 5 Manual override option**
Blank - No manual override
M - Manual override
For valve dimensions with manual override option installed see page A-153.

- 6 Valve housing material**
Blank - Cartridge only
S - Steel

- 7 Port Size**

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
2G	1/4" BSPP	02-160751
3G	3/8" BSPP	02-160752
4T	SAE 4	02-160753
6T	SAE 6	02-160754

See section J for housings.

- 8 Voltage rating**

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

- 9 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

- 10 Coil series**
P - 8 series, 23 W
For coil dimensions see Section C.

- 11 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")

Dimensions

mm (inch)

Torque cartridge in aluminum or steel housing
34-41 Nm (25-30 ft. lbs)

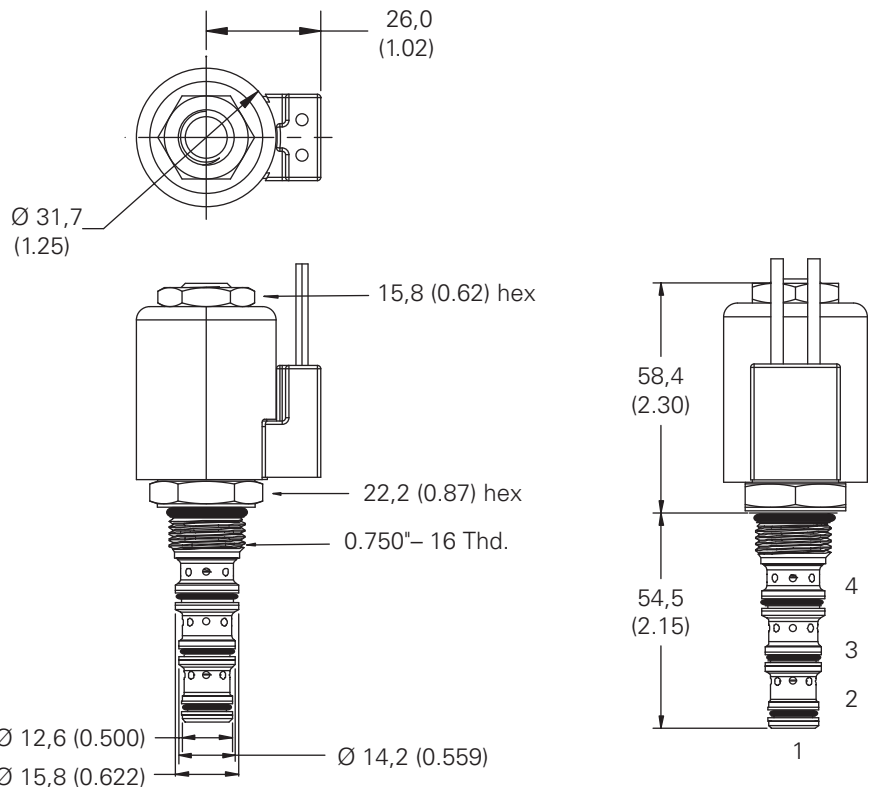
Note

When solenoid valve is ordered as cartridge only, nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV2-8-4/4M

4-way, 2-position spool type solenoid valve

Description

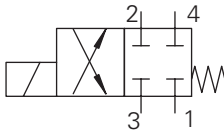
The SV2-8-4 is a four-way, two-position, direct acting, spool-type solenoid valve.

Operation

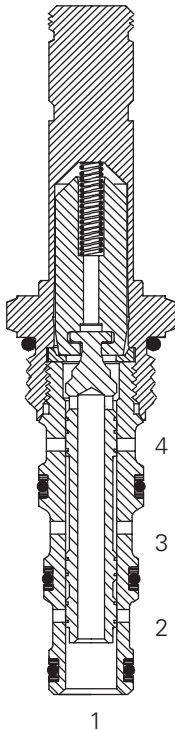
The SV2-8-4 has all ports blocked in the de-energized position.

In the energized position, flow is allowed from port 2 to port 1, and from port 3 to port 4.

Functional Symbol



Sectional View



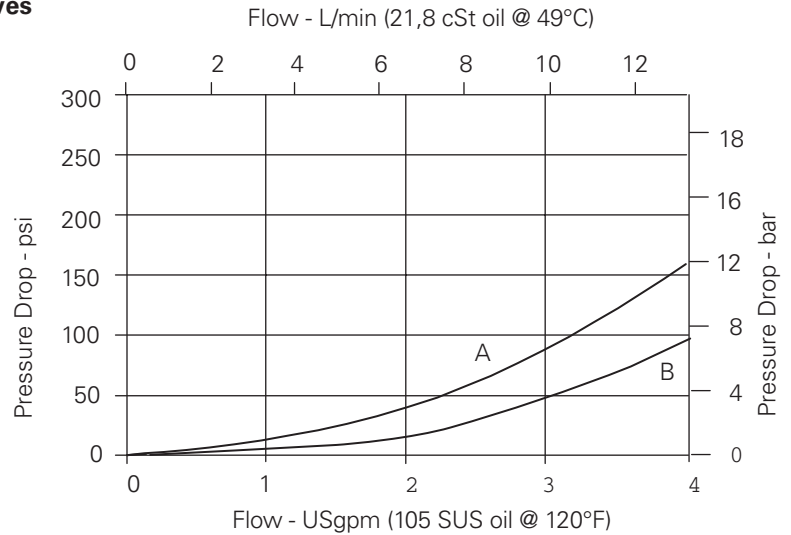
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	13 L/min (4 USgpm)
Internal leakage	82 cm ³ /min (5 in ³ /min) max. @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Response times (100% rated voltage and flow)	Energize: 21 ms De-Energize: 42 ms
Cavity	C-8-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,30 kg (0.66 lbs)
Seal kit	02-160757 (Buna-N), 02-160758 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

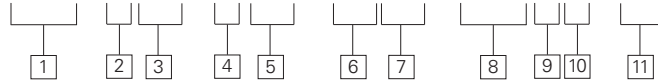
Pressure Drop Curves

Cartridge only



A - Port 3 to port 4
B - Port 2 to port 1

SV2 – 8 (V) – 4 (M) – (A) ** – *** S – 00**



- 1 Function**
SV2 - Solenoid valve

- 2 Size**
8 - 8 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
4 - 4-way, 2 position

- 5 Manual override option**

Blank - No manual override
M - Manual override
For valve dimensions with manual override option installed see page A-153.

- 6 Valve housing material**
Omit for cartridge only
A - Aluminum

 - 7 Port Size**
- | CODE | PORT SIZE | HOUSING NUMBER |
|-----------|----------------|----------------|
| 0 | Cartridge only | |
| 2G | 1/4" BSPP | 02-160747 |
| 3G | 3/8" BSPP | 02-160748 |
| 4T | SAE 4 | 02-160749 |
| 6T | SAE 6 | 02-160750 |
- See section J for housings.

- 8 Voltage rating**
- | | |
|---------------------|-----------------------------|
| 00 - No coil | 24A - 24VAC |
| 12D - 12VDC | 115A - 115VAC |
| 24D - 24VDC | 230A - 230VAC |
| 36D - 36VDC | 12B - 12VDC/w diode* |
| | 24B - 24VDC/w diode* |
- *Optional arc suppression diode.

- 9 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

- 10 Series Coil**
S - 8 series, 20 W
For coil dimensions see Section C.

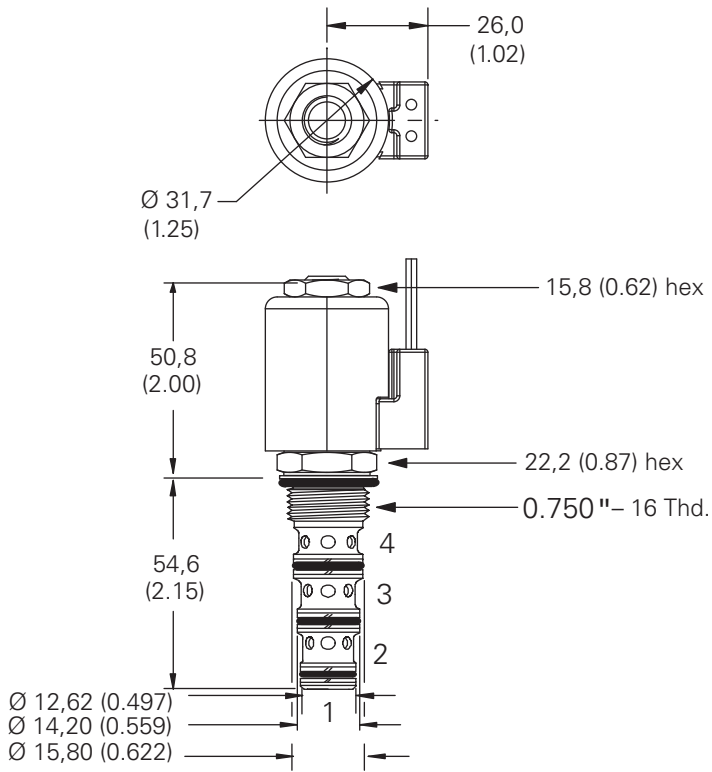
- 11 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")

Dimensions
mm (inch)

Torque cartridge in aluminum or steel housing
34-41 Nm (25-30 ft. lbs)

Note
When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV12-8-4/4M

4-way, 2-position spool type solenoid valve, 350 bar

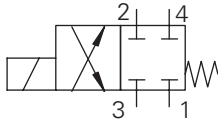
Description

The SV12-8-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

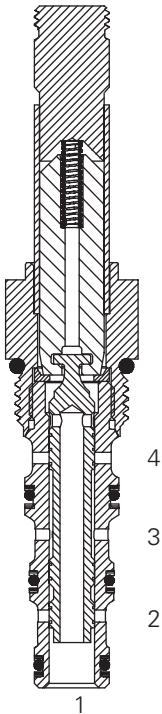
Operation

In the de-energized position all ports are blocked. In the energized position, flow is allowed from port 3 to port 4 and from port 2 to port 1.

Functional Symbol



Sectional View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

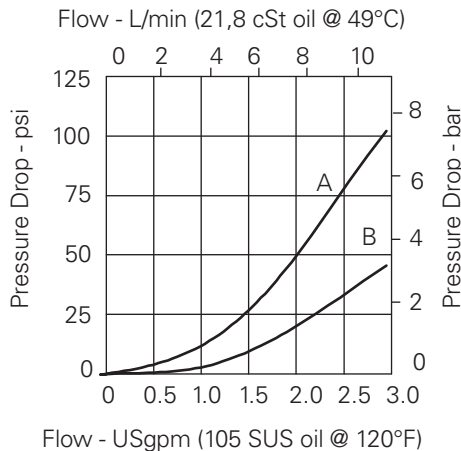
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	13 L/min (3.5 USgpm)
Internal leakage, port 2 to port 1	82 cm ³ /min. (5 in ³ /min.) max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-8-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,14 kg (0.30 lbs)
Seal kit	02-160757 (Buna-N), 02-160758 (Viton®) Viton is a registered trademark of E.I. DuPont

Performance Characteristics

Cartridge only

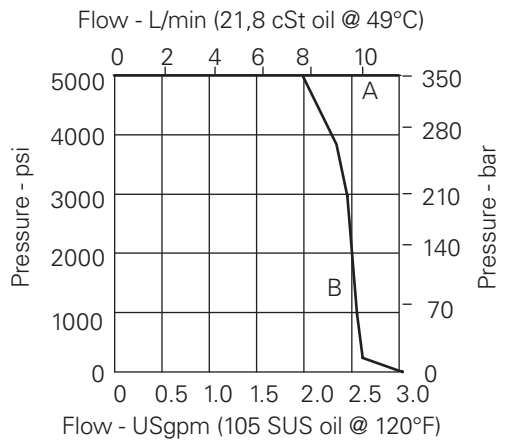
Pressure drop vs. flow

- A - Port 3 to port 4
- B - Port 2 to port 1



Operating Limits

- A - Port 2 to port 1
- B - Port 3 to port 4



SV1-10-4/4M/4R

4-way, 2-position spool type solenoid valve

Description

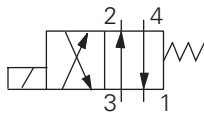
The SV1-10-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

Operation

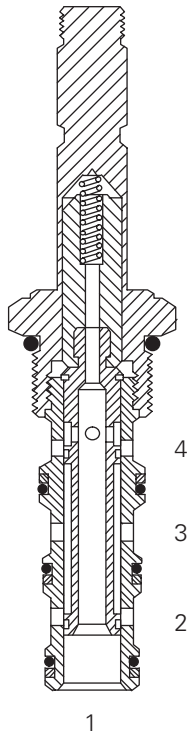
In the de-energized position, this valve allows flow from port 2 to port 3 and from port 4 to port 1.

In the energized position, flow is allowed from port 3 to port 4 and from port 4 to port 1.

Functional Symbol



Sectional View



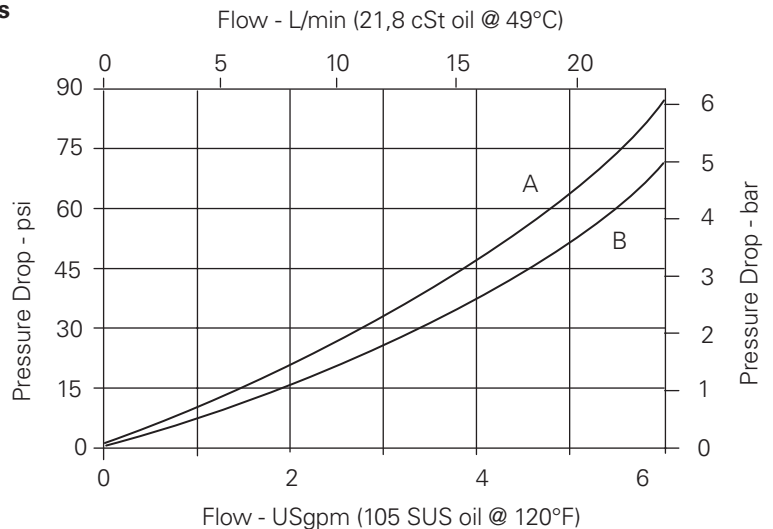
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	23 L/min (6 USgpm)
Internal leakage	164 cm ³ /min (10 in ³ /min) max. @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,44 kg (0.96 lbs)
Seal kit	889625 (Buna-N), 566080 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

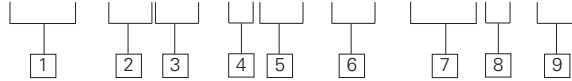
Pressure Drop Curves

Cartridge only



A - Port 4 to port 1
B - Port 3 to port 2

SV1 – 10 (V) – 4 (*) – ** – *** – 00**



- 1 Function**
SV1 - Solenoid valve

- 2 Size**
10 - 10 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
4 - 4-way, 2 position

- 5 Manual override option**
Blank - No manual override
M - Knob type
R - Cable type
For valve dimensions with manual override option installed see page A-153.

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
3B	3/8" BSPP	02-179705*
6T	SAE6	566161*
2G	1/4" BSPP	876709
3G	3/8" BSPP	876715
6H	SAE 6	876708
8H	SAE 8	876713

*Light duty housing.
See section J for housings.

- 8 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)
For coil dimensions see Section C.

7 Voltage rating

00	No coil
12D	12VDC
24D	24VDC
36D	36VDC
24A	24VAC
115A	115VAC
230A	230VAC
12B	12VDC/w diode*
24B	24VDC/w diode*

*Optional arc suppression diode.

- 9 Special features**
00 - None
 (Only required if valve has special features, omitted if "00.")
- Note
 Use J series, 23 W coils with this solenoid valve.

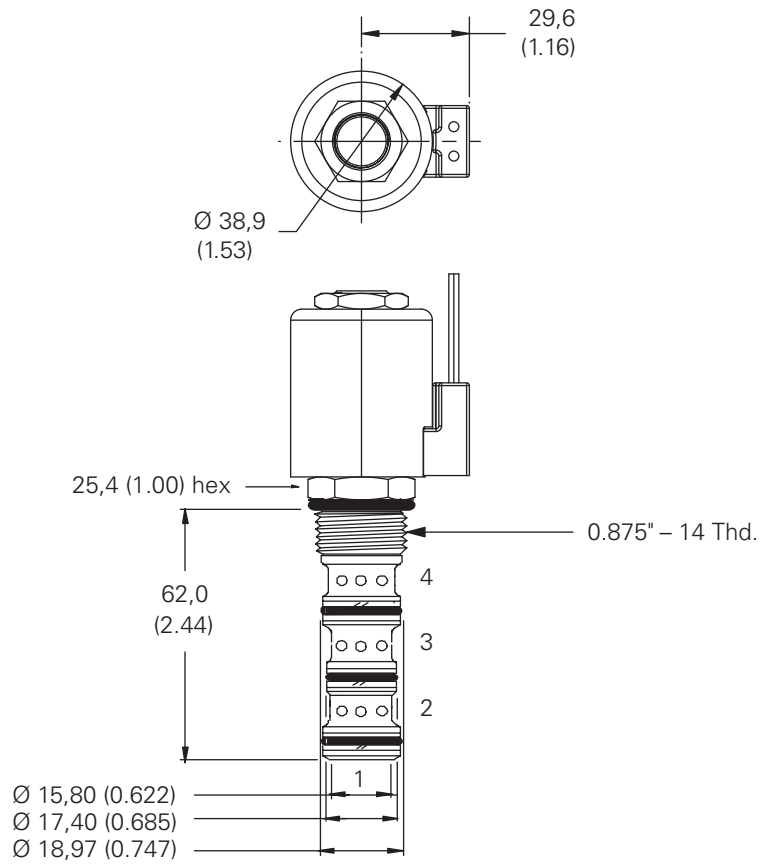
Dimensions
 mm (inch)

Torque cartridge in aluminum housing 47-54 Nm (35-40 ft. lbs)

Note
 When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING

 Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV11-10-4/4M

4-way 2-position spool type solenoid valve, 350 bar

Description

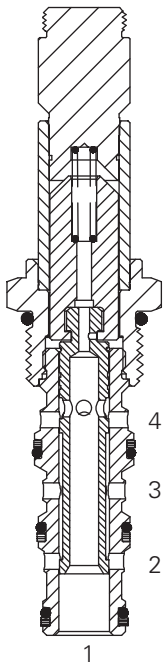
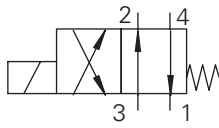
The SV11-10-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

Operation

In the de-energized position, this valve allows flow from port 3 to port 2 and from port 4 to port 1.

In the energized position, flow is allowed from port 3 to port 4 and from port 2 to port 1.

Functional Symbol



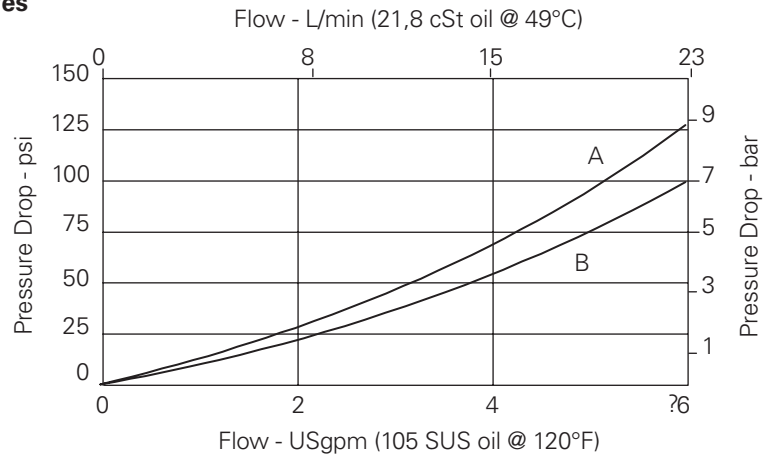
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	23 L/min (6 USgpm)
Internal leakage, port 2 to port 1	82 cm ³ /min. (5 in ³ /min.) max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Steel
Weight cartridge only	0,21 kg (0.46 lbs)
Seal kit	889625 (Buna-N), 566080 (Viton®) <small>Viton is a registered trademark of E.I. DuPont Co</small>

Pressure Drop Curves

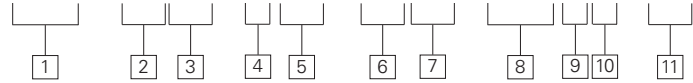
Cartridge only



A - Port 3 to port 2

B - Port 4 to port 1

SV11 – 10 (V) – 4 (M) – (S) ** – *** H – 00**



- 1 Function**
SV11 - Solenoid valve

- 2 Size**
10 - 10 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
4 - 4-way, 2-position

- 5 Manual override option**

Blank - No manual override
M - Manual override
For valve dimensions with manual override option installed see page A-153.

- 6 Valve housing material**
Blank - Omit for cartridge only
S - Steel

 - 7 Port Size**
- | CODE | PORT SIZE | HOUSING NUMBER |
|------|----------------|----------------|
| 0 | Cartridge only | |
| 2G | 1/4" BSPP | 02-175139 |
| 3G | 3/8" BSPP | 02-175140 |
| 6T | SAE 6 | 02-175137 |
| 8T | SAE 8 | 02-175138 |
- See section J for housings.

- 8 Voltage rating**
- | | |
|---------------------|-----------------------------|
| 00 - No coil | 24A - 24VAC |
| 12D - 12VDC | 115A - 115VAC |
| 24D - 24VDC | 230A - 230VAC |
| 36D - 36VDC | 12B - 12VDC/w diode* |
| | 24B - 24VDC/w diode* |
- *Optional arc suppression diode.

- 9 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

- 10 Coil series**
H - 10 series, 29 W
For coil dimensions see Section C.

- 11 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")

Dimensions

mm (inch)

Torque cartridge in steel housing 68-75 Nm (50-55 ft. lbs)

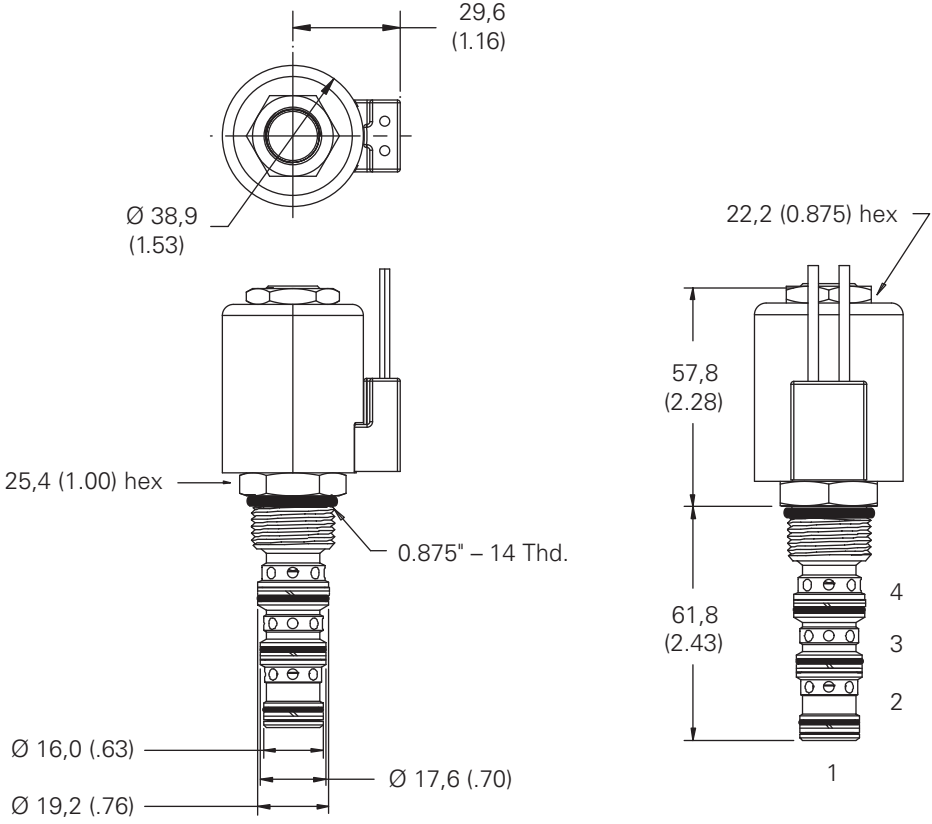
Note

When solenoid valve is ordered as cartridge only, nut is included.



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV2-10-4/4M/4R

4-way, 2-position spool type solenoid valve

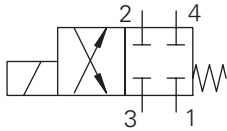
Description

The SV2-10-4 is a 4-way, 2-position, direct acting, spool type screw-in cartridge solenoid valve.

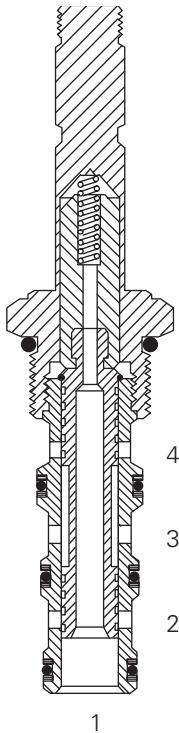
Operation

In the de-energized position, all ports are blocked. In the energized position, port 3 is open to port 4 and port 2 is open to port 1.

Functional Symbol



Sectional View



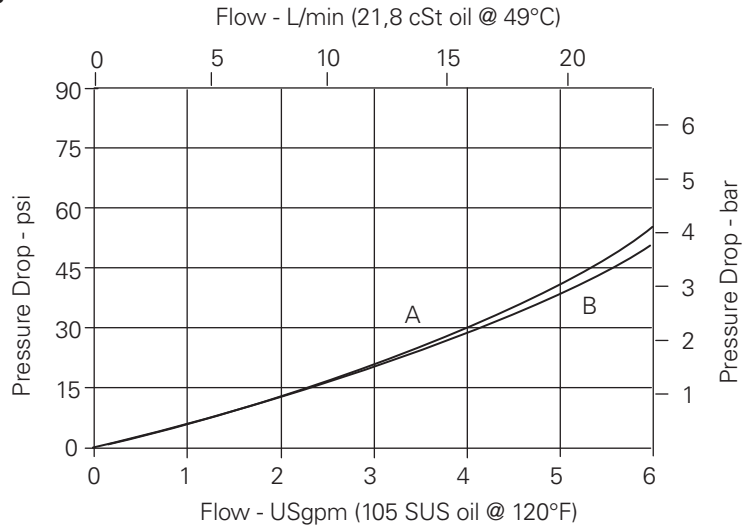
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	23 L/min (6 USgpm)
Internal leakage	164 cm ³ /min (10 in ³ /min) max. @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,44 kg (0.96 lbs)
Seal kit	889625 (Buna-N), 566080 (Viton®) Viton is a registered trademark of E.I. DuPont

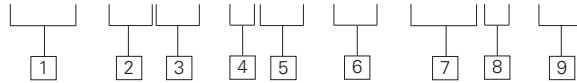
Pressure Drop Curves

Cartridge only



A - Port 3 to port 4
B - Port 1 to port 2

SV2 – 10 (V) – 4 (*) – ** – *** – 00**



- 1 Function**
SV2 - Solenoid valve

- 2 Size**
10 - 10 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
4 - 4-way, 2 position

- 5 Manual override option**
Blank - No manual override
M - Knob type
R - Cable type
For valve dimensions with manual override option installed see page A-153.

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
3B	3/8" BSPP	02-179705*
6T	SAE6	566161*
2G	1/4" BSPP	876709
3G	3/8" BSPP	876715
6H	SAE 6	876708
8H	SAE 8	876713

*Light duty housing.
See section J for housings.

7 Voltage rating

00	No coil	24A - 24VAC
12D	12VDC	115A - 115VAC
24D	24VDC	230A - 230VAC
36D	36VDC	12B - 12VDC/w diode*
		24B - 24VDC/w diode*

*Optional arc suppression diode.

- 8 Connector types**
- Blank - No coil
 - G - ISO 4400 DIN 43650
 - Q - Spade terminals
 - W - Leadwire
 - N - Deutsch (DC only)
 - Y - Amp JR (DC only)
 - D - Metripack 150 male (DC only)
 - J - Metripack 280 male (DC only)
- For coil dimensions see Section C.

- 9 Special features**
- 00 - None
(Only required if valve has special features, omitted if "00.")

Note
Use J series, 23 W coils with this solenoid valve.

Dimensions

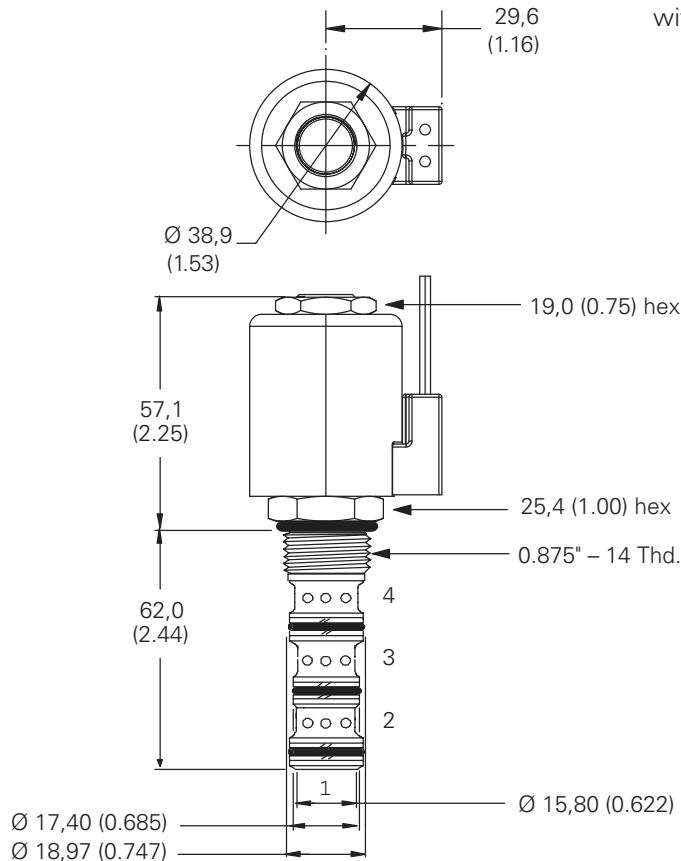
mm (inch)

Torque cartridge in aluminum housing 47-54 Nm (35-40 ft. lbs)

Note
When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING
Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV3-10-4/4M/4R

4-way, 2-position spool type solenoid valve

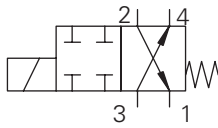
Description

The SV3-10-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

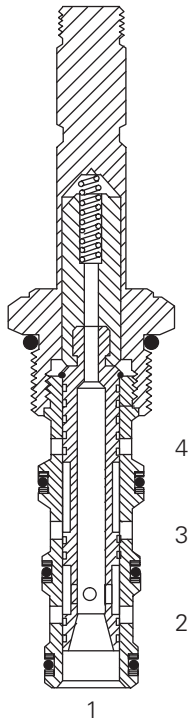
Operation

In the de-energized position, port 3 is open to port 4 and port 2 is open to port 1. In the energized position all ports are blocked.

Functional Symbol



Sectional View



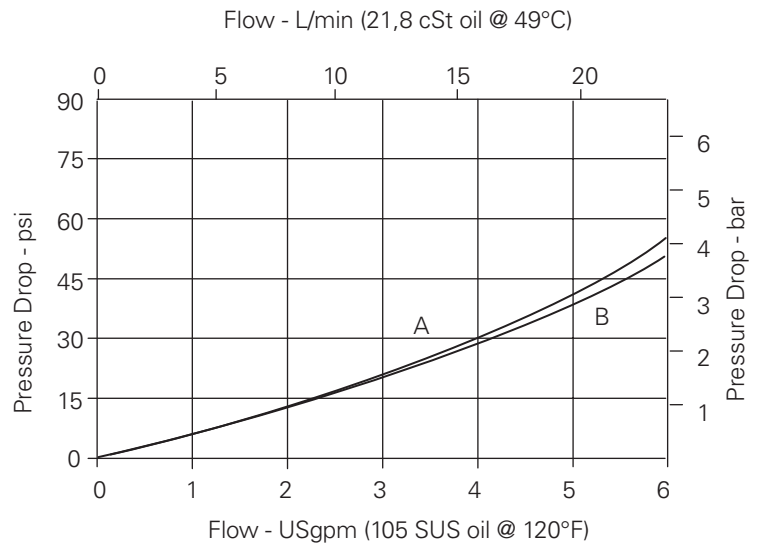
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

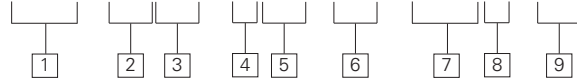
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	23 L/min (6 USgpm)
Internal leakage	164 cm ³ /min (10 in ³ /min) max. @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,44 kg (0.96 lbs)
Seal kit	889625 (Buna-N), 566080 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

Pressure Drop Curves

Cartridge only



SV3 – 10 (V) – 4 (*) – ** – *** – 00**



- 1 Function**
SV3 - Solenoid valve

- 2 Size**
10 - 10 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
4 - 4-way, 2 position

- 5 Manual override option**
Blank - No manual override
M - Knob type
R - Cable type
For valve dimensions with manual override option installed see page A-153.

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
3B	3/8" BSPP	02-179705*
6T	SAE6	566161*
2G	1/4" BSPP	876709
3G	3/8" BSPP	876715
6H	SAE 6	876708
8H	SAE 8	876713

*Light duty housing.
See section J for housings.

- 8 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)
For coil dimensions see Section C.

7 Voltage rating

00	No coil
12D	12VDC
24D	24VDC
36D	36VDC
24A	24VAC
115A	115VAC
230A	230VAC
12B	12VDC/w diode*
24B	24VDC/w diode*

*Optional arc suppression diode.

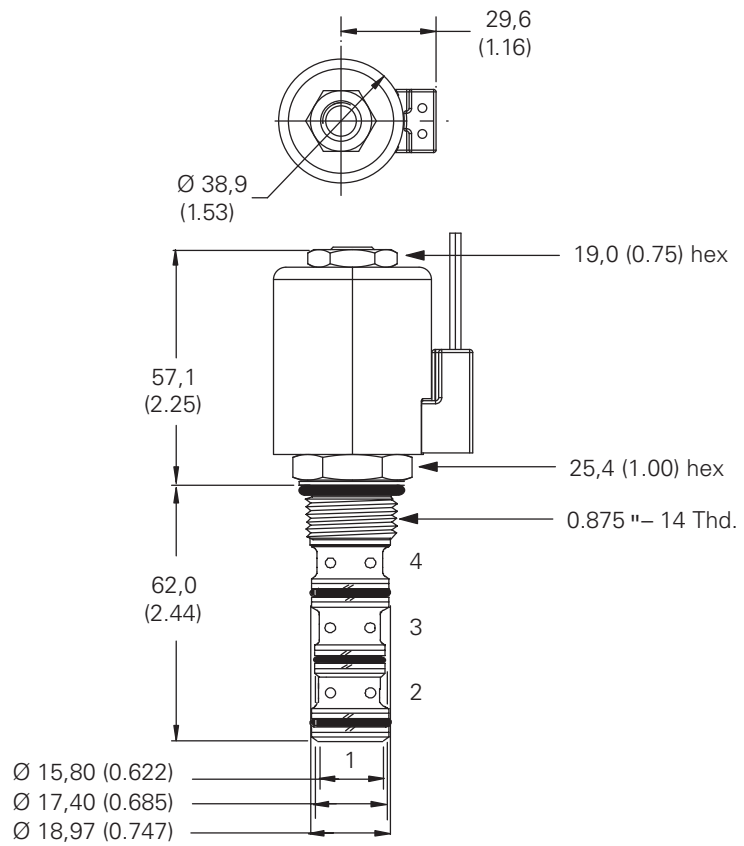
- 9 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")
- Note
Use J series, 23 W coils

Dimensions
mm (inch)

Torque cartridge in aluminum housing 47-54 Nm (35-40 ft. lbs)

Note
When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV4-10-4/4M/4R

4-way, 2-position spool type solenoid valve

Description

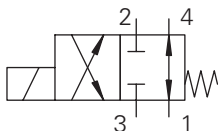
The SV4-10-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

Operation

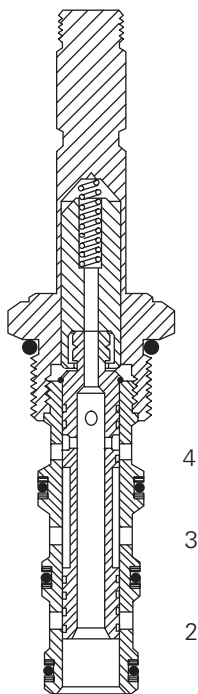
In the de-energized position, flow is allowed between port 1 and port 4 while port 2 and port 3 are blocked.

In the energized position port 3 is open to port 4 and port 2 is open to port 1.

Functional Symbol



Sectional View



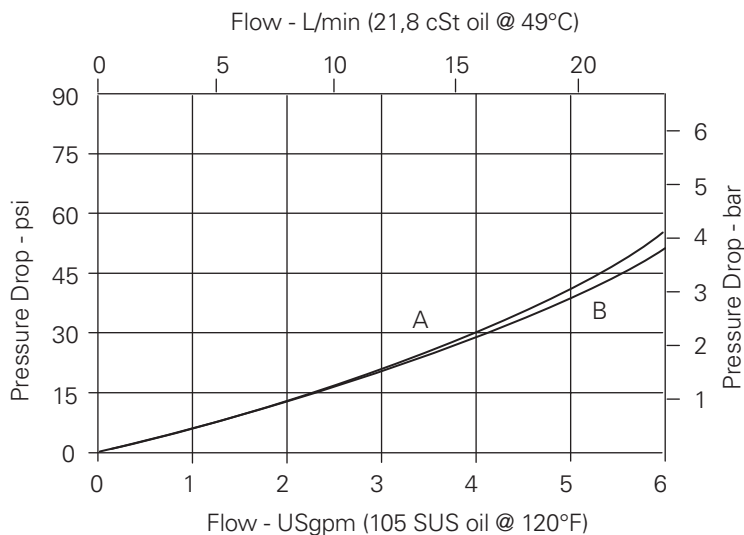
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

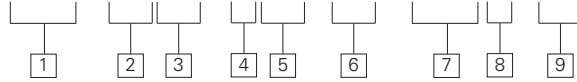
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	23 L/min (6 USgpm)
Internal leakage	164 cm ³ /min (10 in ³ /min) max. @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,44 kg (0.96 lbs)
Seal kit	889625 (Buna-N), 566080 (Viton®) Viton is a registered trademark of E.I. DuPont

Pressure Drop Curves

Cartridge only



SV4 - 10 (V) - 4 (*) - ** - *** - 00**



- 1 Function**
SV4 - Solenoid valve

- 2 Size**
10 - 10 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
4 - 4-way, 2 position

- 5 Manual override option**
Blank - No manual override
M - Knob type
R - Cable type
For valve dimensions with manual override option installed see page A-153.

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
3B	3/8" BSPP	02-179705*
6T	SAE6	566161*
2G	1/4" BSPP	876709
3G	3/8" BSPP	876715
6H	SAE 6	876708
8H	SAE 8	876713

*Light duty housing. See section J for housings.

7 Voltage rating

00	No coil	24A - 24VAC
12D	12VDC	115A - 115VAC
24D	24VDC	230A - 230VAC
36D	36VDC	12B - 12VDC/w diode*
		24B - 24VDC/w diode*

*Optional arc suppression diode.

- 8 Connector types**
- Blank - No coil
 - G - ISO 4400 DIN 43650
 - Q - Spade terminals
 - W - Leadwire
 - N - Deutsch (DC only)
 - Y - Amp JR (DC only)
 - D - Metripack 150 male (DC only)
 - J - Metripack 280 male (DC only)
- For coil dimensions see Section C.
- 9 Special features**
- 00 - None
(Only required if valve has special features, omitted if "00.")

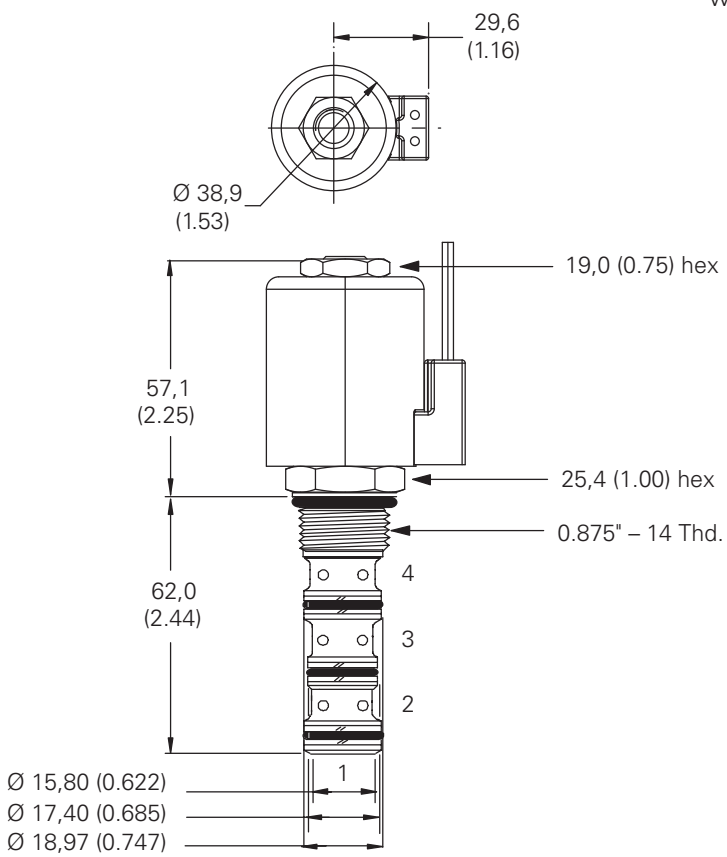
Note
Use J series, 23 W coils with this solenoid valve.

Dimensions
mm (inch)

Torque cartridge in aluminum housing 47-54 Nm (35-40 ft. lbs)

Note
When solenoid valve is ordered as cartridge only, nut is included.

WARNING
Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV5-10-4/4M/4R

4-way, 2-position spool type solenoid valve

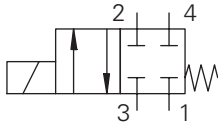
Description

The SV5-10-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

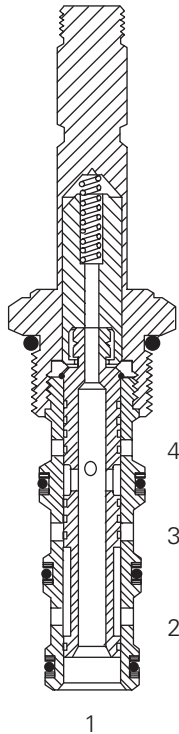
Operation

In the de-energized position, all ports are blocked. In the energized position port 2 is open to port 3 and port 1 is open to port 4.

Functional Symbol



Sectional View



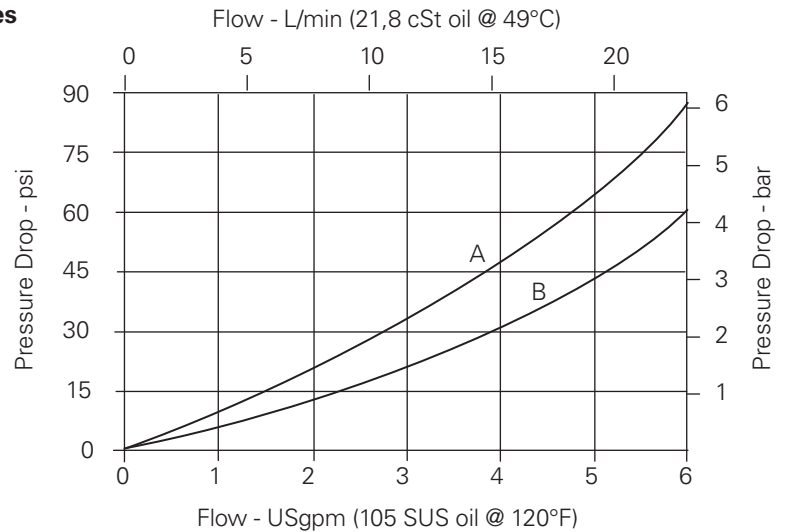
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	23 L/min (6 USgpm)
Internal leakage	164 cm ³ /min (10 in ³ /min) max. @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,44 kg (0.96 lbs)
Seal kit	889625 (Buna-N), 566080 (Viton®) Viton is a registered trademark of E.I. DuPont

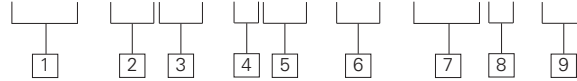
Pressure Drop Curves

Cartridge only



A - Port 1 to port 4
B - Port 3 to port 2

SV5 – 10 (V) – 4 (*) – ** – *** * – 00**



- 1 Function**
SV5 - Solenoid valve

- 2 Size**
10 - 10 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
4 - 4-way, 2 position

- 5 Manual override option**
Blank - No manual override
M - Knob type
R - Cable type
For valve dimensions with manual override option installed see page A-153.

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
3B	3/8" BSPP	02-179705*
6T	SAE6	566161*
2G	1/4" BSPP	876709
3G	3/8" BSPP	876715
6H	SAE 6	876708
8H	SAE 8	876713

*Light duty housing.
See section J for housings.

7 Voltage rating

00	No coil
12D	12VDC
24D	24VDC
36D	36VDC
24A	24VAC
115A	115VAC
230A	230VAC
12B	12VDC/w diode*
24B	24VDC/w diode*

*Optional arc suppression diode.

- 8 Connector types**
- Blank - No coil
 - G - ISO 4400 DIN 43650
 - Q - Spade terminals
 - W - Leadwire
 - N - Deutsch (DC only)
 - Y - Amp JR (DC only)
 - D - Metripack 150 male (DC only)
 - J - Metripack 280 male (DC only)
- For coil dimensions see Section C.

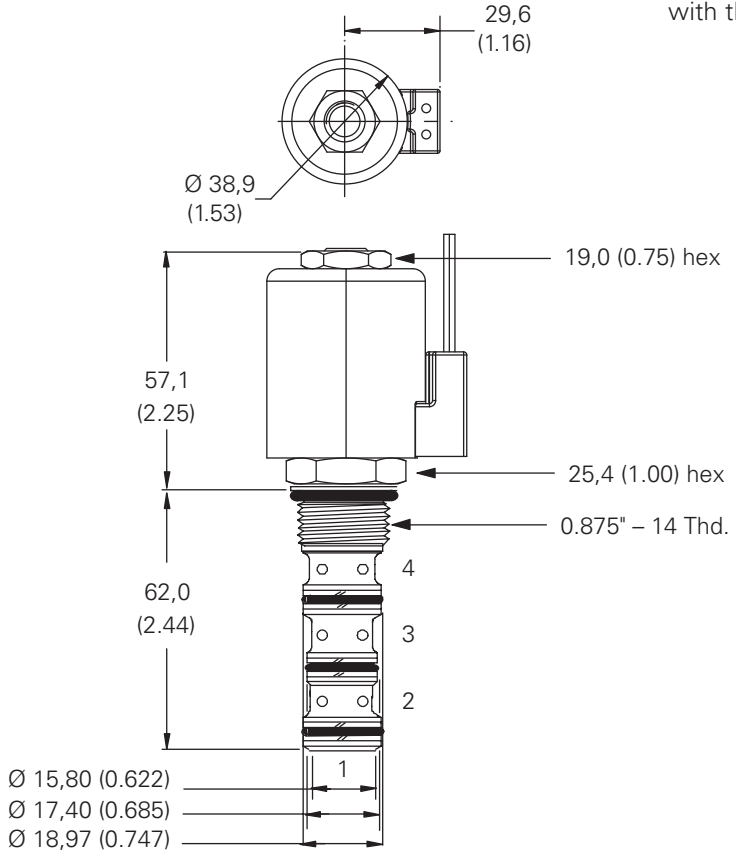
- 9 Special features**
- 00 - None
- (Only required if valve has special features, omitted if "00.")
- Note
Use J series, 23 W coils with this solenoid valve.

Dimensions
mm (inch)

Torque cartridge in aluminum housing 47-54 Nm (35-40 ft. lbs)

Note
When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV7-10-4/4P/4S

4-way, 2-position spool type solenoid valve

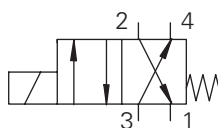
Description

The SV7-10-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

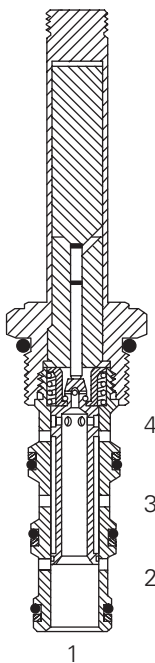
Operation

In the de-energized position, port 3 is open to port 4 and port 2 is open to port 1.

Functional Symbol



Sectional View



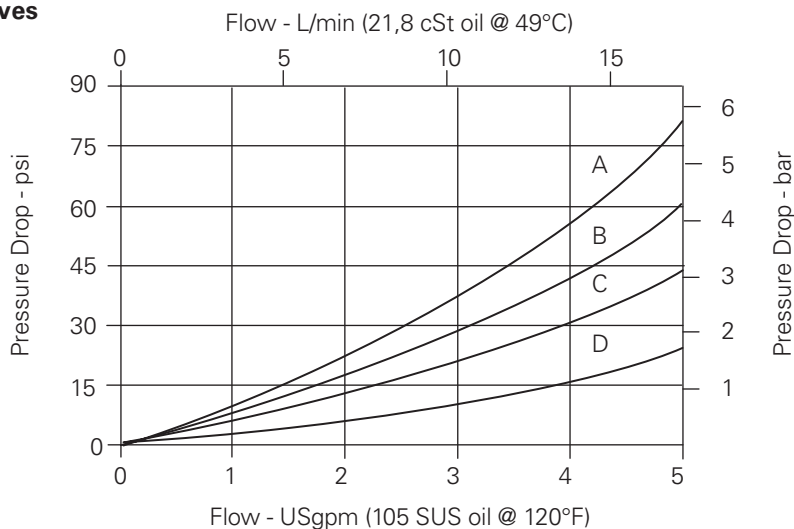
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	17 L/min (5 USgpm)
Internal leakage	164 cm ³ /min (10 in ³ /min) max. @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Cavity	C-10-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0,44 kg (0.96 lbs)
Seal kit	889625 (Buna-N), 566080 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

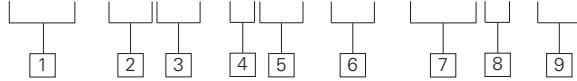
Pressure Drop Curves

Cartridge only



- A** - Port 4 to port 1 energized
- B** - Port 3 to port 2 energized
- C** - Port 3 to port 4 de-energized
- D** - Port 2 to port 1 de-energized

SV7 - 10 (V) - 4 (*) - ** - *** - 00**



- 1 Function**
SV7 - Solenoid valve

- 2 Size**
10 - 10 size

- 3 Seal material**
Blank - Buna-N
V - Viton®

- 4 Style**
4 - 4-way, 2 position

- 5 Manual override option**
Blank - No manual override
P - Push type
S - Screw type
For valve dimensions with manual override option installed see page A-152.

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
3B	3/8" BSPP	02-179705*
6T	SAE6	566161*
2G	1/4" BSPP	876709
3G	3/8" BSPP	876715
6H	SAE 6	876708
8H	SAE 8	876713

*Light duty housing. See section J for housings.

- 8 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)
For coil dimensions see Section C.

- 9 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")

7 Voltage rating

00 - No coil	24A - 24VAC
12D - 12VDC	115A - 115VAC
24D - 24VDC	230A - 230VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

*Optional arc suppression diode.

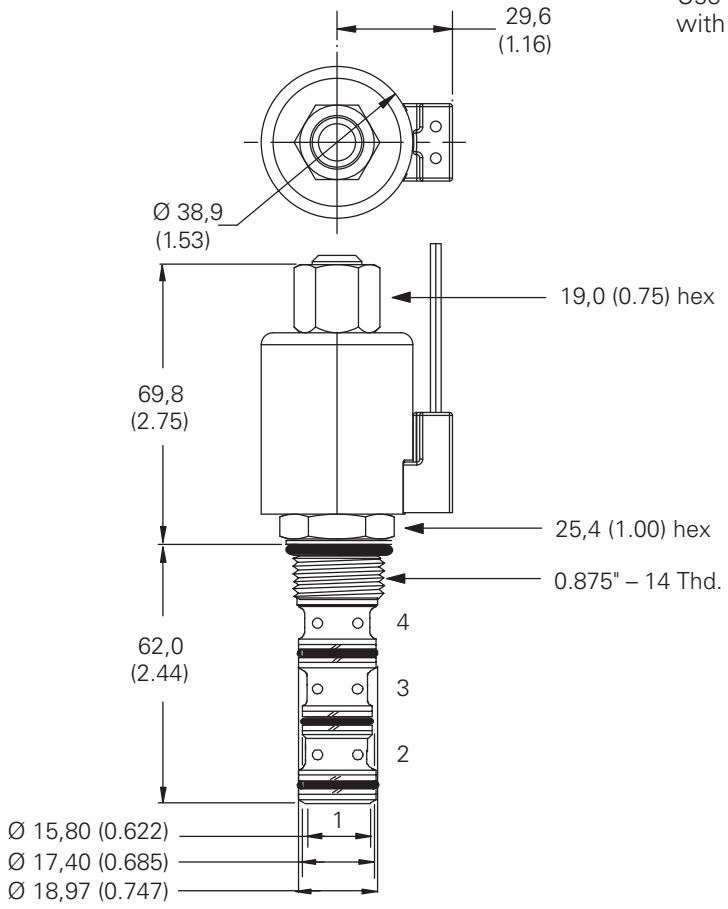
Note
Use J series, 23 W coils with this solenoid valve.

Dimensions
mm (inch)

Torque cartridge in housing
47-54 Nm (35-40 ft. lbs)

Note
When solenoid valve is ordered as cartridge only, coil nut is included.

WARNING
Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.



SV2A/B-12-4

4-way, 2-position, spool type solenoid valve

Description

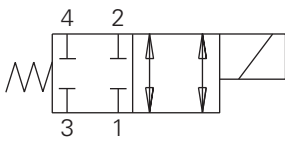
The SV2A/B-12-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

Operation

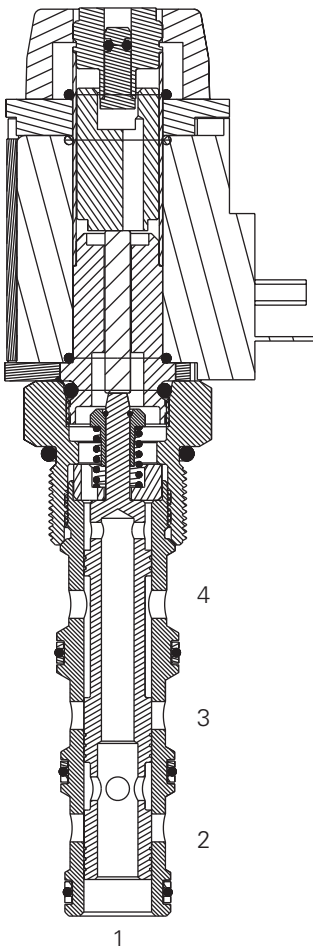
In the de-energized position, all ports are blocked.

In the energized position, port 3 is open to port 4 and port 2 is open to port 1.

Functional Symbol



Sectional View



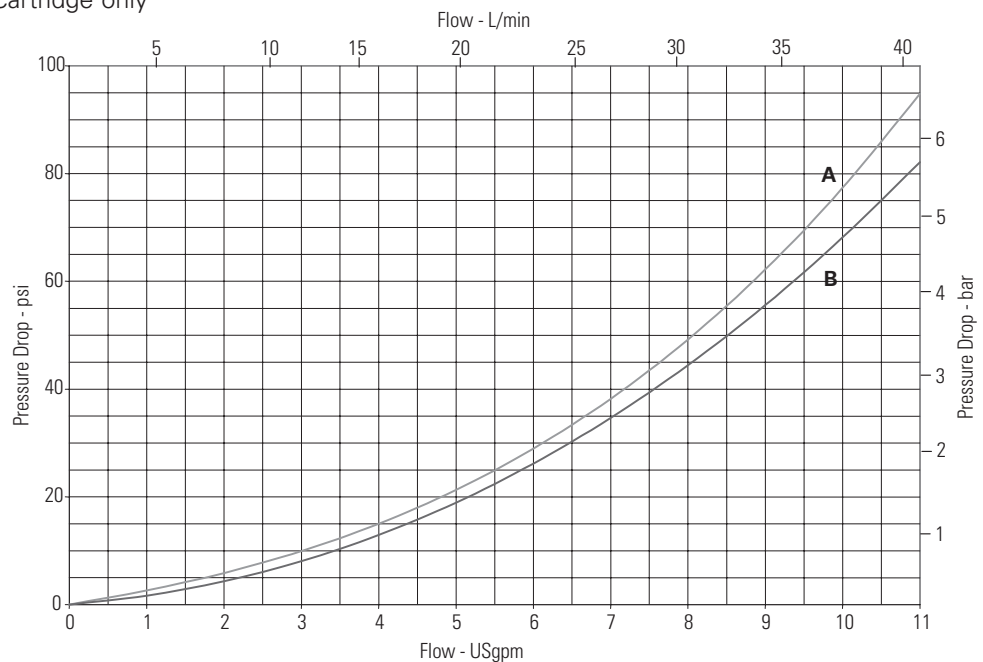
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure	210 bar (3000 psi)	
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)	
Rated flow	SV2A-12-4	34 L/min (9 USgpm)
	SV2B-12-4	42 L/min (11 USgpm)
Internal leakage	300 cm ³ /min (21.5 in ³ /min) max. @ 210 bar (3000 psi)	
Temperature range	-40° to 120°C (-40° to 248°F)	
Coil duty	Continuous from 85% to 110% of nominal voltage	
Cavity	C-12-4	
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.	
Filtration	Cleanliness code 18/16/13	
Housing material (standard)	Aluminum	
Weight including coil	SV2A-12-4	0,68 kg (1.5 lbs)
	SV2B-12-4	0,86 kg (1.9 lbs)
Seal kit	2160979 (Buna-N), 2160980 (Viton®) Viton is a registered trademark of E.I. DuPont	

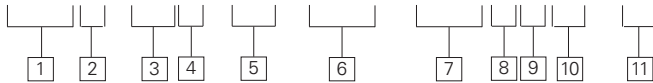
Pressure Drop Curves

Cartridge only



A - Port 2 to port 1
B - Port 3 to port 4

SV2 * - 12 * - 4P - ** - **** * * * * - ****



- 1 Function**
SV2 - Solenoid valve

- 2 Max Flow**
A - 34 L/min (9 USgpm)
B - 42 L/min (11 USgpm)

- 3 Size**
12 - 12 size

- 4 Seal Material**
Blank - Buna-N
V - Viton®

- 5 Style**
4P - 4 way, push type manual override

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
A6G	3/4" BSPP	5986432-001
A10H	SAE 10	5986434-001
A12H	SAE 12	5986436-001

- 9 Coil types**
Blank - No coil
L - L series (30W EN 490) used for SV2A-12
R - R series (30W) used for SV2B-12

- 7 Voltage rating**
00 - No coil
12D - 12VDC
24D - 24VDC
24A - 24VAC
110A - 110VAC
115A - 115VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
*Optional arc suppression diode.
- 8 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
W - Leadwire
For coil dimensions see Section C.

- 10 Coil special features**
Blank - No coil
00 - No special feature

- 11 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")
SF - Soft shift

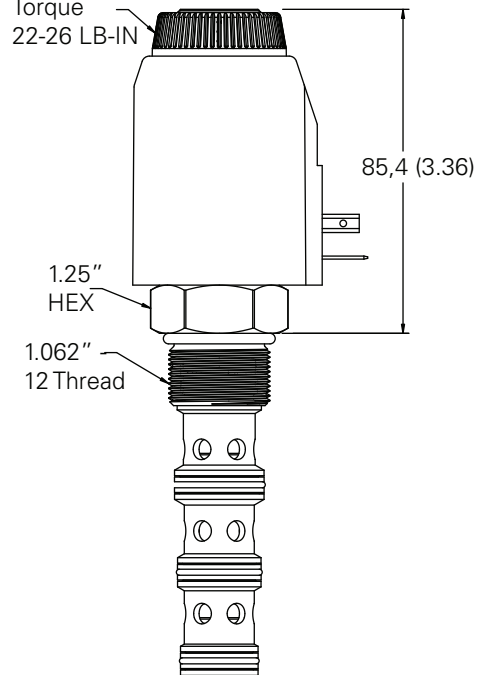
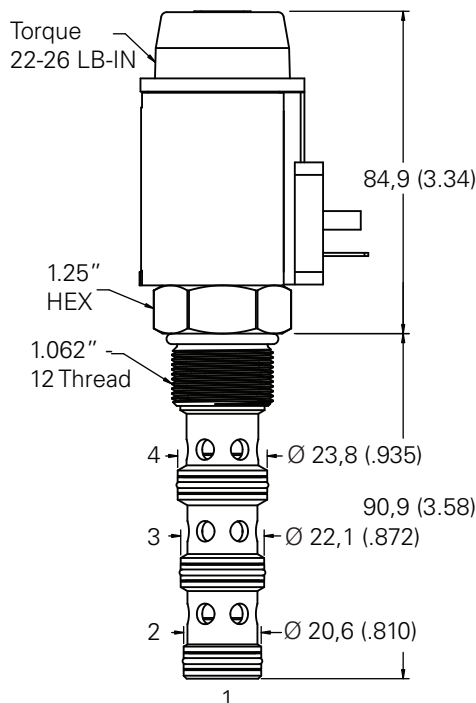
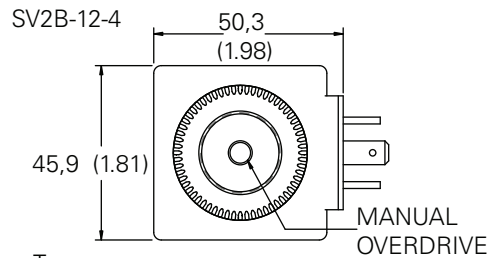
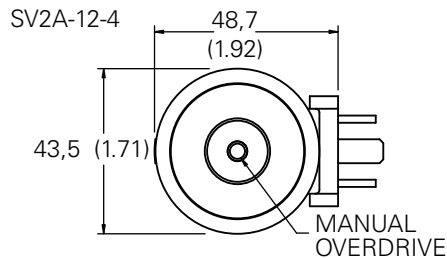
Dimensions

mm (inch)

Torque cartridge in aluminum housing 81-95 Nm (60-70ft. lbs)

Note

When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING

Maintain 2.5-3 Nm (1.8-2.2 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV3A/B-12-4

4-way, 2-position, spool type solenoid valve

Description

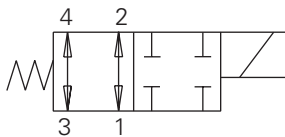
The SV3A/B-12-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

Operation

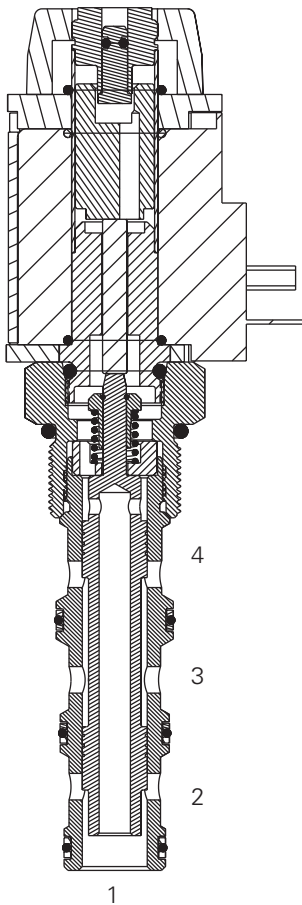
In the de-energized position, port 3 is open to port 4 and port 2 is open to port 1.

In the energized position, all ports are blocked.

Functional Symbol



Sectional View



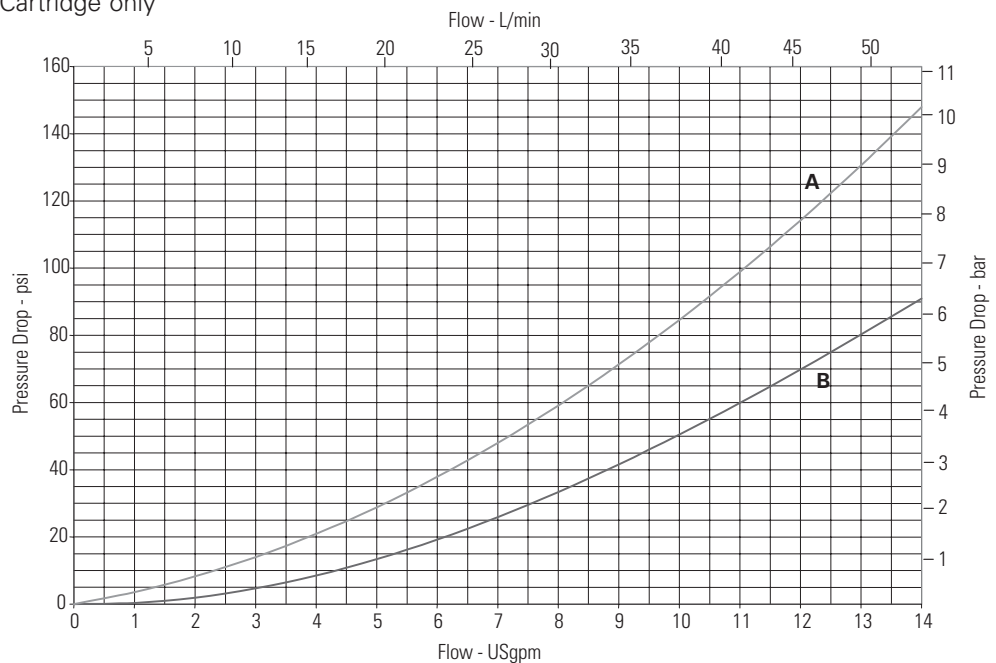
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure	210 bar (3000 psi)	
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)	
Rated flow	SV3A-12-4 SV3B-12-4	46 L/min (12 USgpm) 53 L/min (14 USgpm)
Internal leakage	300 cm ³ /min (21.5 in ³ /min) max. @ 210 bar (3000 psi)	
Temperature range	-40° to 120°C (-40° to 248°F)	
Coil duty	Continuous from 85% to 110% of nominal voltage	
Cavity	C-12-4	
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.	
Filtration	Cleanliness code 18/16/13	
Housing material (standard)	Aluminum	
Weight including coil	SV3A-12-4 SV3B-12-4	0,68 kg (1.5 lbs) 0,86 kg (1.9 lbs)
Seal kit	2160979 (Buna-N), 2160980 (Viton®) Viton is a registered trademark of E.I. DuPont	

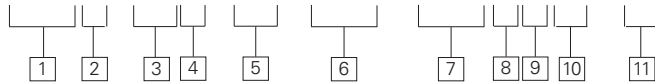
Pressure Drop Curves

Cartridge only



A - Port 3 to port 4
B - Port 2 to port 1

SV3 * - 12 * - 4P - ** - **** * * * * - ****



- 1 Function**
SV3 - Solenoid valve

- 2 Max Flow**
A - 46 L/min (12 USgpm)
B - 53 L/min (14 USgpm)

- 3 Size**
12 - 12 size

- 4 Seal Material**
Blank - Buna-N
V - Viton®

- 5 Style**
4P - 4 way, push type manual override

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
A6G	3/4" BSPP	5986432-001
A10H	SAE 10	5986434-001
A12H	SAE 12	5986436-001

- 9 Coil types**
Blank - No coil
L - L series (30W EN 490) used for SV3A-12
R - R series (30W) used for SV3B-12

- 7 Voltage rating**
00 - No coil
12D - 12VDC
24D - 24VDC
24A - 24VAC
110A - 110VAC
115A - 115VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
*Optional arc suppression diode.
- 8 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
W - Leadwire
N - Deutsch (DC only)
For coil dimensions see Section C.

- 10 Coil special features**
Blank - No coil
00 - No special feature

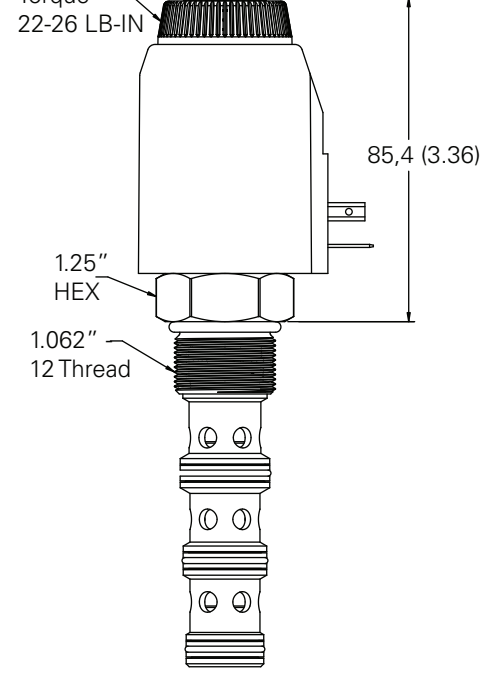
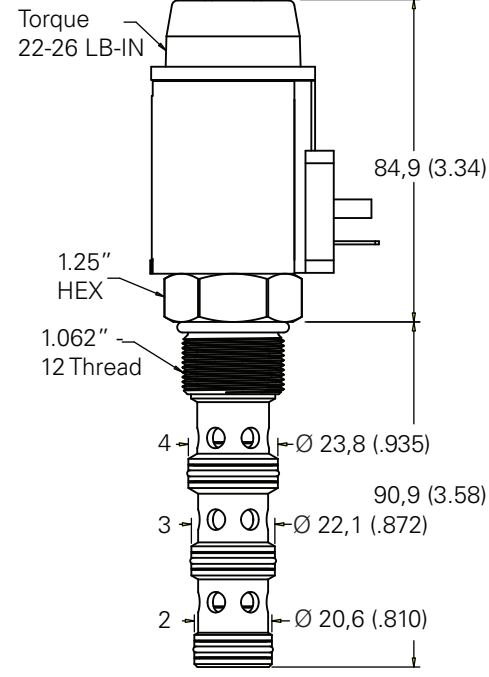
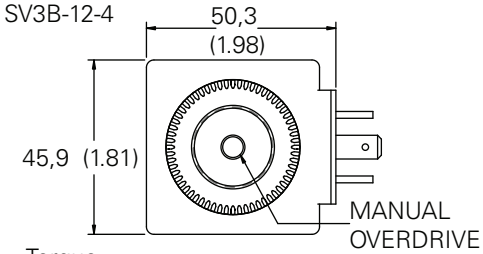
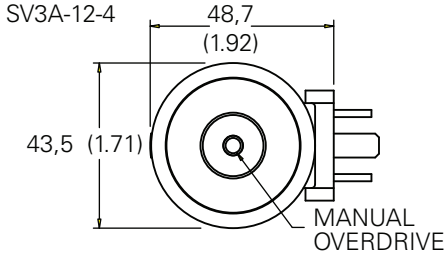
- 11 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")
SF - Soft shift

Dimensions

mm (inch)

Torque cartridge in aluminum housing 81-95 Nm (60-70ft. lbs)

Note
When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING
Maintain 2.5-3 Nm (1.8-2.2 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV5A/B-12-4

4-way, 2-position, spool type solenoid valve

Description

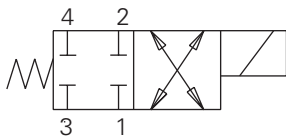
The SV5A/B-12-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

Operation

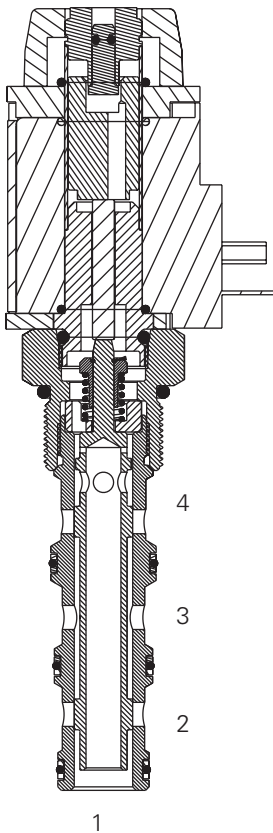
In the de-energized position, all ports are blocked.

In the energized position, port 3 is open to port 2 and port 4 is open to port 1.

Functional Symbol



Sectional View



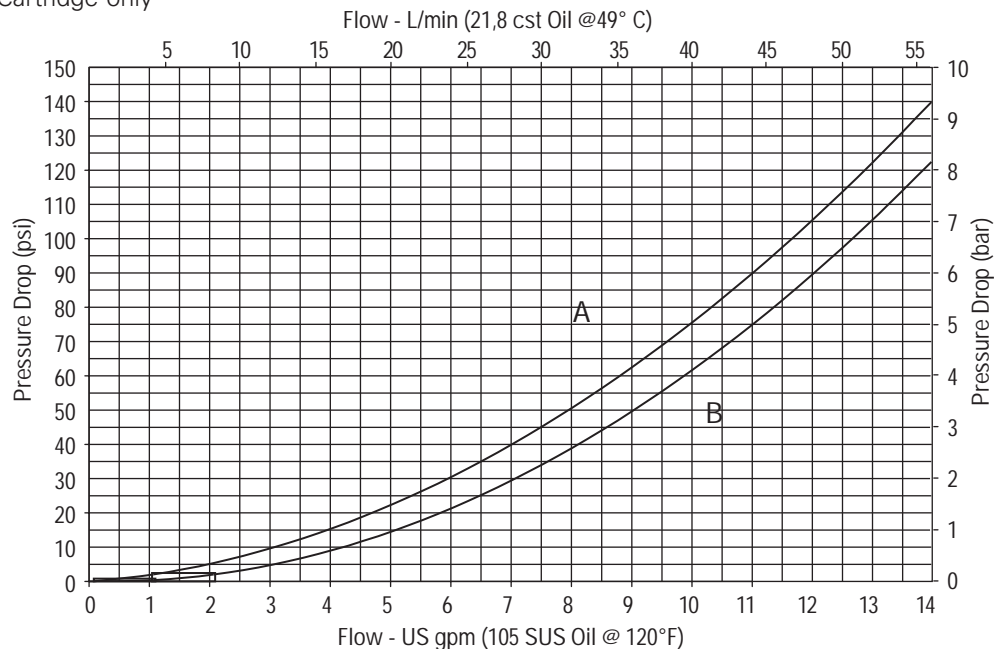
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure	210 bar (3000 psi)	
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)	
Rated flow	SV5A-12-4 SV5B-12-4	46 L/min (12 USgpm) 53 L/min (14 USgpm)
Internal leakage	300 cm ³ /min (21.5 in ³ /min) max. @ 210 bar (3000 psi)	
Temperature range	-40° to 120°C (-40° to 248°F)	
Coil duty	Continuous from 85% to 110% of nominal voltage	
Cavity	C-12-4	
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.	
Filtration	Cleanliness code 18/16/13	
Housing material (standard)	Aluminum	
Weight including coil	SV5A-12-4 SV5B-12-4	0,68 kg (1.5 lbs) 0,86 kg (1.9 lbs)
Seal kit	2160979 (Buna-N), 2160980 (Viton®) Viton is a registered trademark of E.I. DuPont	

Pressure Drop Curves

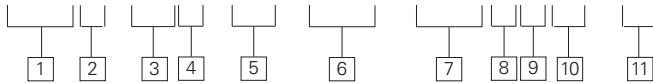
Cartridge only



A - Port 3 to port 2

B - Port 4 to port 1

SV5 * - 12 * - 4P - ** - **** * * * * - ****



- 1 Function**
SV5 - Solenoid valve

- 2 Max Flow**
A - 46 L/min (12 USgpm)
B - 53 L/min (14 USgpm)

- 3 Size**
12 - 12 size

- 4 Seal Material**
Blank - Buna-N
V - Viton®

- 5 Style**
4P - 4 way, push type manual override

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
A6G	3/4" BSPP	5986432-001
A10H	SAE 10	5986434-001
A12H	SAE 12	5986436-001

- 9 Coil types**
Blank - No coil
L - L series (30W EN 490) used for SV5A-12
R - R series (30W) used for SV5B-12

- 7 Voltage rating**
00 - No coil
12D - 12VDC
24D - 24VDC
24A - 24VAC
110A - 110VAC
115A - 115VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
*Optional arc suppression diode.
- 8 Connector types**
Blank - No coil
G - ISO 4400 DIN 43650
W - Leadwire
N - Deutsch (DC only)
For coil dimensions see Section C.

- 10 Coil special features**
Blank - No coil
00 - No special feature

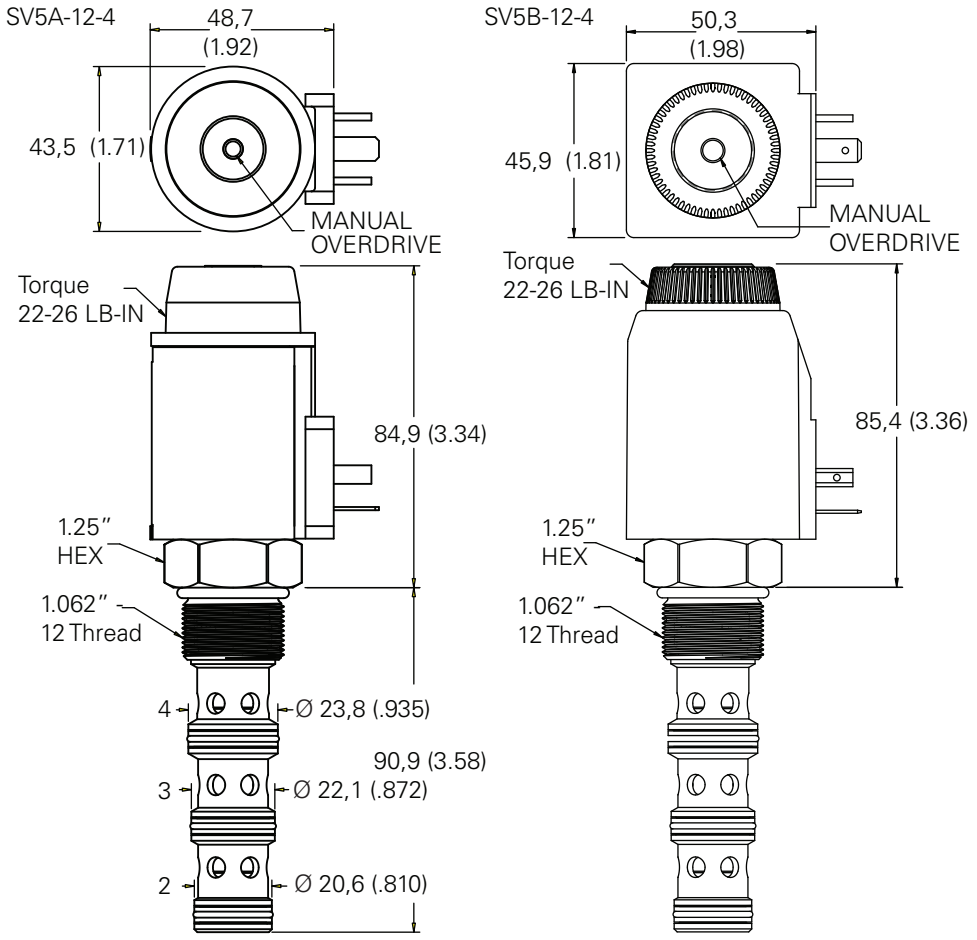
- 11 Special features**
00 - None
(Only required if valve has special features, omitted if "00.")
SF - Soft shift

Dimensions

mm (inch)

Torque cartridge in aluminum housing 81-95 Nm (60-70ft. lbs)

Note
When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING
Maintain 2.5-3 Nm (1.8-2.2 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV7A/B-12-4

4-way, 2-position, spool type solenoid valve

Description

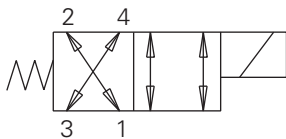
The SV7A/B-12-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

Operation

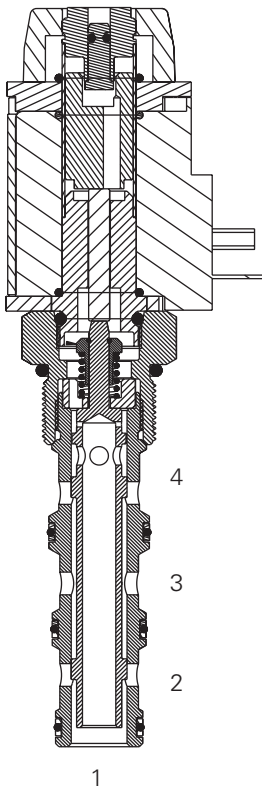
In the energized position, port 3 is open to port 4 and port 2 is open to port 1.

In the de-energized position, port 3 is open to port 2 and port 4 is open to port 1.

Functional Symbol



Sectional View



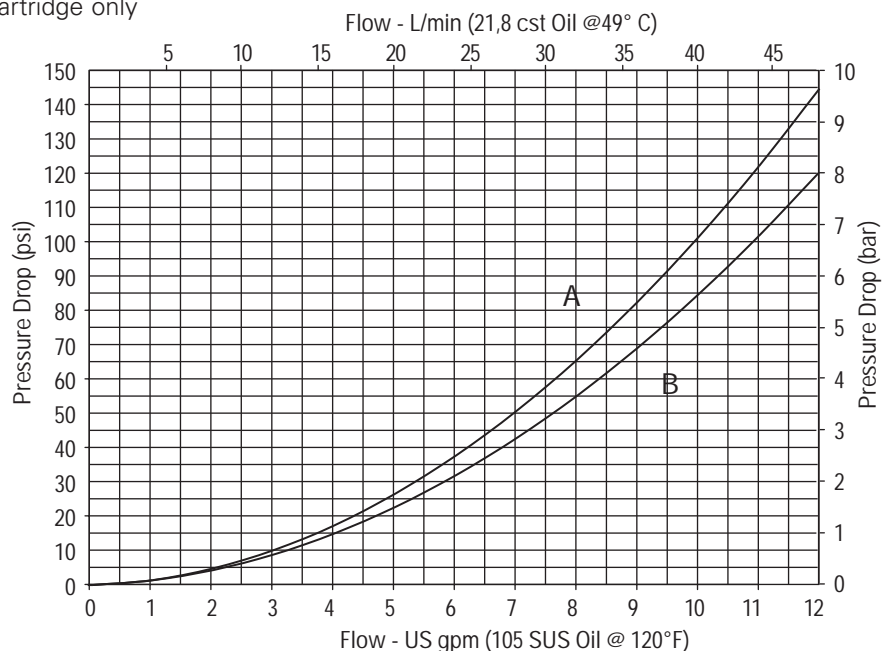
RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure			210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)			210 bar (3000 psi)
Rated flow	SV7A-12-4	38 L/min (10 USgpm)	
	SV7B-12-4		46 L/min (12 USgpm)
Internal leakage	300 cm ³ /min (21.5 in ³ /min) max. @ 210 bar (3000 psi)		
Temperature range			-40° to 120°C (-40° to 248°F)
Coil duty			Continuous from 85% to 110% of nominal voltage
Cavity			C-12-4
Fluids			All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration			Cleanliness code 18/16/13
Housing material (standard)			Aluminum
Weight including coil	SV7A-12-4	0,68 kg (1.5 lbs)	
	SV7B-12-4		0,86 kg (1.9 lbs)
Seal kit			2160979 (Buna-N), 2160980 (Viton®) Viton is a registered trademark of E.I. DuPont

Pressure Drop Curves

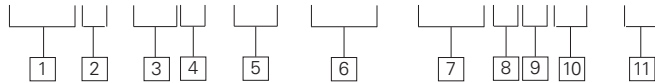
Cartridge only



A - Port 2 to port 1, port 3 to port 4

B - Port 3 to port 4, port 3 to port 2

SV7 * - 12 * - 4P - ** - **** * * * * - ****



1 Function
SV7 - Solenoid valve

2 Max Flow
A - 38 L/min (10 USgpm)
B - 46 L/min (12 USgpm)

3 Size
12 - 12 size

4 Seal Material
Blank - Buna-N
V - Viton®

5 Style
4P - 4 way, push type manual override

6 Port Size

CODE	PORT SIZE	HOUSING NUMBER
0	Cartridge only	
A6G	3/4" BSPP	5986432-001
A10H	SAE 10	5986434-001
A12H	SAE 12	5986436-001

7 Voltage rating
00 - No coil
12D - 12VDC
24D - 24VDC
24A - 24VAC
110A - 110VAC
115A - 115VAC
12B - 12VDC/w diode*
24B - 24VDC/w diode*
 *Optional arc suppression diode.

8 Connector types
Blank - No coil
G - ISO 4400 DIN 43650
W - Leadwire
N - Deutsch (DC only)
 For coil dimensions see Section C.

9 Coil types
Blank - No coil
L - L series (30W EN 490) used for SV7A-12
R - R series (30W) used for SV7B-12

10 Coil special features
Blank - No coil
00 - No special feature

11 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")
SF - Soft shift

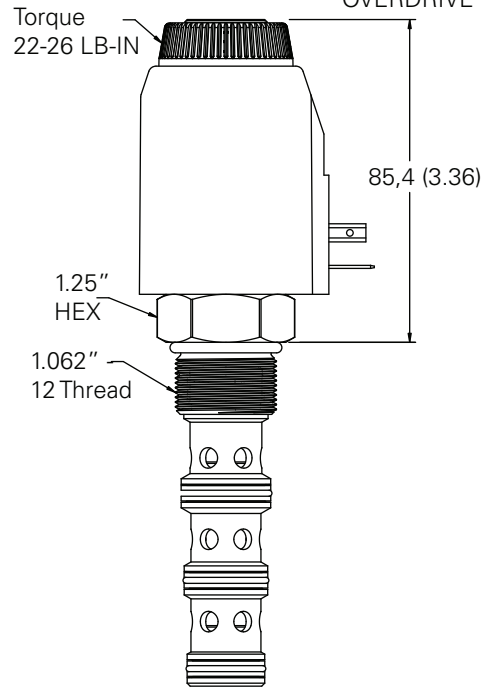
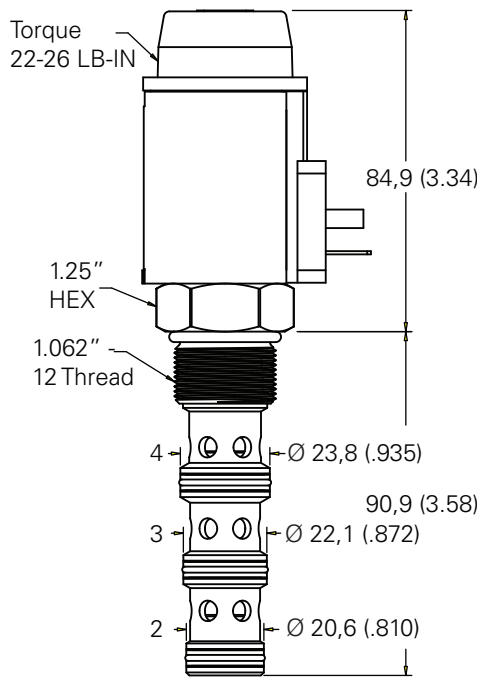
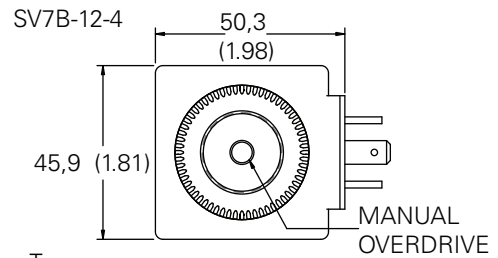
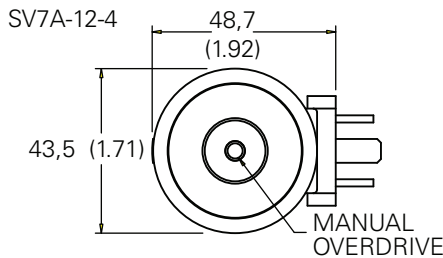
Dimensions

mm (inch)

Torque cartridge in aluminum housing 81-95 Nm (60-70ft. lbs)

Note

When solenoid valve is ordered as cartridge only, coil nut is included.



WARNING
 Maintain 2.5-3 Nm (1.8-2.2 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV9-8-A

4-Way, 3-position, screw-in cartridge solenoid valve

Description

The SV9-8-A is a 4-way, 3-position, direct acting, spool type directional control valve.

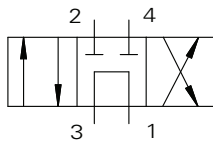
Operation

In the de-energized position, this valve allows flow from port 3 to port 1 and blocks ports 2 and 4. When

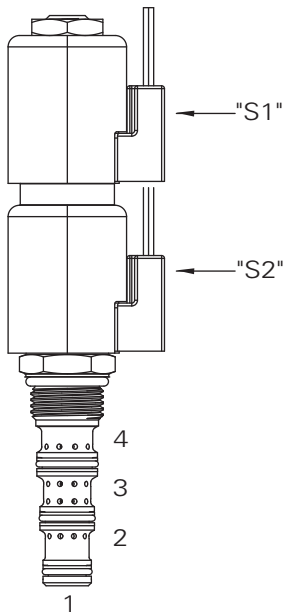
solenoid 1 (S1) is energized, flow is directed from port 3 to port 2 and from port 4 to port 1.

When solenoid 2 (S2) is energized, flow is directed from port 3 to port 4 and from port 2 to port 1.

Functional Symbol



Profile View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

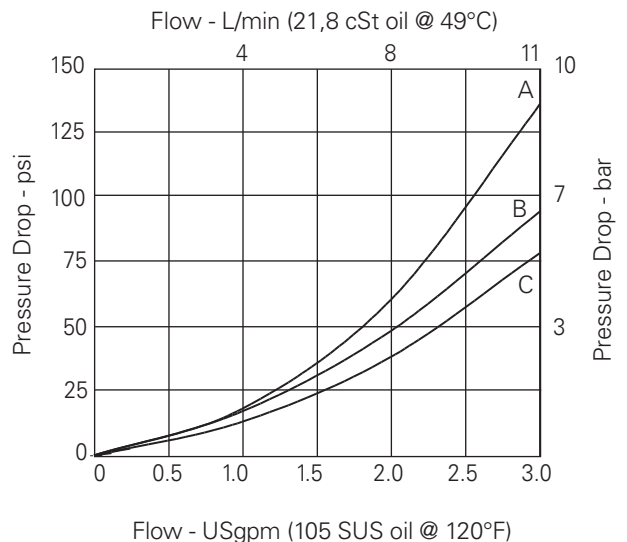
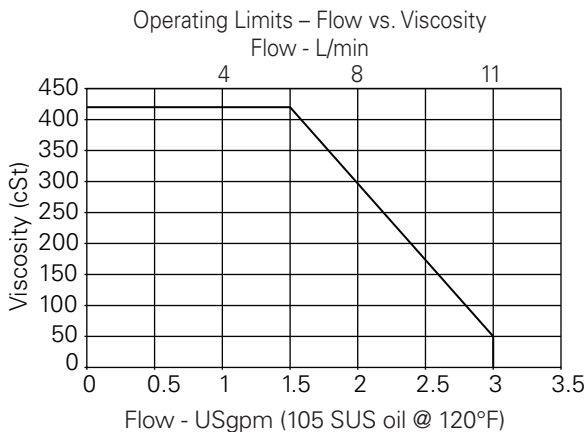
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Fatigue pressure	3,000 psi per NFPA/T2-6-1 R2-2000
Rated burst pressure	11,000 psi per NFPA/T2-6-1 R2-2000
Max flow	See operating limits below
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Coil power	23W
Cavity	C-8-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	(1.2 lbs)
Seal kit	02-160757 (Buna-N), 02-160758 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>
Internal leakage	164 cm ³ /min (10 in ³ /min) max. @ 210 bar (3000 psi)

Endurance tested to 1 million cycles at full rated flow and pressure.

Performance Characteristics

Cartridge only

- A** - Port 3 to port 2 or port 4
- B** - Port 3 to port 1 de-energized
- C** - Port 2 or port 4 to port 1



SV9-8-B

4-Way, 3-position, screw-in cartridge solenoid valve



Description

The SV9-8-B is a 4-way, 3-position, direct acting, spool type directional valve.

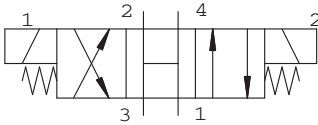
Operation

In the de-energized position, all ports are open to each other. When solenoid 1 (S1) is energized, flow is

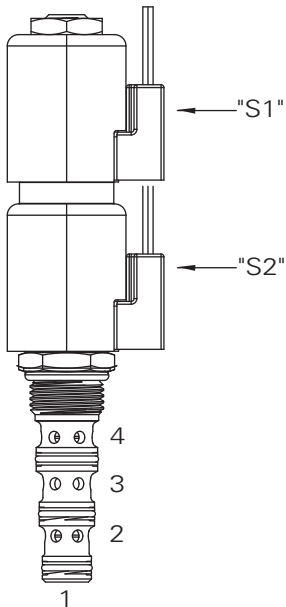
directed from port 3 to port 4 and from port 2 to port 1. When solenoid 2 (S2) is energized, flow is directed

from port 3 to port 2 and from port 4 to port 1.

Functional Symbol



Profile View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

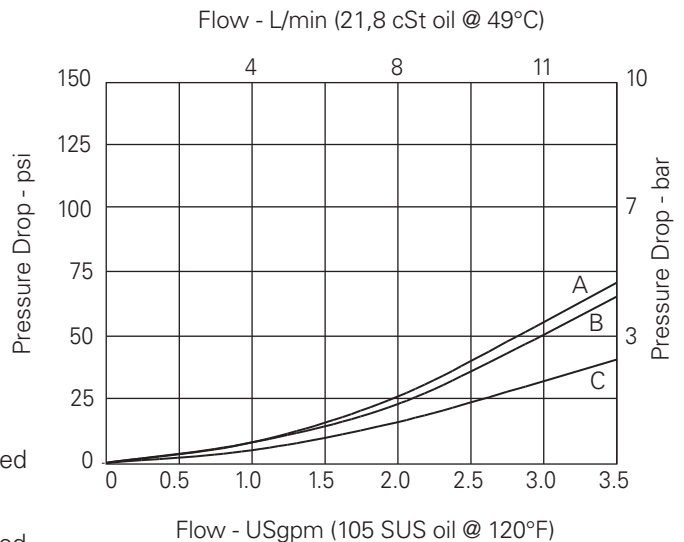
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Fatigue pressure	3,000 psi per NFPA/T2-6-1 R2-2000
Rated burst pressure	11,000 psi per NFPA/T2-6-1 R2-2000
Max flow	13.2 L/min (3.5 USgpm)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Coil power	23W
Cavity	C-8-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	(1.2 lbs)
Seal kit	02-160757 Buna-N, 02-160758 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>
Internal leakage	164 cm ³ /min (10 in ³ /min) max. @ 210 bar (3000 psi)

Endurance tested to 1 million cycles at full rated flow and pressure.

Performance characteristics

Cartridge only

- A** - Port 4 or port 1 to port 4
Port 3 to port 1 de-energized
- B** - Port 3 to port 2 or port 4
- C** - Port 2 or port 1
Port 2 or 4 to 1 de-energized



SV9-8-E

4-Way, 3-position, screw-in cartridge, solenoid valve

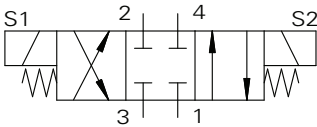
Description

The SV9-8-E is a 4-way, 3-position, direct acting, spool type directional valve.

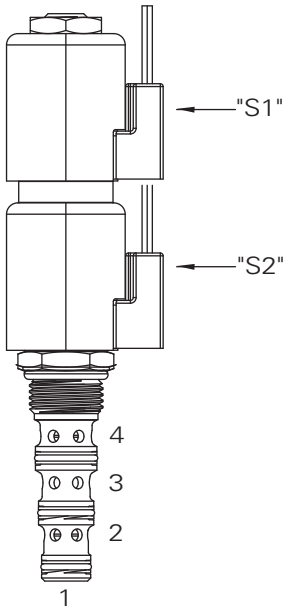
Operation

In the de-energized (center) position, all ports are blocked. When solenoid 1 (S1) is energized, flow is directed from port 3 to port 4 and from port 2 to port 1. When solenoid 2 (S2) is energized, flow is directed

Functional Symbol



Profile View



RATINGS AND SPECIFICATIONS

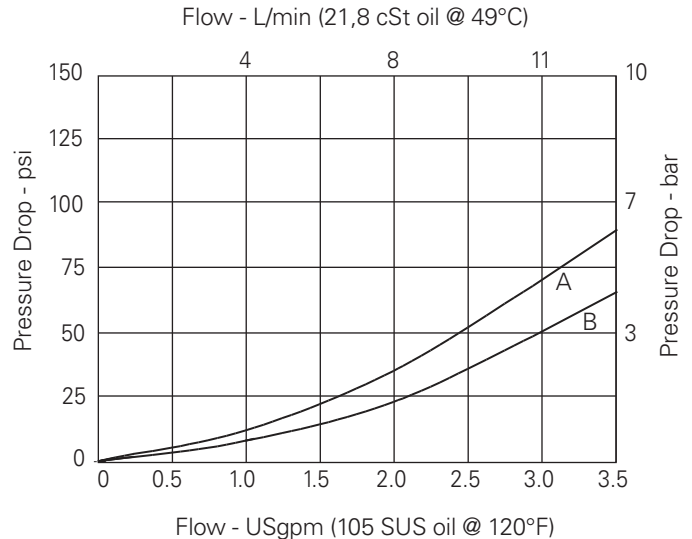
Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Fatigue pressure	3,000 psi per NFPA/T2-6-1 R2-2000
Rated burst pressure	11,000 psi per NFPA/T2-6-1 R2-2000
Max flow	13.2 L/min (3.5 USgpm)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Coil power	23W
Cavity	C-8-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	(1.2 lbs)
Seal kit	02-160757 (Buna-N), 02-160758 (Viton®) <small>®Viton is a registered trademark of E.I. DuPont</small>
Internal leakage	164 cm ³ /min (10 in ³ /min) max. @ 210 bar (3000 psi)

Endurance tested to 1 million cycles at full rated flow and pressure.

Pressure Drop Curves

Cartridge only



A - Port 3 to port 2 or port 4
B - Port 2 to port 4 or port 1

SV9-8-F

4-Way, 3-position, screw-in cartridge, solenoid valve

Description

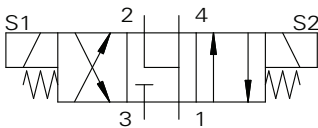
The SV9-8-F is a 4-way, 3-position, direct acting, spool type directional valve.

Operation

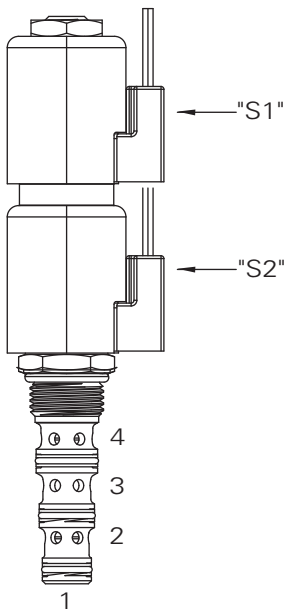
In the de-energized (center) position, port 1, port 2, and port 4 are open to each other while port 3 is blocked. When solenoid 1 (S1) is energized, flow is

directed from port 3 to port 4 and from port 2 to port 1. When solenoid 2 (S2) is energized, flow is directed from port 3 to port 2 and from port 4 to port 1.

Functional Symbol



Profile View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

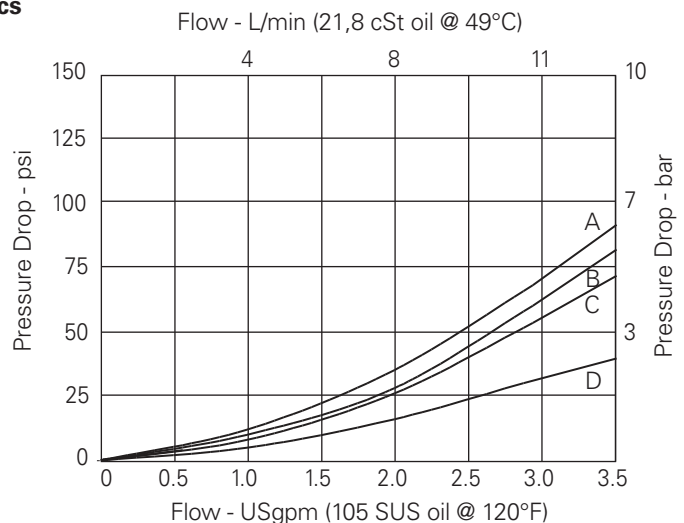
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Fatigue pressure	3,000 psi per NFPA/T2-6-1 R2-2000
Rated burst pressure	11,000 psi per NFPA/T2-6-1 R2-2000
Max flow	13.2 L/min (3.5 USgpm)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Coil power	23W
Cavity	C-8-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	(1.2 lbs)
Seal kit	02-160757 (Buna-N), 02-160758 (Viton®) <small>®Viton is a registered trademark of E.I. DuPont</small>
Internal leakage	164 cm ³ /min (10 in ³ /min) max. @ 210 bar (3000 psi)

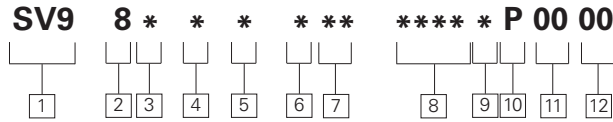
Endurance tested to 1 million cycles at full rated flow and pressure.

Performance Characteristics

Cartridge only

- A** - Port 4 or port 1 de-energized
- B** - Port 3 to port 2 or port 4 to port 1
- C** - Port 2 or port 1 de-energized
- D** - Port 2 or 1



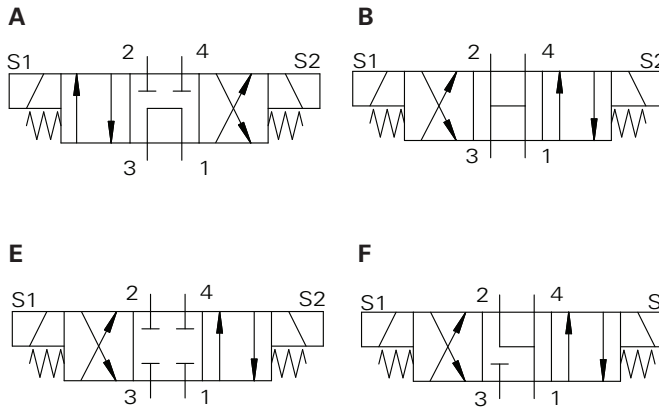


1 Function
SV9 - Solenoid valve

2 Size
8 - 8 size

3 Seal material
N - Buna-N
V - Viton®

4 Spool center condition



7 Port Size†

8 Voltage rating†
0000 - No coil
012D - 12VDC
024D - 4VDC
036D - 36VDC
024A - 24VAC
115A - 115VAC
230A - 230VAC
012B - 12VDC/w diode*
024B - 24VDC/w diode*
 *Optional arc suppression diode.

5 Manual override option

0 - No manual override
M - Manual override
 For valve dimensions with manual override see pages A-152 and A-153.

6 Housing material

0 - Cartridge only
A - Aluminum

9 Connector types†

0 - No coil
G - ISO 4400 DIN 43650
O - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

S - Steel

10 Coil series†

0 - No Coil
P - 8 series, 23 W

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum	Steel
00	Cartridge only		
2G	1/4" BSPP	02-160747	02-160753
3G	3/8" BSPP	02-160748	02-160754
4T	SAE 4	02-160749	02-160751
6T	SAE 6	02-160750	02-160752

See section J for housings.

11 Coil special features†

00 - None

12 Valve special features

00 - None

† These model digits are not stamped on the valve.

SV9-8

Dimensions

Dimensions

mm (inch)

Torque cartridge in aluminum or steel housing
34-41 Nm (25-30 ft. lbs).

Valve is shown with "W" coil. See other coils in Section C.

Note

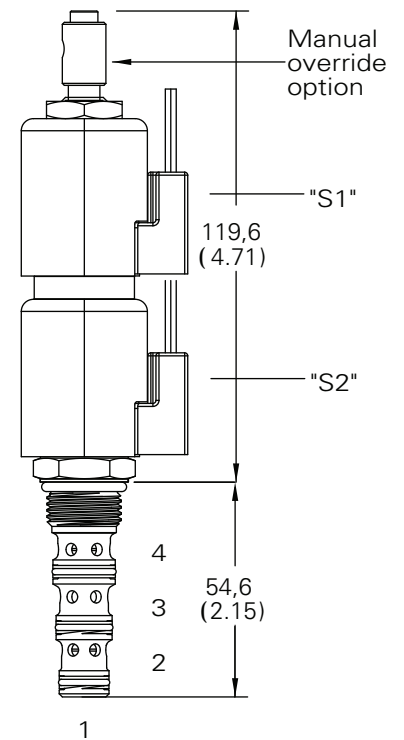
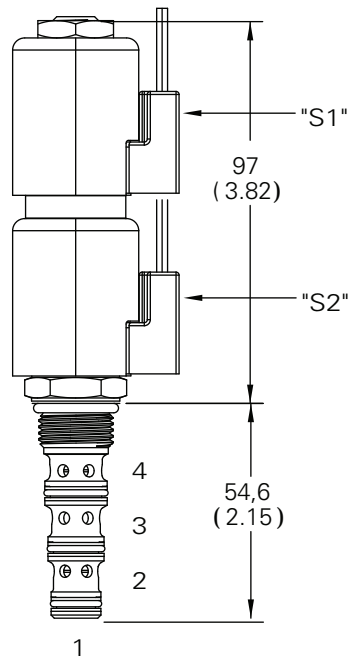
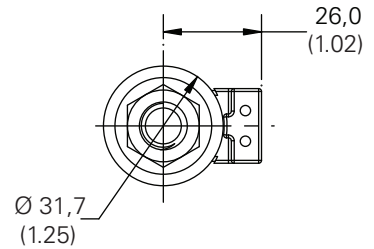
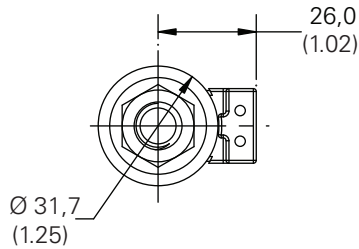
When solenoid valve is ordered as cartridge only, coil nut is included.

When solenoid valve is ordered without coils, it will be supplied with only the nut. The spacer must be ordered separately.

This valve uses the P series, 8 size, 23 W coil.

SPARE PARTS

Coil nut	565558
Coil spacer	02-186730



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SV9-10-A

4-Way, 3-position, screw-in cartridge solenoid valve

Description

The SV9-10-A is a 4-way, 3-position, direct acting, spool type directional control valve.

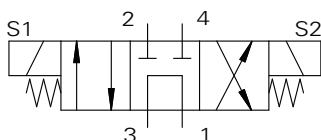
Operation

In the de-energized position, this valve allows flow from port 3 to port 1 and blocks ports 2 and 4. When

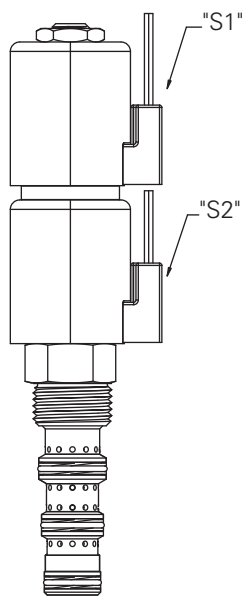
solenoid 1 (S1) is energized, flow is directed from port 3 to port 2 and from port 4 to port 1.

When solenoid 2 (S2) is energized, flow is directed from port 3 to port 4 and from port 2 to port 1.

Functional Symbol



Profile View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

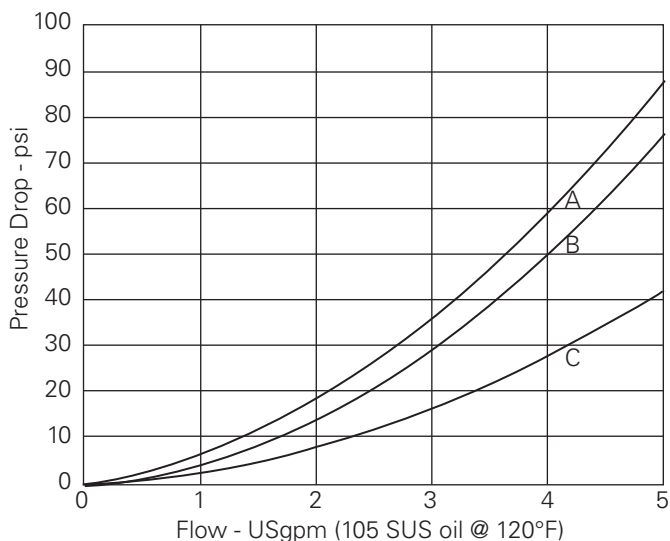
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Fatigue pressure	3,000 psi per NFPA/T2-6-1 R2-2000
Rated burst pressure	(626 bar) 9090 psi per NFPA/T2-6-1 R2-2000
Max flow	5 USgpm
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Coil power	23W
Cavity	C-10-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0.95Kg (2.1 lbs)
Seal kit	889625 (Buna-N), 566080 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>
Internal leakage	246 cm ³ /min (15 in ³ /min) max. @ 210 bar (3000 psi)

Endurance tested to 1 million cycles at full rated flow and pressure.

Performance Characteristics

Cartridge only

- A** - Port 3 to port 1, de-energized
- B** - Port 3 to port 2, port 3 to port 4
- C** - Port 2 to port 1, port 4 to port 1



SV9-10-B

4-Way, 3-position, screw-in cartridge solenoid valve

Description

The SV9-10-B is a 4-way, 3-position, direct acting, spool type directional valve.

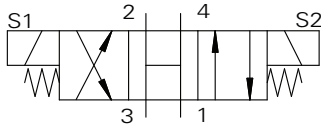
Operation

In the de-energized position, all ports are open to each other. When solenoid 1 (S1) is energized, flow is

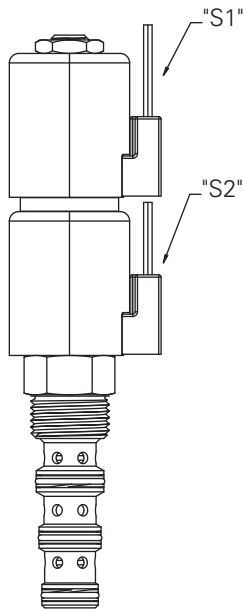
directed from port 3 to port 4 and from port 2 to port 1. When solenoid 2 (S2) is energized, flow is directed

from port 3 to port 2 and from port 4 to port 1.

Functional Symbol



Profile View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

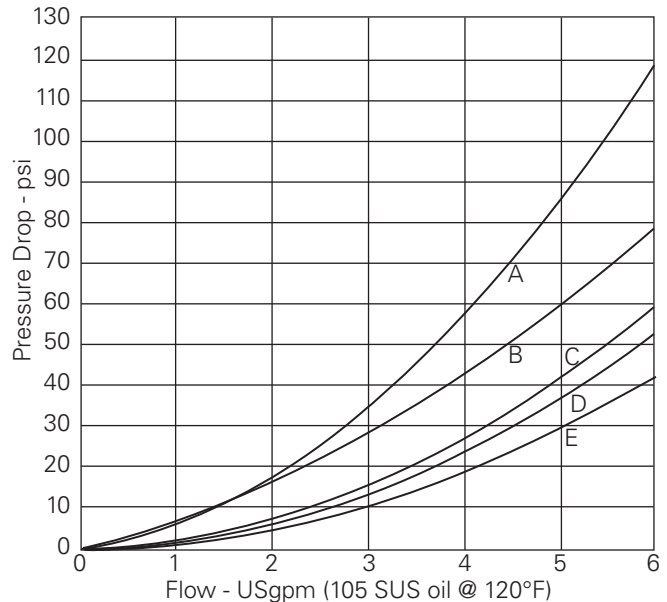
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Fatigue pressure	3,000 psi per NFPA/T2-6-1 R2-2000
Rated burst pressure	(626 bar) 9090 psi per NFPA/T2-6-1 R2-2000
Max flow	6 USgpm
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Coil power	26W
Cavity	C-10-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0.95 Kg (2.1 lbs)
Seal kit	889625 Buna-N, 566080 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>
Internal leakage	246 cm ³ /min (15 in ³ /min) max. @ 210 bar (3000 psi)

Endurance tested to 1 million cycles at full rated flow and pressure.

Performance characteristics

Cartridge only

- A** - Port 3 to port 1, de-energized
- B** - Port 3 to port 2, port 3 to port 4
- C** - Port 4 to port 1, port 2 to port 1, de-energized
- D** - Port 2 to port 1
- E** - Port 4 to port 1



SV9-10-E

4-Way, 3-position, screw-in cartridge, solenoid valve

Description

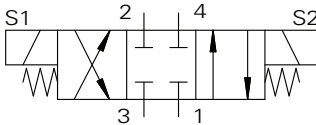
The SV9-10-E is a 4-way, 3-position, direct acting, spool type directional valve.

Operation

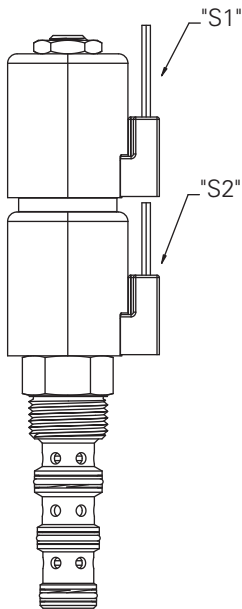
In the de-energized (center) position, all ports are blocked. When solenoid 1 (S1) is energized, flow is

directed from port 3 to port 4 and from port 2 to port 1. When solenoid 2 (S2) is energized, flow is directed

Functional Symbol



Profile View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

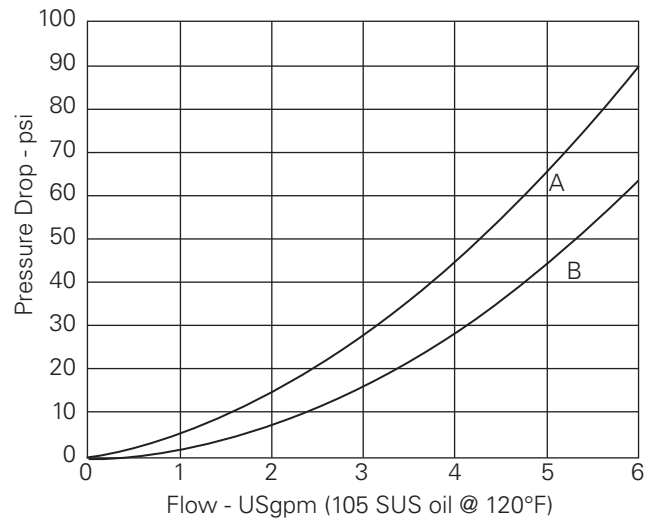
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Fatigue pressure	3,000 psi per NFPA/T2-6-1 R2-2000
Rated burst pressure	(626 bar) 9090 psi per NFPA/T2-6-1 R2-2000
Max flow	6 USsgpm
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Coil power	26W
Cavity	C-10-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0.95 Kg (2.1 lbs)
Seal kit	889625 (Buna-N), 566080 (Viton®) <small>©Viton is a registered trademark of E.I. DuPont</small>
Internal leakage	246 cm ³ /min (15 in ³ /min) max. @ 210 bar (3000 psi)

Endurance tested to 1 million cycles at full rated flow and pressure.

Pressure Drop Curves

Cartridge only

- A** - Port 3 to port 2,
port 3 to port 4
- B** - Port 2 to port 1,
port 4 to port 1



SV9-10-F

4-Way, 3-position, screw-in cartridge, solenoid valve



Description

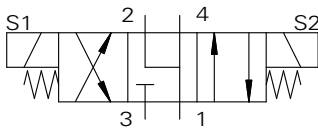
The SV9-10-F is a 4-way, 3-position, direct acting, spool type directional valve.

Operation

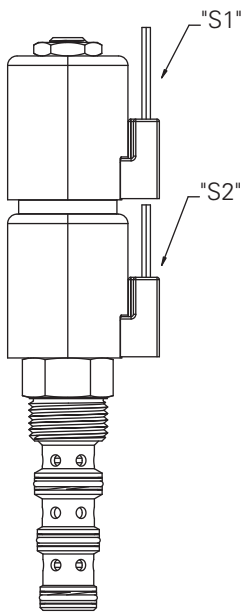
In the de-energized (center) position, port 1, port 2, and port 4 are open to each other while port 3 is blocked. When solenoid 1 (S1) is energized, flow is

directed from port 3 to port 2 and from port 2 to port 1. When solenoid 2 (S2) is energized, flow is directed from port 3 to port 2 and from port 4 to port 1.

Functional Symbol



Profile View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)

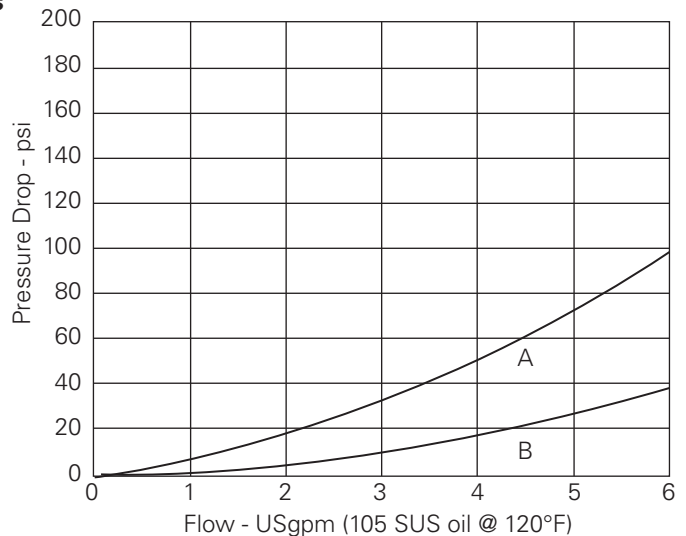
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Fatigue pressure	3,000 psi per NFPA/T2-6-1 R2-2000
Rated burst pressure	(626 bar) 9090 psi per NFPA/T2-6-1 R2-2000
Max flow	6 USgpm
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Coil power	26W
Cavity	C-10-4
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Housing material (standard)	Aluminum
Weight including coil	0.95 Kg (2.1 lbs)
Seal kit	889625 (Buna-N), 566080 (Viton®) <small>®Viton is a registered trademark of E.I. DuPont</small>
Internal leakage	246 cm ³ /min (15 in ³ /min) max. @ 210 bar (3000 psi)

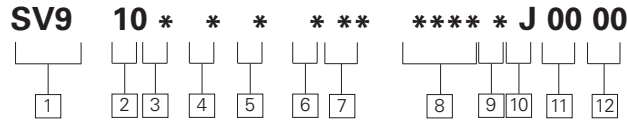
Endurance tested to 1 million cycles at full rated flow and pressure.

Performance Characteristics

Cartridge only

- A** - Port 3 to port 2, port 3 to port 4
- B** - Port 2 to port 1, port 4 to port 1



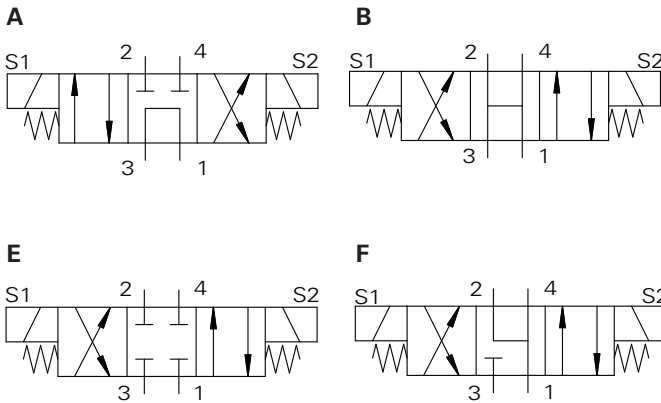


1 Function
SV9 - Solenoid valve

2 Size
10 - 10 size

3 Seal material
N - Buna-N
V - Viton®

4 Spool center condition



7 Port Size†

8 Voltage rating†
0000 - No coil
012D - 12VDC
024D - 24VDC
036D - 36VDC
024A - 24VAC
115A - 115VAC
230A - 230VAC
012B - 12VDC/w diode*
024B - 24VDC/w diode*
 *Optional arc suppression diode.

5 Manual override option

0 - No manual override
M - Manual override
 For valve dimensions with manual override see pages A-152 and A-153.

6 Housing material

0 - Cartridge only
A - Aluminum

9 Connector types†

0 - No coil
G - ISO 4400 DIN 43650
Q - Spade terminals
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

S - Steel

10 Coil series†

0 - No Coil
J - 10 series, 23 W

11 Coil special features†

00 - None

12 Valve special features

00 - None

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Light duty	Aluminum Fatigue rated
00	Cartridge only		
3B	3/8" BSPP	02-179705	
2G	1/4" BSPP		876709
3G	3/8" BSPP		876715
6H	SAE 4		876708
8H	SAE 6		876713
6T	SAE 6	566161	

See section J for housings.

† These model digits are not stamped on the valve.

SV9-10

Dimensions

Dimensions

mm (inch)

Torque cartridge in aluminum or steel housing 34-41 Nm (25-30 ft. lbs).

Valve is shown with "W" coil. See other coils in Section C.

Note

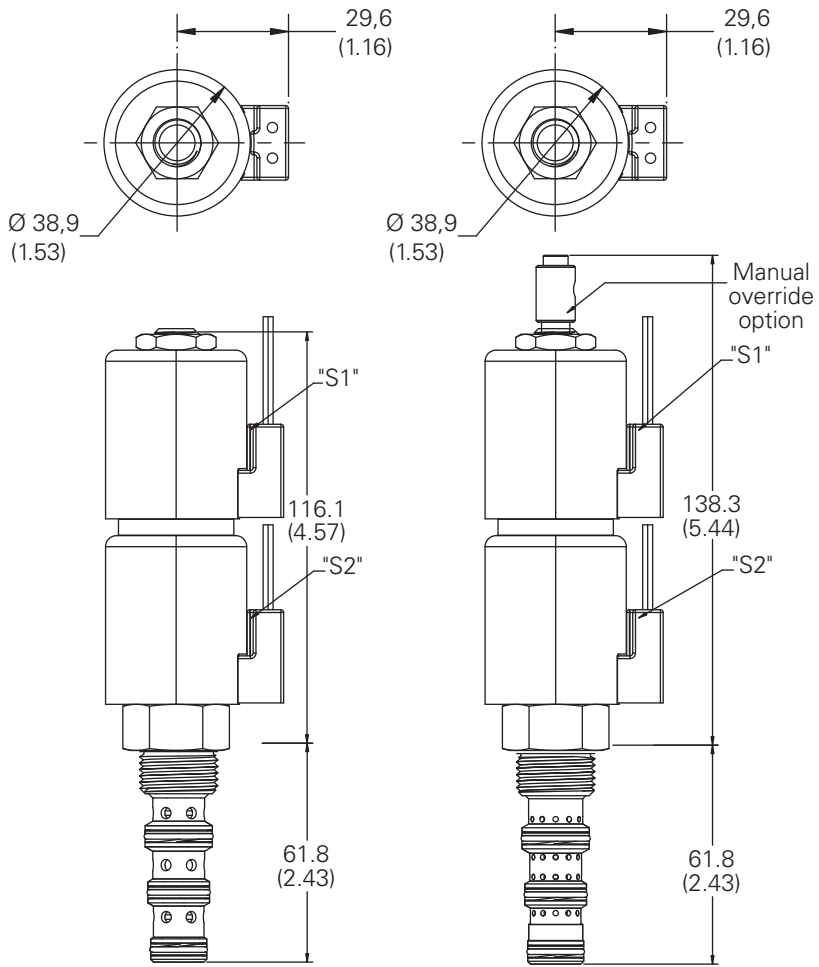
When solenoid valve is ordered as cartridge only, coil nut is included.

When solenoid valve is ordered without coils, it will be supplied with only the nut. The spacer must be ordered separately.

This valve uses the J series, 23 W coil.

SPARE PARTS

Coil nut	565558
Coil spacer	02-179226



WARNING

Maintain 5-8 Nm (4-6 ft. lbs) maximum torque on valve tube nut. Over tightening may cause valve failure.

SRV4-12

Solenoid operated relief valve.

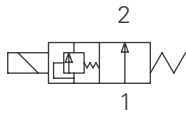
Description

The SRV4-12 is a pilot operated, solenoid relief valve.

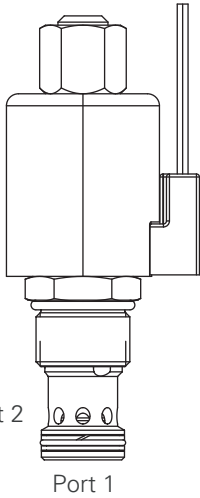
Operation

In its de-energized state, the valve allows flow from port 1 to port 2. In the energized state the valve allows flow from 1 to 2 only when the set pressure is reached.

Functional Symbol



Profile View



RATINGS AND SPECIFICATIONS

Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)

Typical application pressure	250 bar (3600 psi)
Cartridge fatigue pressure (infinite life)	250 bar (3600 psi)
Rated flow	114 L/min (30 USgpm)
Reseat Pressure	More than 80% of cracking pressure
Hysteresis	Less than 3 bar (45 psi)
Overshoot	Less than 20% of max. press. range with flow step of 30 USgpm at pressure rise rate of 100,000 psi/sec.
Repeatability	+/- 1% maximum pressure range
Cavity	C-12-2
Standard housing materials	Aluminum or steel
Temperature range	-40° to 120°C (-40° to 248°F)
Fluids	All general purpose hydraulic fluids such as: MIL-H-5606, SAE 10, SAE 20 etc.
Filtration	Cleanliness code 18/16/13
Weight cartridge only	0.4kg (0.89 lbs)
Seal Kits	02-180095 Buna-N 02-165887 Viton®

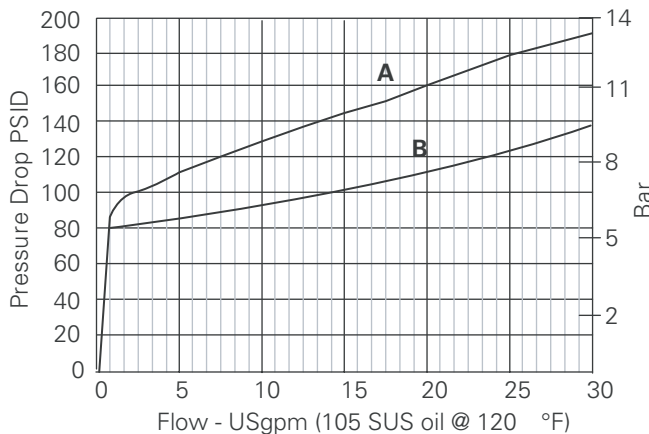
Viton is a registered trademark of E.I. DuPont

Performance characteristics

Cartridge only

SRV De-energized Pressure Drop

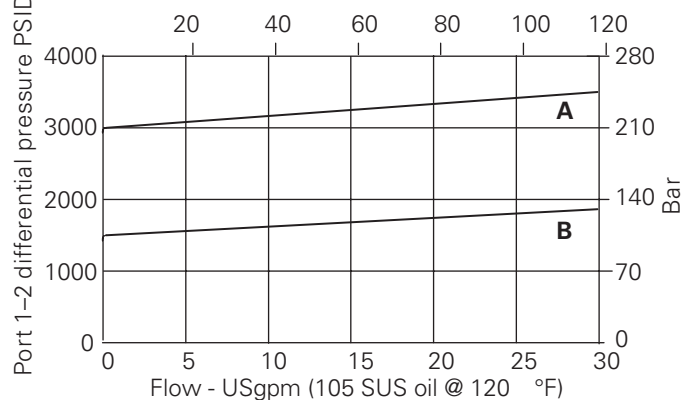
Flow - L/min (21,8 cSt oil @ 49 °C)



A - Normal cavity
B - Undercut cavity

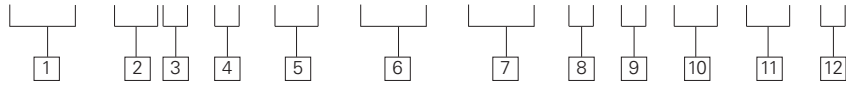
Pressure override

Flow - L/min (21,8 cSt oil @ 49°C)



A - typical pressure override @ 3000 psi setting
B - typical pressure override @ 1500 psi setting

SRV4 - 12 * - * - * - **** - ***** - * - * - 00 - 00 - B**



- 1 Function**
SRV4 - Solenoid valve

- 2 Size**
12 - 12 size

- 3 Seals**
N - Buna-N
V - Viton®

- 4 Valve housing material**
O - Cartridge only
A - Aluminum

5 Port size - Standard cavities. See section J for additional housing options.

CODE	PORT SIZE	HOUSING NUMBER
000	Cartridge only	
10T	SAE 10	02-160640
12T	SAE 12	02-160644
04G	1/2" BSPP	02-161118
06G	3/4" BSPP	02-161117

See section J for housing details.

6 Setting Pressure
50-3600 psi. User requested settings in 3,45 bar (50 psi) steps, coded as in the following examples:
1000 - 70 bar (1000 psi)
1500 - 103 bar (1500 psi)
2000 - 138 bar (2000 psi)

7 Voltage Rating
0000 - No coil
012D - 12VDC
024D - 24VDC
036D - 36VDC
024A - 24VAC
115A - 115VAC
230A - 230VAC
012B - 12VDC/w diode
024B - 24VDC/w diode

8 Connector types
0 - No coil
G - ISO 4400 DIN 43650
W - Leadwire
N - Deutsch (DC only)
Y - Amp JR (DC only)
D - Metripack 150 male (DC only)
J - Metripack 280 male (DC only)

9 Coil series
0 - No coil
J - 26 W, 10 series coil
 For coil dimensions see Section C.

10 Coil special features
00 - None

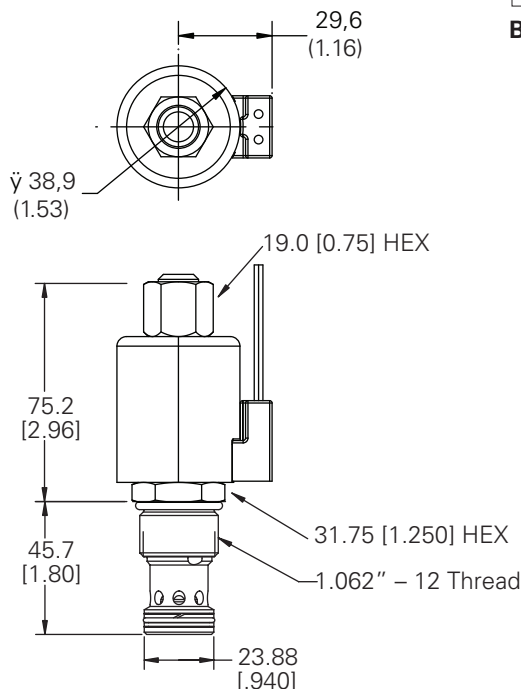
11 Special features
00 - None
 (Only required if valve has special features, omitted if "00.")


12 Design code
B - Current design

Dimensions

mm (inch)

Torque cartridge in housing
A - 81-95 Nm (60-70 ft. lbs)
S - 102-115 Nm (75-85 ft. lbs)



WARNING
 Aluminum housings can be used for pressures up to 210 bar (3000psi). Steel housings **must** be used for operating pressures **above** 210 bar (3000 psi).

Manual Override Options

Push type overrides
(type P and S)

Note

Manual override is available on all solenoid cartridge valves, except SBV series valves.



WARNING

The manual override option is intended for emergency use, not for continuous duty operation.

Manual override "S" screw type

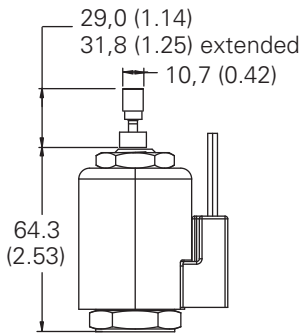
To override:

1. Turn the override button clockwise until it stops.

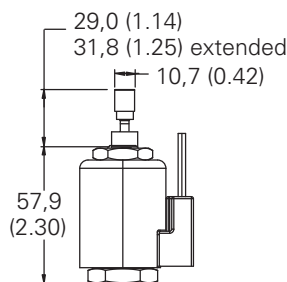
2. The override button will remain activated until the override button is turned counterclockwise.

To release:

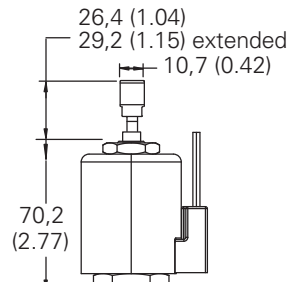
1. Turn the override button counterclockwise until it stops.



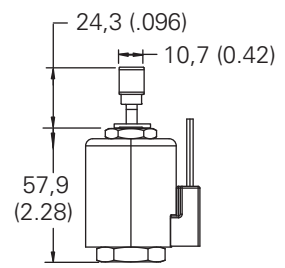
8-Series – 210 bar valves



8-Series – 350 bar valves



10, 12, 16, 20-Series – 210 bar valves



10, 12, 16, 20-Series – 350 bar valves

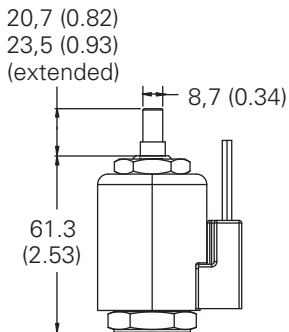
Manual override "P" push type

To override:

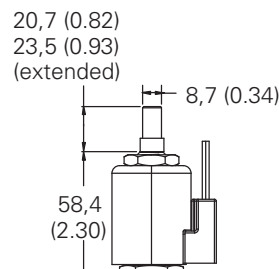
1. Push the override button

to stop and hold.

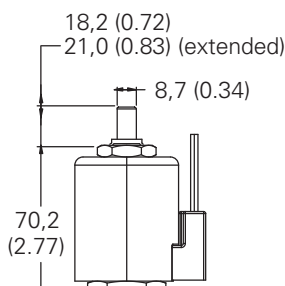
To release:



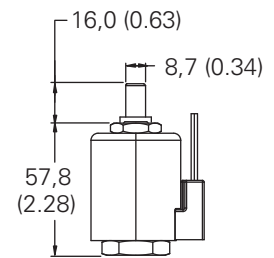
8-Series – 210 bar valves



8-Series – 350 bar valves



10, 12, 16, 20-Series – 210 bar valves



10, 12, 16, 20-Series – 350 bar valves

Manual override "P" & "S" options are available on the following models:

SV3-10-OS-0-00	SV3-20-OS-0-00	SV3-12-OP-0-00	SV15-10-OP/OS-0-00
SV5-10-OS-0-00	SV5-8-OS-0-00	SV3-16-OP-0-00	SV13-12-OP/OS-0-00
SV7-10-4S-0-00	SV3-10-OP-0-00	SV3-20-OP-0-00	SV13-16-OP/OS-0-00
SV4-10-3S-0-00	SV5-10-OP-0-00	SV5-8-OP-0-00	SV13-20-OP/OS-0-00
SV3-12-OS-0-00	SV7-10-4P-0-00	SV15-8-OP/OS-0-00	
SV3-16-OS-0-00	SV4-10-3P-0-00	SV13-10-OP/OS-0-00	

Manual Override Options

Pull type overrides
(type M and R)

Note

Manual override is available on all solenoid cartridge valves, except SBV series valves.



WARNING

The manual override option is intended for emergency use, not for continuous duty operation.

A

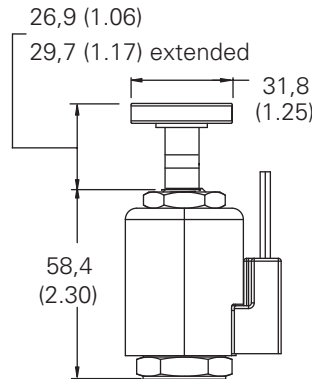
Manual override "M" pull type

To override:

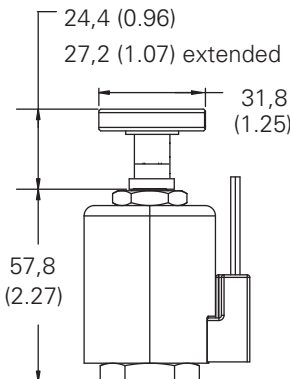
1. Pull up knob until the override tooth is completely out of the detent base.
2. Turn the knob clockwise until the override tooth is resting securely on top of the detent base slot.

To release:

1. Pull up knob slightly from surface.
2. Turn the knob clockwise until the override tooth is securely engaged in slot of the detent base.

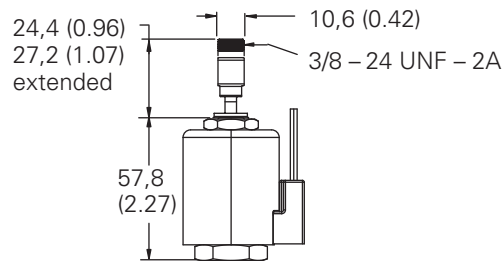


8-Series – 210 bar and 350 bar values



10, 12, 16, 20-Series – 210 bar and 350 bar values

Manual override "R" cable type (not available on size 8 models)



Manual override "M" options are available on the following models:

SV1-10-3M-0-00	SV4-10-CM-0-00	SV4-8-OM-0-00	SV11-8-3M-0-00	SV11-10-3M-0-00
SV1-10-4M-0-00	SV4-10-OM-0-00	SV1-8-3M-0-00	SV11-8-4M-0-00	SV11-10-4M-0-00
SV1-10-CM-0-00	SV5-10-4M-0-00	SV4-8-3M-0-00	SV12-8-4M-0-00	SV13-12-CM-0-00
SV2-10-4M-0-00	SV5-8-CM-0-00	SV1-8-4M-0-00	SV11-10-CM-0-00	SV13-16-CM-0-00
SV2-10-CM-0-00	SV4-8-CM-0-00	SV2-8-4M-0-00	SV12-10-CM-0-00	SV13-20-CM-0-00
SV3-10-4M-0-00	SV3-12-CM-0-00	SV15-8-CM-0-00	SV13-10-CM-0-00	
SV3-10-CM-0-00	SV1-16-CM-0-00	SV14-8-CM-0-00	SV14-10-CM-0-00	
SV4-10-4M-0-00	SV2-20-CM-0-00	SV14-8-OM-0-00	SV14-10-OM-0-00	

Manual override "R" options are available on the following models:

SV1-10-3R-0-00	SV2-10-4R-0-00	SV3-10-CR-0-00	SV4-10-OR-0-00	SV1-16-CR-0-00
SV1-10-4R-0-00	SV2-10-CR-0-00	SV4-10-4R-0-00	SV5-10-4R-0-00	SV2-20-CR-0-00
SV1-10-CR-0-00	SV3-10-4R-0-00	SV4-10-CR-0-00	SV3-12-CR-0-00	