

Алматы (7273)495-231  
Ангарск (3955)60-70-56  
Архангельск (8182)63-90-72  
Астрахань (8512)99-46-04  
Барнаул (3852)73-04-60  
Белгород (4722)40-23-64  
Благовещенск (4162)22-76-07  
Брянск (4832)59-03-52  
Владивосток (423)249-28-31  
Владикавказ (8672)28-90-48  
Владимир (4922)49-43-18  
Волгоград (844)278-03-48  
Вологда (8172)26-41-59  
Воронеж (473)204-51-73  
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06  
Ижевск (3412)26-03-58  
Иркутск (395)279-98-46  
Казань (843)206-01-48  
Калининград (4012)72-03-81  
Калуга (4842)92-23-67  
Кемерово (3842)65-04-62  
Киров (8332)68-02-04  
Коломна (4966)23-41-49  
Кострома (4942)77-07-48  
Краснодар (861)203-40-90  
Красноярск (391)204-63-61  
Курск (4712)77-13-04  
Курган (3522)50-90-47  
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13  
Москва (495)268-04-70  
Мурманск (8152)59-64-93  
Набережные Челны (8552)20-53-41  
Нижний Новгород (831)429-08-12  
Новокузнецк (3843)20-46-81  
Ноябрьск (3496)41-32-12  
Новосибирск (383)227-86-73  
Омск (3812)21-46-40  
Орел (4862)44-53-42  
Оренбург (3532)37-68-04  
Пенза (8412)22-31-16  
Петрозаводск (8142)55-98-37  
Псков (8112)59-10-37  
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15  
Рязань (4912)46-61-64  
Самара (846)206-03-16  
Санкт-Петербург (812)309-46-40  
Саратов (845)249-38-78  
Севастополь (8692)22-31-93  
Саранск (8342)22-96-24  
Симферополь (3652)67-13-56  
Смоленск (4812)29-41-54  
Сочи (862)225-72-31  
Ставрополь (8652)20-65-13  
Сургут (3462)77-98-35  
Сыктывкар (8212)25-95-17  
Тамбов (4752)50-40-97  
Тверь (4822)63-31-35

Тольятти (8482)63-91-07  
Томск (3822)98-41-53  
Тула (4872)33-79-87  
Тюмень (3452)66-21-18  
Ульяновск (8422)24-23-59  
Улан-Удэ (3012)59-97-51  
Уфа (347)229-48-12  
Хабаровск (4212)92-98-04  
Чебоксары (8352)28-53-07  
Челябинск (351)202-03-61  
Череповец (8202)49-02-64  
Чита (3022)38-34-83  
Якутск (4112)23-90-97  
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

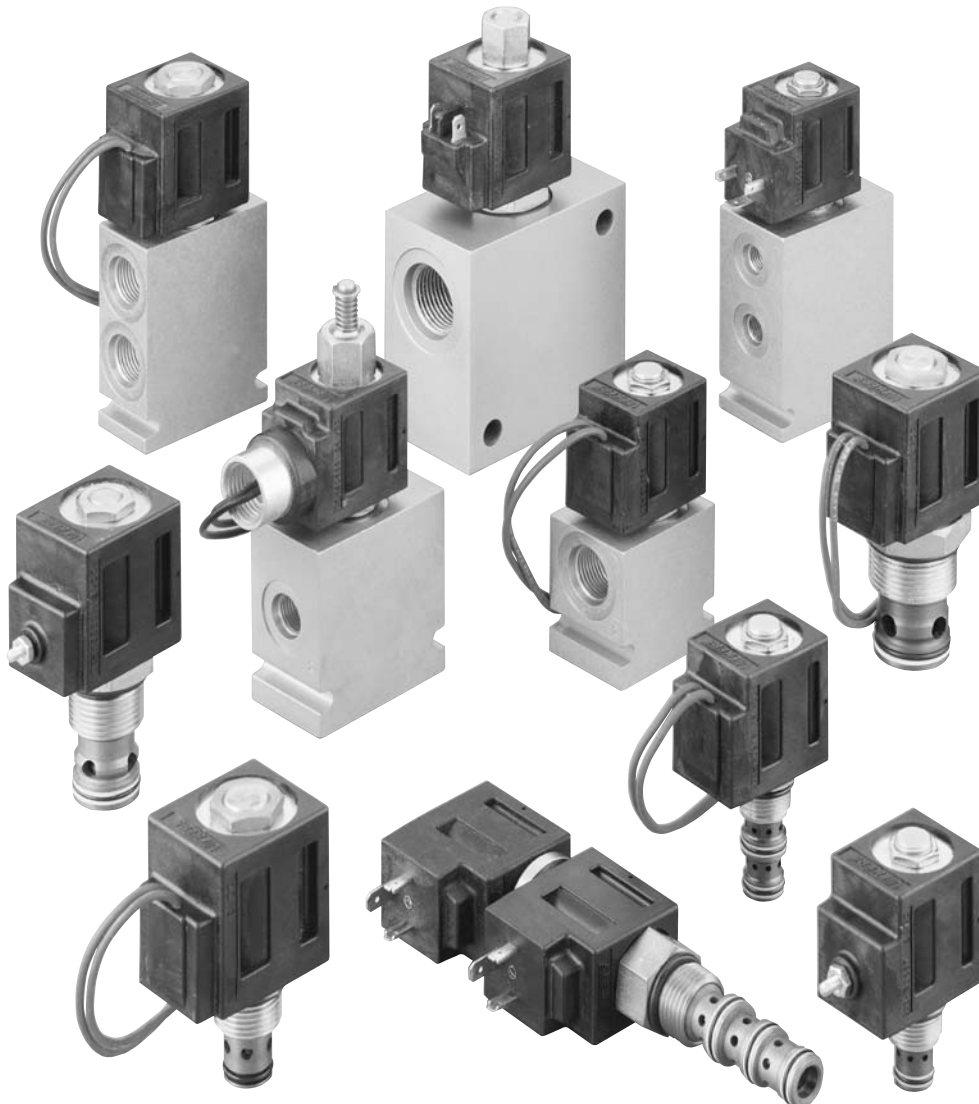
<https://vickers.nt-rt.ru> || [vsh@nt-rt.ru](mailto:vsh@nt-rt.ru)

**EATON**

**Vickers**

## 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
Solenoid Valves - Section Overview .....			A-4
<b>2-way, 2-position, Normally Closed, Poppet Type</b>			
SV5-8-C/CM .....	210 (3000).....	23 (6) .....	A-6
SV15-8-C/CM.....	350 (5000).....	37 (10) .....	A-8
SBV11-8-C .....	350 (5000).....	60 (15) .....	A-10
SBV12-8-C .....	350 (5000).....	1 (0.25) .....	A-12
SV1-10-C/CM/CR .....	210 (3000).....	45 (12) .....	A-14
SV11-10-C/CM .....	350 (5000).....	45 (12) .....	A-16
SBV11-10-C .....	350 (5000).....	76 (20) .....	A-18
SV2-10-C/CM/CR .....	210 (3000).....	23 (6) .....	A-20
SV12-10-C/CM/CR .....	350 (5000).....	23 (6) .....	A-22
SV3-10-C/CM/CR .....	210 (3000).....	45 (12) .....	A-24
SV13-10-C/CM/CR .....	350 (5000).....	45 (12) .....	A-26
SV3-12-C/CM/CR.....	210 (3000).....	114 (30) .....	A-28
SV13-12-C/CM/CR .....	350 (5000).....	114 (30) .....	A-30
SBV11-12-C .....	350 (5000).....	114 (30) .....	A-32
SV1-16-C/CM/CR .....	210 (3000).....	132 (35) .....	A-34
SV13-16-C/CM/CR .....	350 (5000).....	132 (35) .....	A-36
SV2-20-C/CM/CR.....	210 (3000).....	227 (60) .....	A-38
SV13-20-C/CM/CR.....	350 (5000).....	227 (60) .....	A-40
<b>2-way, 2-position, Normally Closed, Spool Type</b>			
SV4-8-C/CM .....	210 (3000).....	11 (3) .....	A-42
SV14-8-C/CM.....	350 (5000).....	11 (3) .....	A-44
SV4-10-C/CM/CR .....	210 (3000).....	23 (6) .....	A-46
SV14-10-C/CM/CR .....	350 (5000).....	23 (6) .....	A-48
<b>2-way 2-position, Normally Open, Poppet Type</b>			
SV5-8-O/OP/OS.....	210 (3000).....	23 (6) .....	A-50
SV15-8-O/OP/OS .....	350 (5000).....	37 (10) .....	A-52
SBV11-8-O .....	350 (5000).....	60 (15) .....	A-54
SV3-10-O/OP/OS .....	210 (3000).....	45 (12) .....	A-56
SV13-10-O/OP/OS .....	350 (5000).....	45 (12) .....	A-58
SV5-10-O/OP/OS .....	310 (3000).....	45 (12) .....	A-60
SV15-10-O/OP/OS .....	350 (5000).....	45 (12) .....	A-62
SBV11-10-O/OP/OS .....	350 (5000).....	76 (20) .....	A-64
SV3-12-O/OP/OS .....	210 (3000).....	114 (30) .....	A-66
SV13-12-O/OP/OS .....	350 (5000).....	114 (30) .....	A-68
SBV11-12-O/OP/OS .....	350 (5000).....	114(30) .....	A-70
SV3-16-O/OP/OS.....	210 (3000).....	132 (35) .....	A-72

# Solenoid Valves

Section Contents (cont.)



<b>Model</b>	<b>Typical Application Pressure bar (psi)</b>	<b>Rated Flow L/min (USgpm)</b>	<b>Page</b>
SV13-16-O/OP/OS .....	350 (5000).....	132 (35) .....	A-74
SV3-20-O/OP/OS .....	210 (3000).....	227 (60) .....	A-76
SV13-20-O/OP/OS .....	350 (5000).....	227 (60) .....	A-78
<b>2-way, 2-position, Normally Open, Spool Type</b>			
SV4-8-O/OM .....	210 (3000).....	13 (4) .....	A-80
SV14-8-O/OM .....	350 (5000).....	13 (4) .....	A-82
SV4-10-O/OM/OR .....	210 (3000).....	23 (6) .....	A-84
SV14-10-O/OM/OR .....	350 (5000).....	23 (6) .....	A-86
<b>3-way 2-position, Spool Type</b>			
SV1-8-3/3M .....	210 (3000).....	11 (3) .....	A-88
SV11-8-3/3M .....	350 (5000).....	11 (3) .....	A-90
SV4-8-3/3M .....	210 (3000).....	13 (4) .....	A-92
SV1-10-3/3M/3R .....	210 (3000).....	23 (6) .....	A-94
SV11-10-3/3M/3R .....	350 (5000).....	23 (6) .....	A-96
SV4-10-3/3P/3S .....	210 (3000).....	23 (6) .....	A-98
<b>4-way 2-position, Spool Type</b>			
SV1-8-4/4M .....	210 (3000).....	11 (3) .....	A-100
SV11-8-4/4M .....	350 (5000).....	11 (3) .....	A-102
SV2-8-4/4M .....	210 (3000).....	13 (4) .....	A-104
SV12-8-4/4M .....	350 (5000).....	13 (4) .....	A-106
SV1-10-4/4M/4R .....	210 (3000).....	23 (6) .....	A-108
SV11-10-4/4M/4R .....	350 (5000).....	23 (6) .....	A-110
SV2-10-4/4M/4R .....	210 (3000).....	23 (6) .....	A-112
SV3-10-4/4M/4R .....	210 (3000).....	23 (6) .....	A-114
SV4-10-4/4M/4R .....	210 (3000).....	23 (6) .....	A-116
SV5-10-4/4M/4R .....	210 (3000).....	23 (6) .....	A-118
SV7-10-4/4P/4S .....	210 (3000).....	17 (5) .....	A-120
<b>4-way 3-position, Spool Type</b>			
SV9-8*0/8*M .....	210 (3000) (NEW) .....	13 (3.5) .....	A-122
SV9-8 model code and dimensions .....			A-126
SV9-10*0/10*M.....	210 (3000) Upgraded .....	23 (6) .....	A-128
SV9-10 model codes and dimensions .....			A-132
<b>Manual Override Options</b>			
Manual override, type P, S .....			A-134
Manual override, type M, K .....			A-135

# 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

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

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.

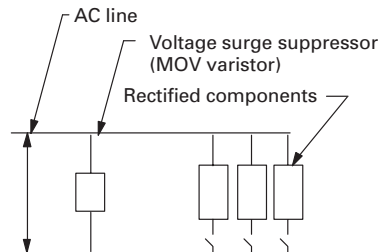
Protection is simple and inexpensive. It consists of installing a commercially available voltage surge suppressor like the General Electric MOV varistor V130LA20A for 115 volts AC or the V250LA20A for 230 volts AC, across the AC line

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.

#### Note

Solenoid valve coil details are shown in section C.

### 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

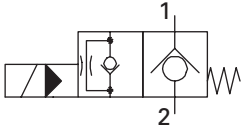
The SV5-8-C is a 2-way, 2-position, poppet type, pilot operated, normally closed, solenoid valve. This valve is used in applications requiring low leakage, such as single acting cylinder applications.

## Operation

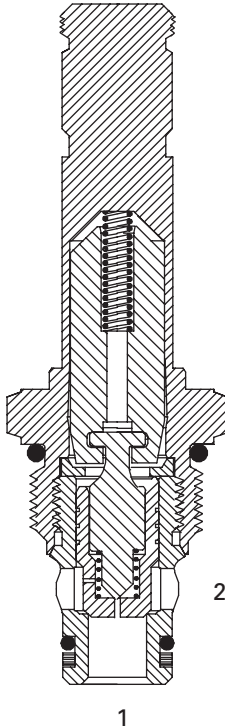
In the de-energized position, the SV5-8-C blocks flow from port 2 to port 1, and free flow is allowed from port 1 to port 2.

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



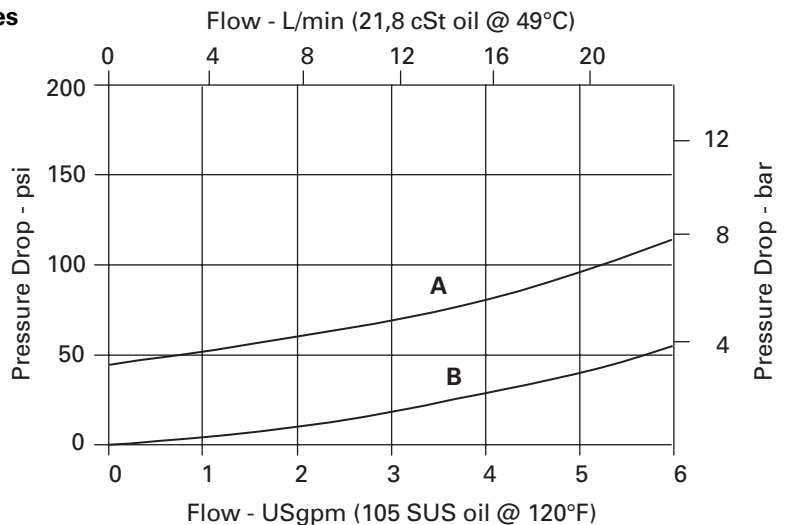
## RATINGS AND SPECIFICATIONS

*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

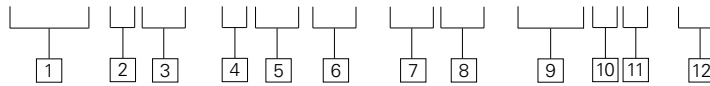
Cartridge only



**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-135.

---

- 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	120A - 120VAC
24D - 24VDC	240A - 240VAC
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  
P - 1/2" NPT conduit port w/leadwire  
Q - Spade terminals  
W - Leadwire  
N - Deutsch (DC only)  
Y - Amp JR (DC only)

- 11 Coil series**  
S - 8 series, 16 W  
For coil part numbers and dimensions see page C-3.

- 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)

Valve is shown with "W" coil. See other coils on page C-3.

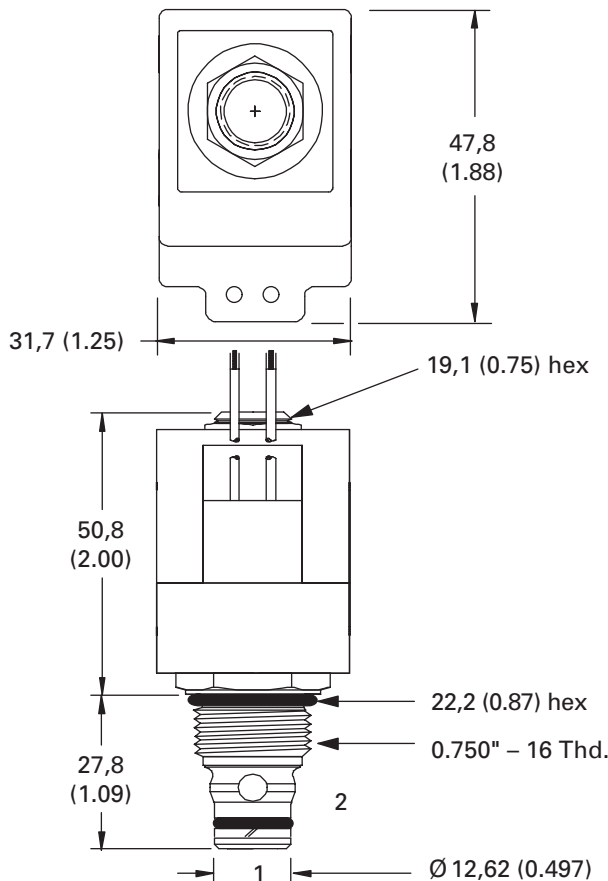
**Note**

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

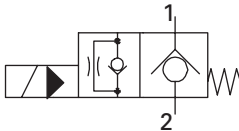
The SV15-8-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in cartridge solenoid valve.

## Operation

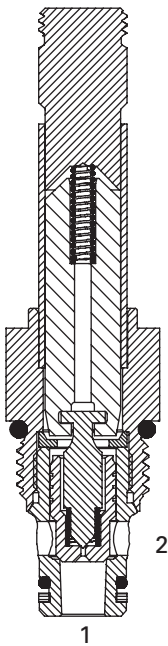
In the de-energized position, this valve blocks flow from port 2 to port 1 and free flow is allowed from port 1 to port 2.

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



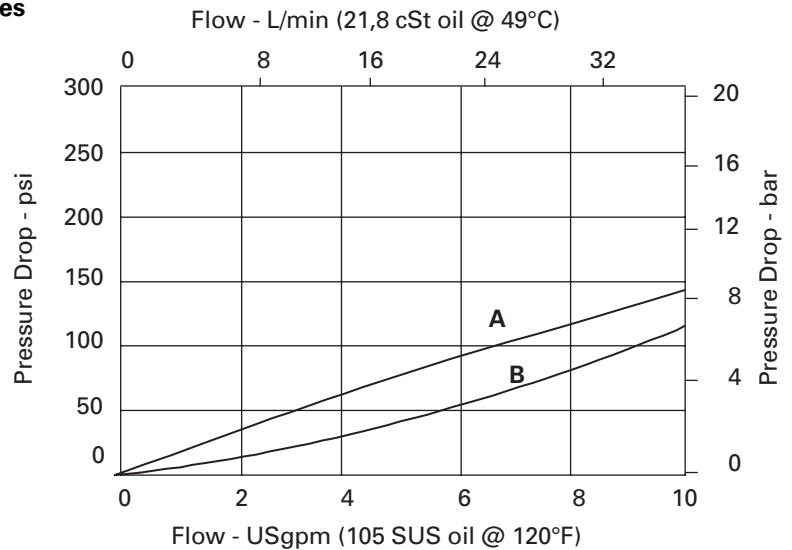
## RATINGS AND SPECIFICATIONS

*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®) <small>Viton is a registered trademark of E.I. DuPont</small>

## Pressure Drop Curves

Cartridge only

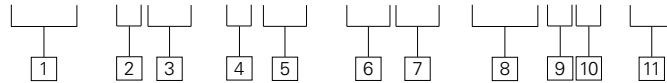


**A** - Port 1 to port 2

**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-135.

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

**7 Port Size**

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

See section J for housing details.

**8 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**10 Coil series**  
**P** - 8 series, 20 W  
 For coil part numbers and dimensions see page C-4.

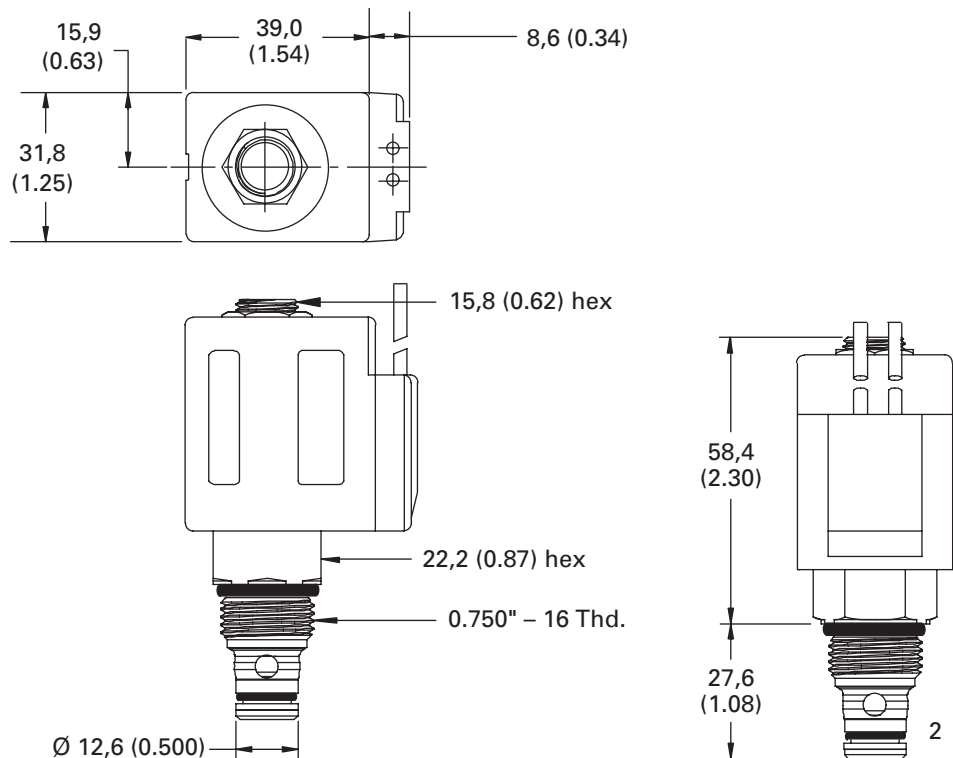
**11 Special features**  
**00** - None  
 (Only required if valve has special features, omitted if "00.")

**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.



# SBV11-8-C

Bi-directional, normally closed solenoid valve

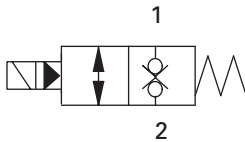
## Description

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

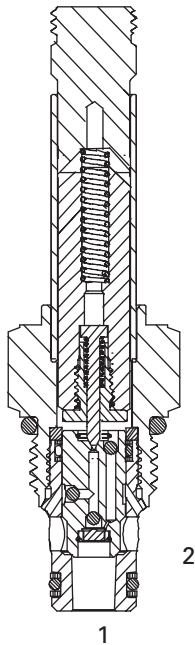
## Operation

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



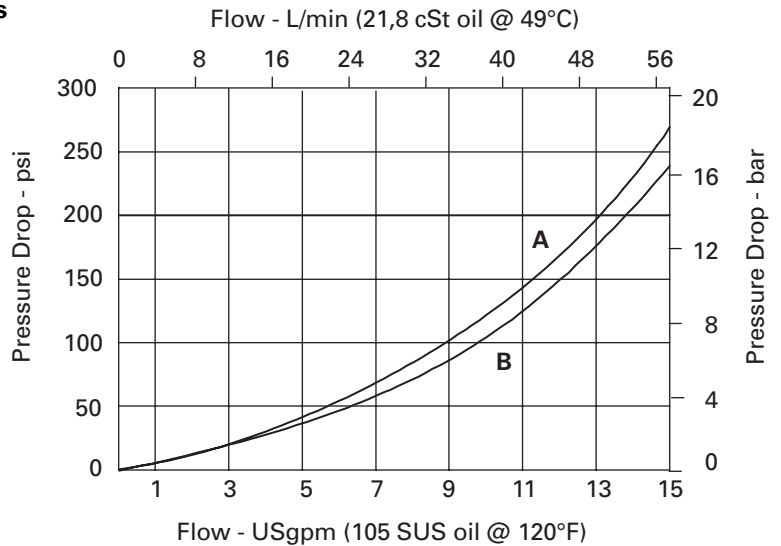
## RATINGS AND SPECIFICATIONS

*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

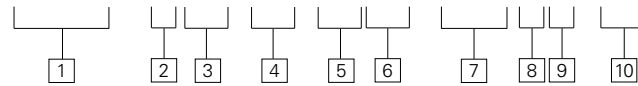
## Pressure Drop Curves

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

**6 Port Size**

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

See section J for housing details.

**7 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**8 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**9 Coil series**  
**P** - 8 series, 20 W  
 For coil part numbers and dimensions see page C-4.

**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.

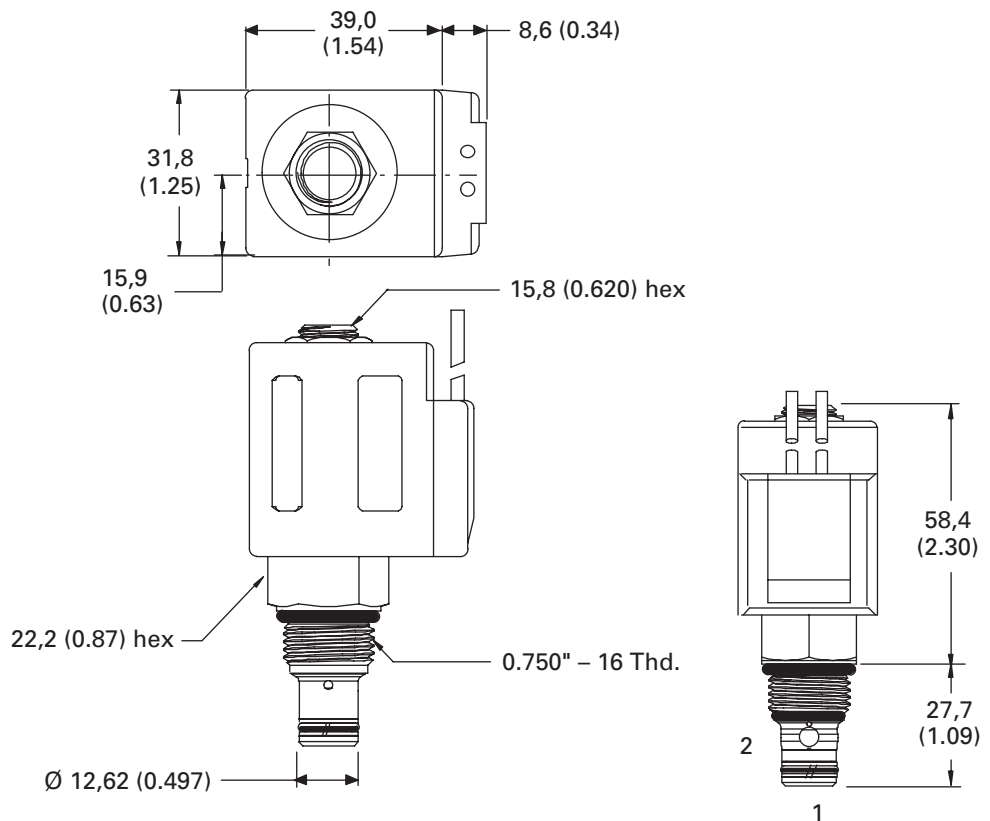


**WARNING**

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



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)

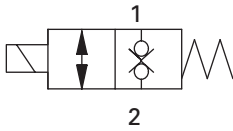
## Description

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

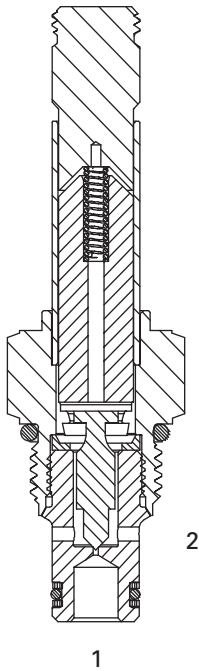
## Operation

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



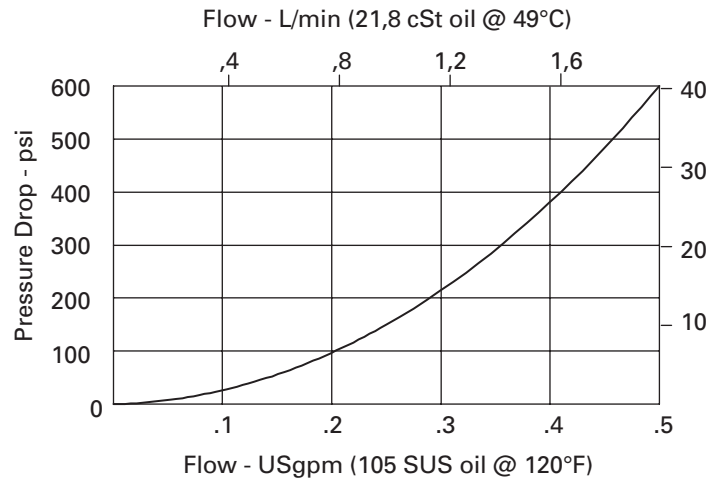
## RATINGS AND SPECIFICATIONS

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

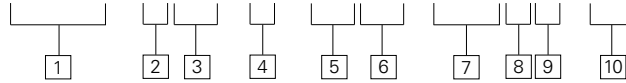
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	1 L/min (0.25 USgpm)
Internal leakage, port 1 to port 2 and port 2 to port 1	5 drops/min. max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° to 212°F)
Coil 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
<b>0</b>	Cartridge only		
<b>2G</b>	1/4" BSPP	02-160727	02-160733
<b>3G</b>	3/8" BSPP	02-160728	02-160734
<b>4T</b>	SAE 4	02-160730	02-160736
<b>6T</b>	SAE 6	02-160731	02-160737
<b>8T</b>	SAE 8	02-160732	02-160738

See section J for housing details.

**7 Voltage rating**

**00** - No coil  
**12D** - 12VDC  
**24D** - 24VDC  
**36D** - 36VDC  
**24A** - 24VAC  
**120A** - 120VAC  
**240A** - 240VAC  
**12B** - 12VDC/w diode\*  
**24B** - 24VDC/w diode\*

\*Optional arc suppression diode.

**8 Connector types**

**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**9 Coil series**

**P** - 8 series, 20 W

For coil part numbers and dimensions see page C-4.

**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.



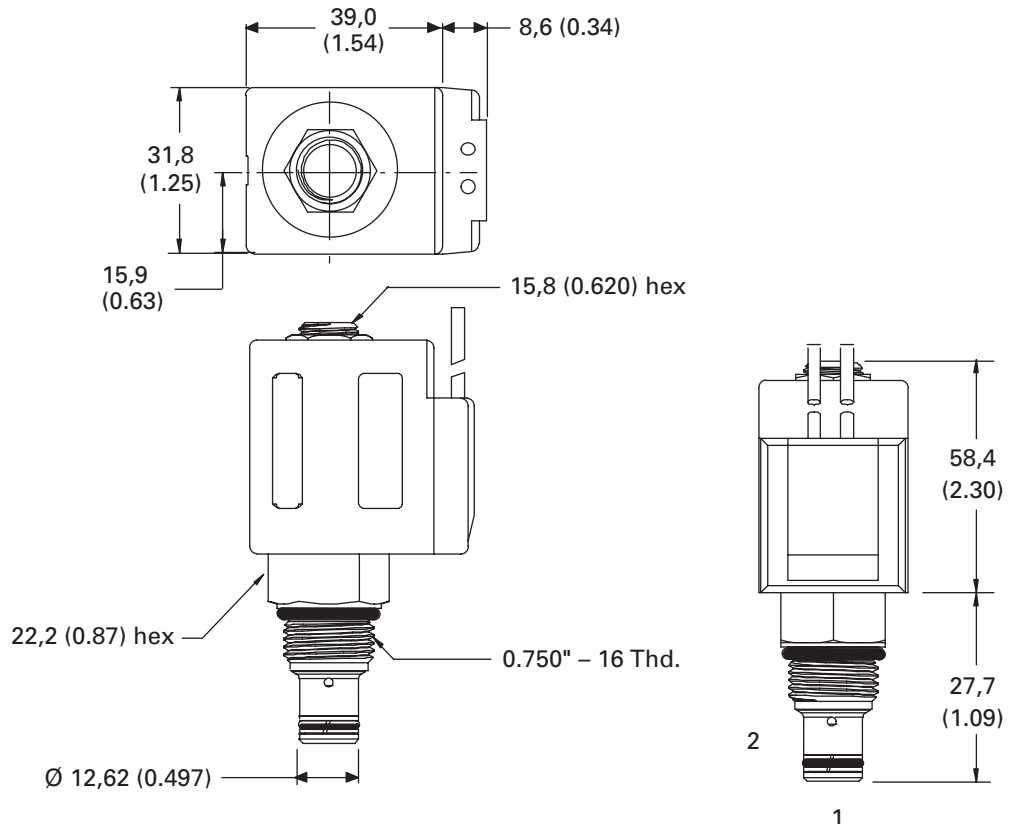
**WARNING**

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

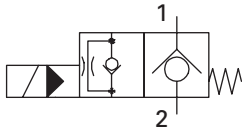
The SV1-10-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in cartridge solenoid valve.

## Operation

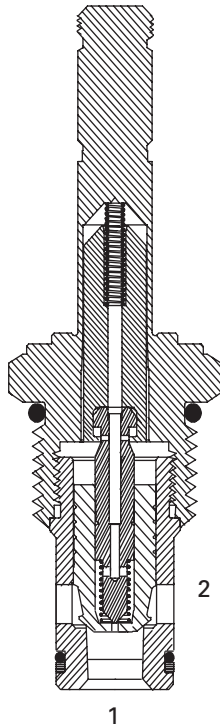
In the de-energized position, this valve blocks flow from port 2 to port 1 and free flow is allowed from port 1 to port 2.

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



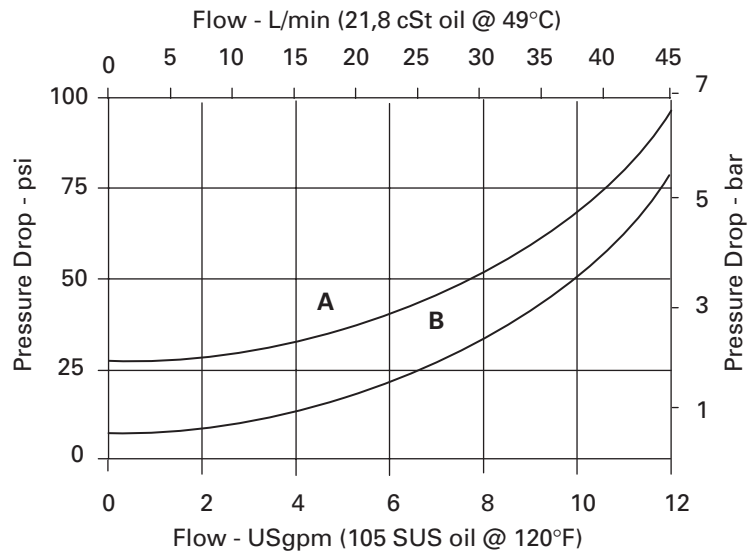
## RATINGS AND SPECIFICATIONS

*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

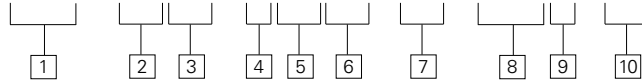
Cartridge only



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

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

**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 Valve housing material**

**Blank** - No manual override  
**M** - Knob type  
**R** - Cable type

For valve dimensions with manual override option installed see page A-135.

**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
<b>0</b>	Cartridge only	
<b>3B</b>	3/8" BSPP	02-175462
<b>6T</b>	SAE 6	566151
<b>2G</b>	1/4" BSPP	876702
<b>3G</b>	3/8" BSPP	876703
<b>6H</b>	SAE 6	876700
<b>8H</b>	SAE 8	876701

See section J for housing details.

**8 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**

**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

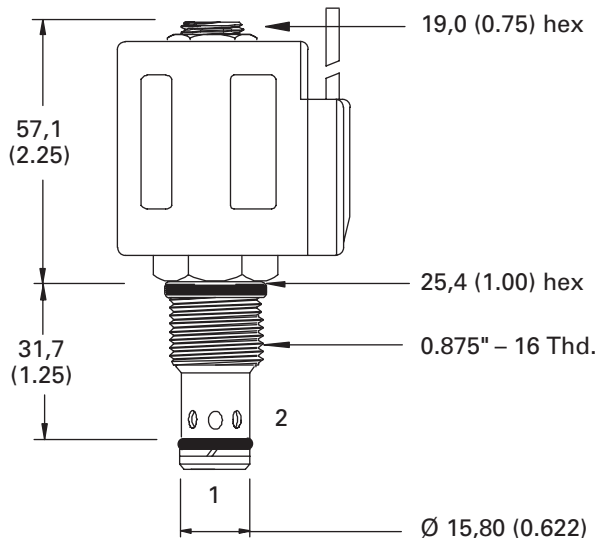
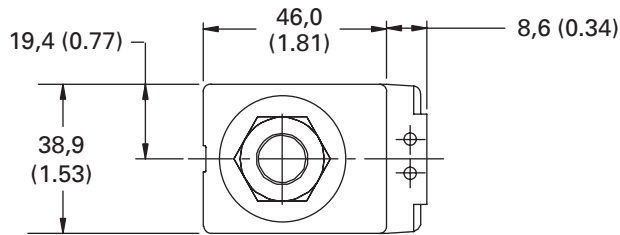
For coil part numbers and dimensions see page C-5.

**10 Special features**

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

**Note**

Use 10 series, 20 W coils with this solenoid valve.



# SV11-10-C/CM

Poppet type, normally closed solenoid valve, 350 bar

## Description

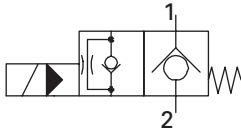
The SV11-10-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in cartridge solenoid valve.

## Operation

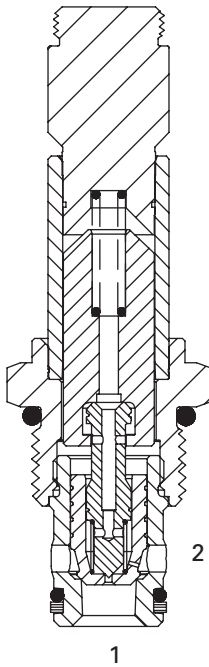
In the de-energized position, this valve blocks flow from port 2 to port 1 and free flow is allowed from port 1 to port 2.

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



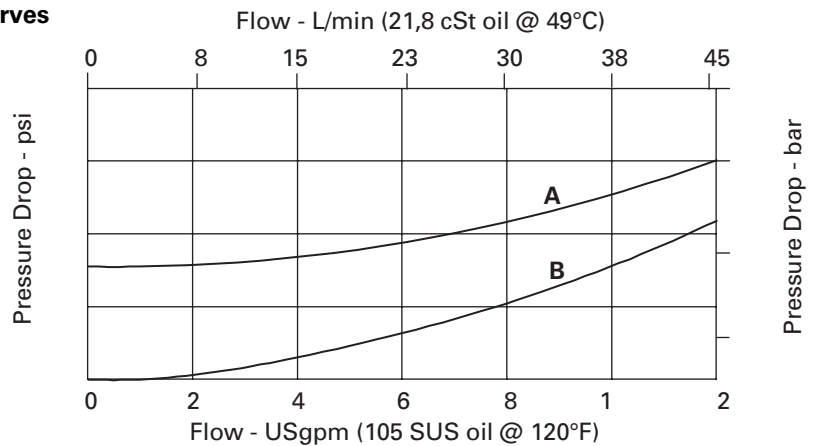
## RATINGS AND SPECIFICATIONS

*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®) <small>Viton is a registered trademark of E.I. DuPont</small>

## Pressure Drop Curves

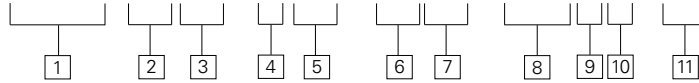
Cartridge only



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



**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-135.

- 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          | 02-160100      |
| 8T   | SAE 8          | 02-160101      |
- See section J for housing details.

- 8 Voltage rating**
- |              |                      |
|--------------|----------------------|
| 00 - No coil | 24A - 24VAC          |
| 12D - 12VDC  | 120A - 120VAC        |
| 24D - 24VDC  | 240A - 240VAC        |
| 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  
P - 1/2" NPT conduit port w/leadwire  
Q - Spade terminals  
W - Leadwire  
N - Deutsch (DC only)  
Y - Amp JR (DC only)

---

  - 10 Coil series**  
H - 10 series, 26 W
- For coil part numbers and dimensions see page C-6.

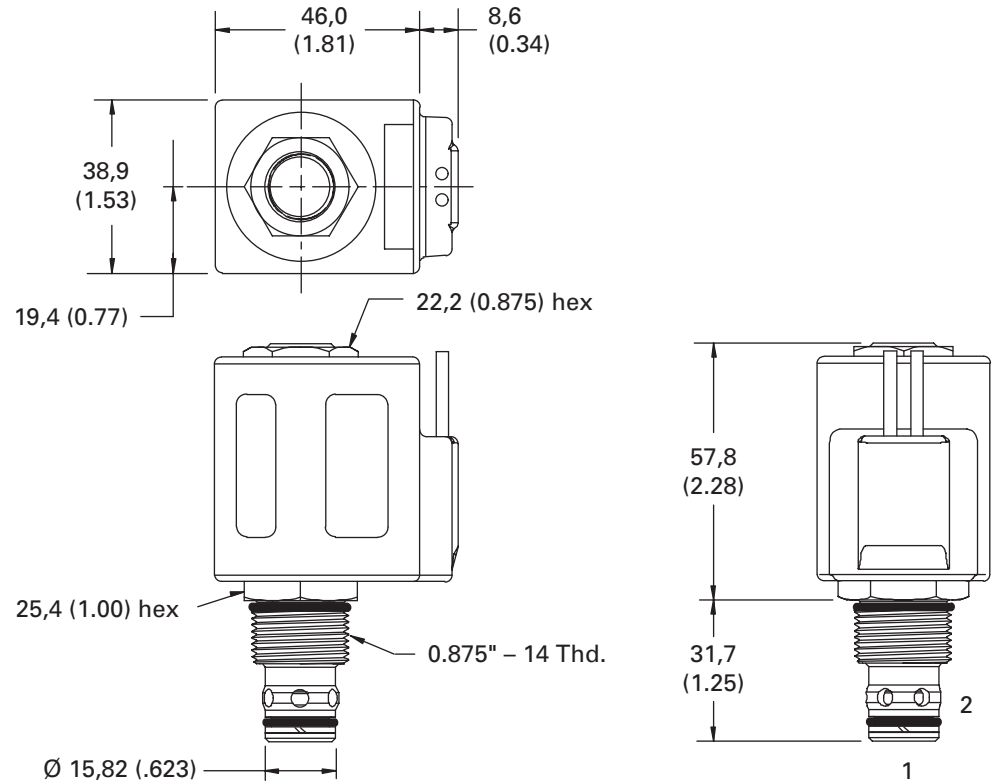
- 11 Special features**  
00 - None  
(Only required if valve has special features, omitted if "00.")

**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.



# SBV11-10-C

Bi-directional, normally closed solenoid valve

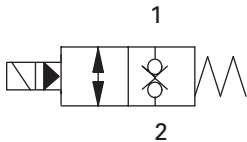
## Description

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

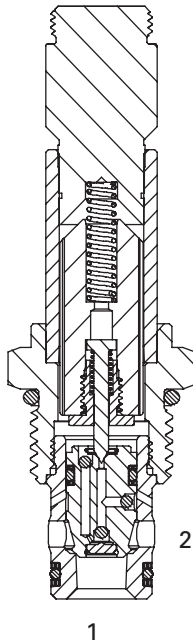
## Operation

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



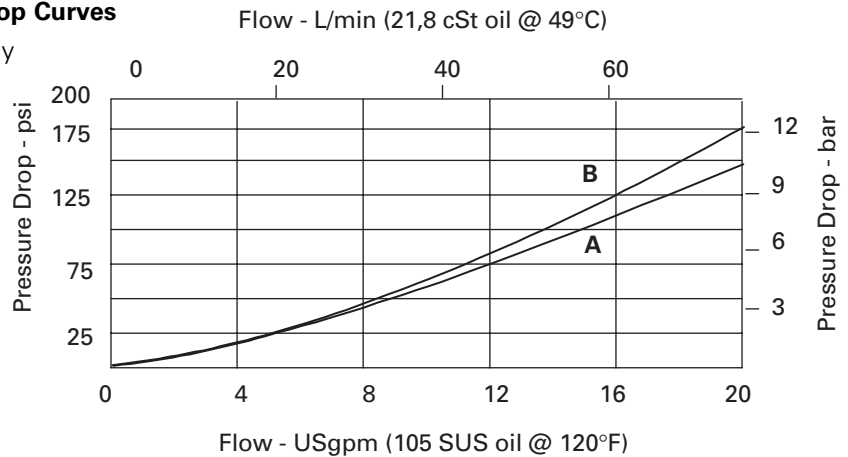
## RATINGS AND SPECIFICATIONS

*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), 566927 (Viton®) Viton is a registered trademark of E.I. DuPont

## Pressure Drop Curves

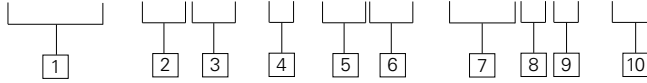
Cartridge only



**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.

- 8 Connector types**  
Blank - No coil  
G - ISO 4400 DIN 43650  
P - 1/2" NPT conduit port w/leadwire  
Q - Spade terminals  
W - Leadwire  
N - Deutsch (DC only)  
Y - Amp JR (DC only)

- 9 Coil series**  
H - 10 series, 26 W  
For coil part numbers and dimensions see page C-6.

- 7 Voltage rating**  
00 - No coil  
12D - 12VDC  
24D - 24VDC  
36D - 36VDC  
24A - 24VAC  
120A - 120VAC  
240A - 240VAC  
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

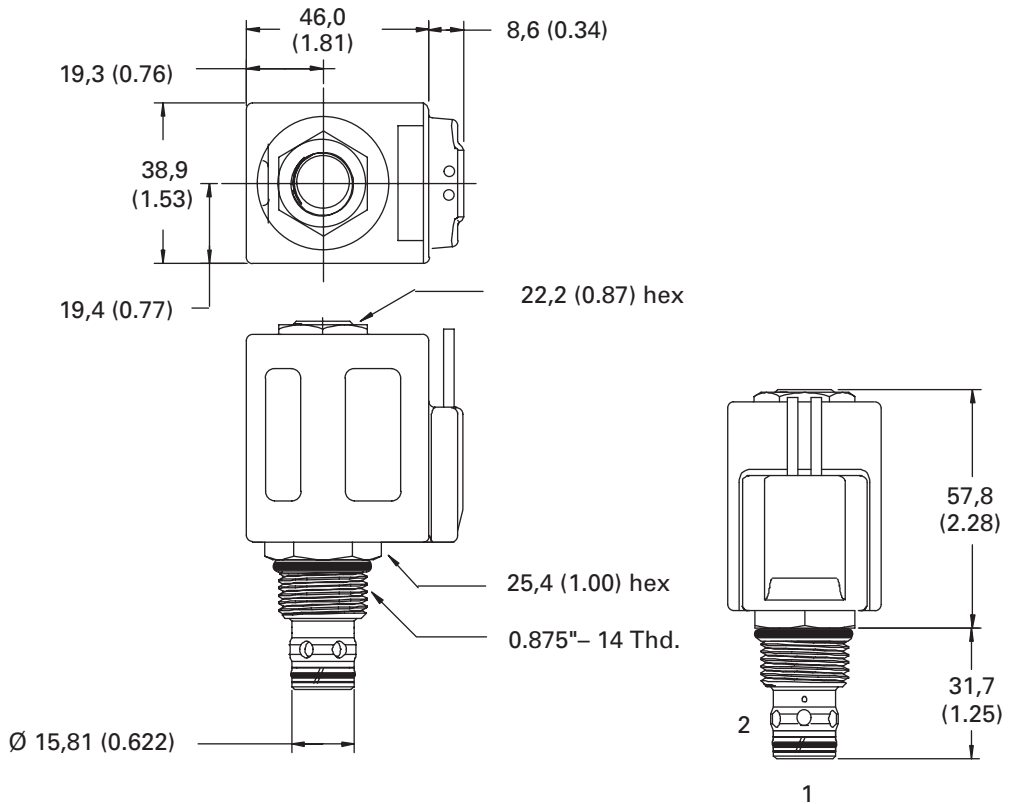
- A - 47-54 Nm (35-40 ft. lbs)
- S - 68-75 Nm (50-55 ft. lbs)

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

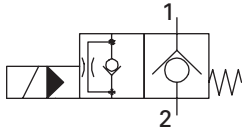
The SV2-10-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in cartridge solenoid valve.

## Operation

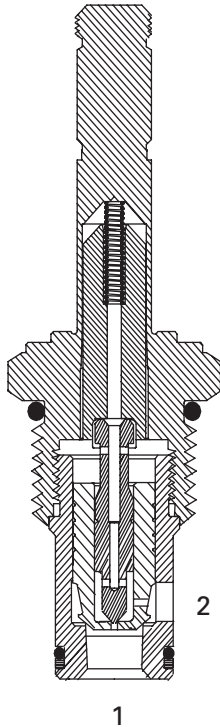
In the de-energized position, this valve blocks flow from port 2 to port 1 and free flow is allowed from port 1 to port 2.

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



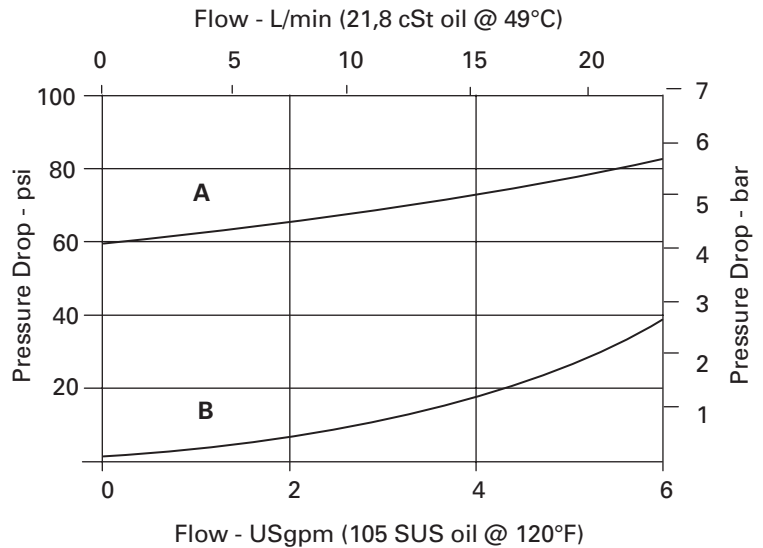
## RATINGS AND SPECIFICATIONS

*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

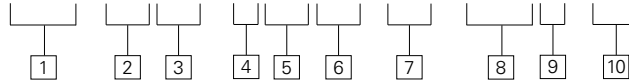
## Pressure Drop Curves

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 Valve housing material**  
**Blank** - No manual override  
**M** - Knob type  
**R** - Cable type  
 For valve dimensions with manual override option installed see page A-135.

**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
<b>0</b>	Cartridge only	
<b>3B</b>	3/8" BSPP	02-175462*
<b>2G</b>	1/4" BSPP	876702
<b>3G</b>	3/8" BSPP	876703
<b>6T</b>	SAE 6	566151*
<b>6H</b>	SAE 6	876700
<b>8H</b>	SAE 8	876701

See section J for housing details.  
 \*Light duty housing

**8 Voltage rating**

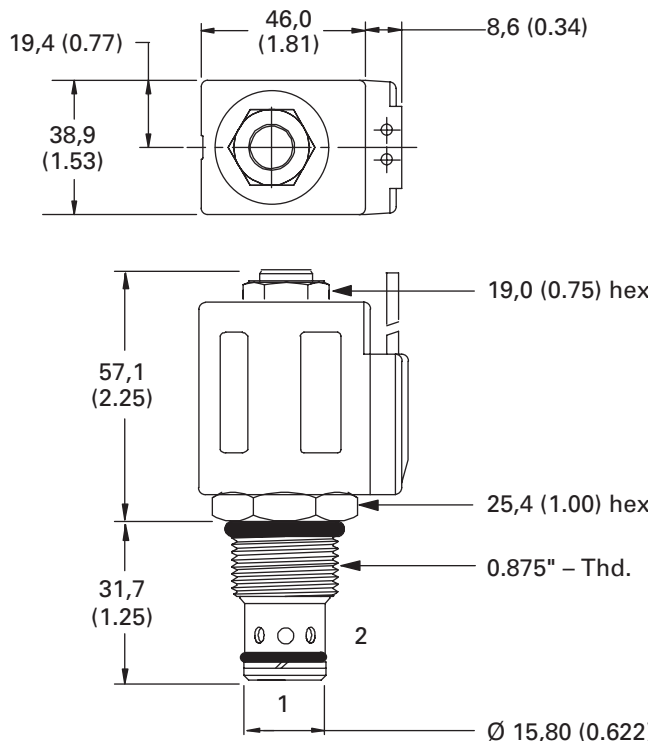
<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)  
 For coil part numbers see page C-5.

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

Note  
 Use 10 series, 20 W coils with this solenoid valve.



# SV12-10-C/CM

Poppet type, normally closed solenoid valve, 350 bar

## Description

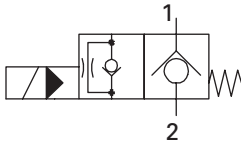
The SV12-10-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in cartridge solenoid valve.

## Operation

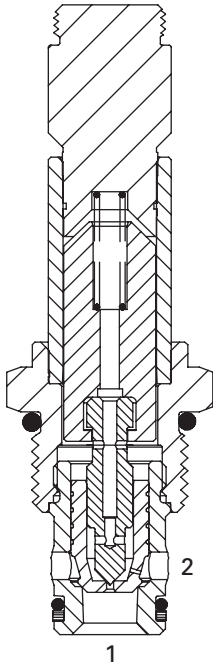
In the de-energized position, this valve blocks flow from port 2 to port 1 and free flow is allowed from port 1 to port 2.

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



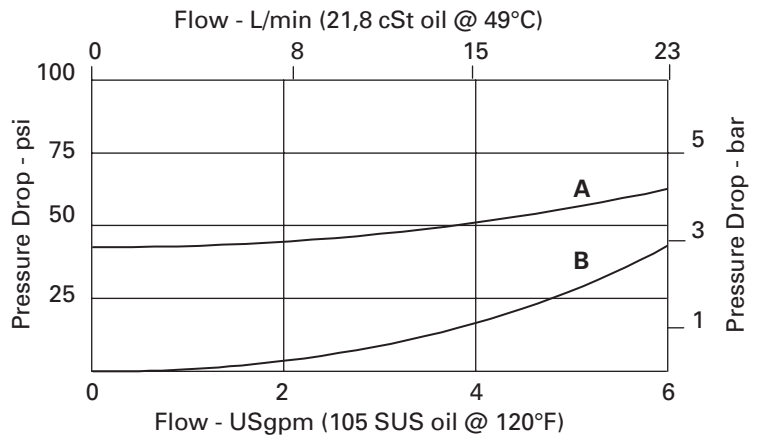
## RATINGS AND SPECIFICATIONS

*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

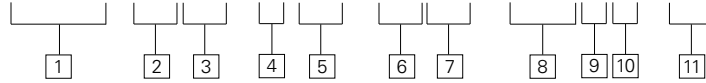
## Pressure Drop Curves

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-135.

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

**7 Port Size**

CODE	PORT SIZE	HOUSING NUMBER
<b>0</b>	Cartridge only	
<b>2G</b>	1/4" BSPP	02-175102
<b>3G</b>	3/8" BSPP	02-175103
<b>6T</b>	SAE 6	02-160100
<b>8T</b>	SAE 8	02-160101

See section J for housing details.

**8 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**

- Blank** - No coil
- G** - ISO 4400 DIN 43650
- P** - 1/2" NPT conduit port w/leadwire
- Q** - Spade terminals
- W** - Leadwire
- N** - Deutsch (DC only)
- Y** - Amp JR (DC only)

**10 Coil series**

**H** - 10 series, 26 W

For coil part numbers and dimensions see page C-6.

**11 Special features**

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

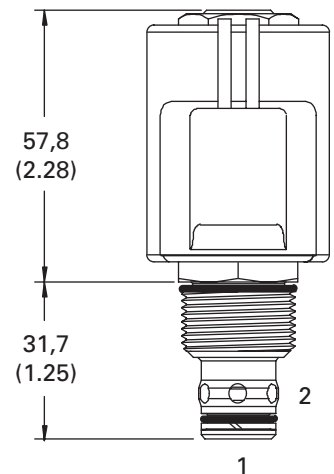
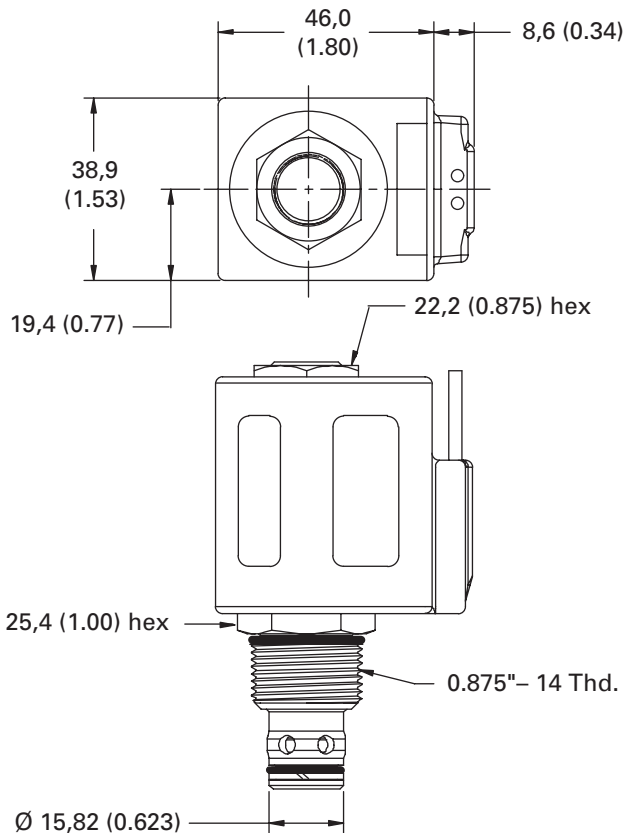
**Dimensions**

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

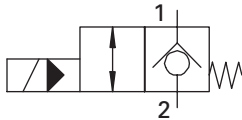
The SV3-10-C is a 2-way, 2-position, poppet-type, normally closed screw-in cartridge solenoid valve.

## Operation

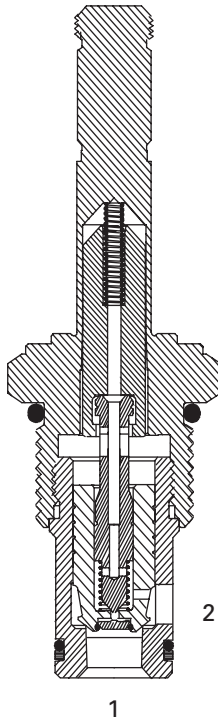
In the de-energized position, flow is blocked from port 2 to port 1 and free flow is allowed from port 1 to port 2.

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

## Functional Symbol



## Sectional View



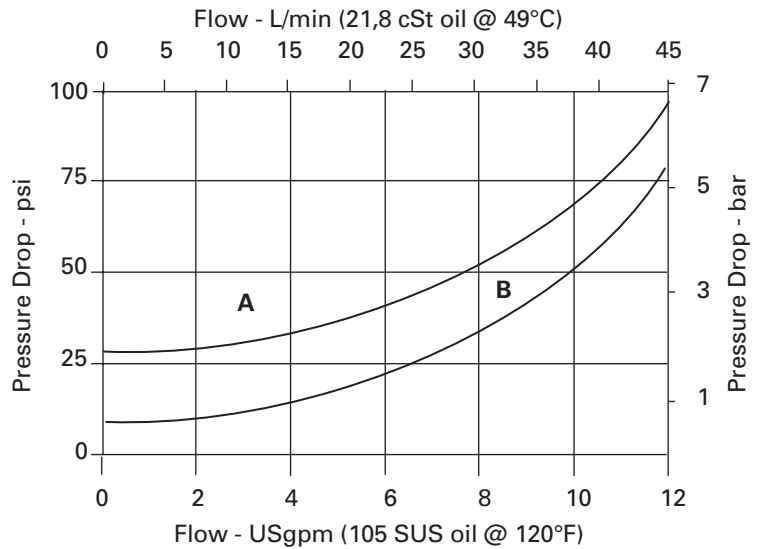
## RATINGS AND SPECIFICATIONS

*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

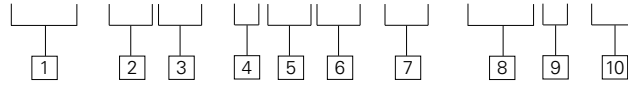
Cartridge only



**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-135.

**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.

- 9 Connector types**
- Blank - No coil
  - G - ISO 4400 DIN 43650
  - P - 1/2" NPT conduit port w/leadwire
  - Q - Spade terminals
  - W - Leadwire
  - N - Deutsch (DC only)
  - Y - Amp JR (DC only)
- For coil part numbers and dimensions see page C-5.

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

**8 Voltage rating**

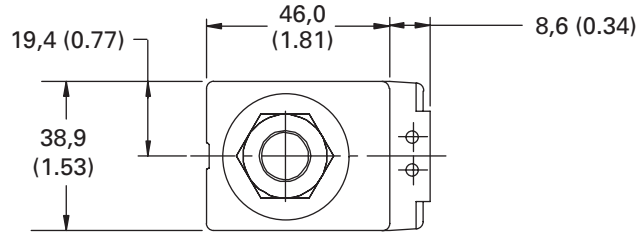
00 - No coil	24A - 24VAC
12D - 12VDC	120A - 120VAC
24D - 24VDC	240A - 240VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

\*Optional arc suppression diode.

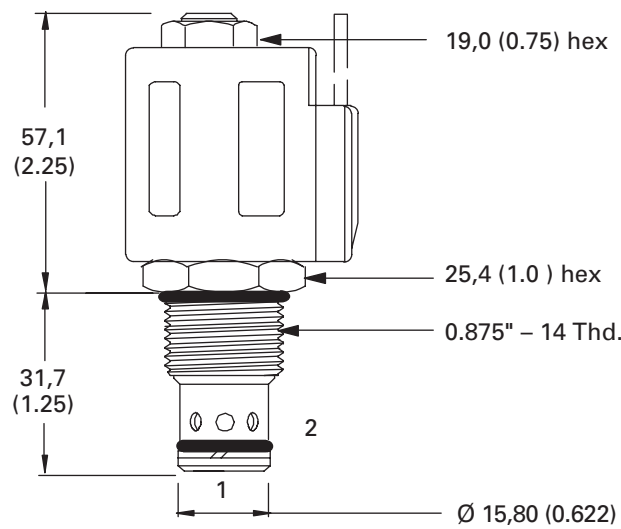
- 10 Special features**
- 00 - None
- (Only required if valve has special features, omitted if "00.")
- Note  
Use 10 series, 20 W coils with this solenoid valve.

**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-C/CM

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

## Description

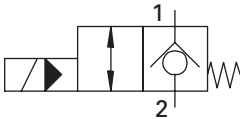
The SV13-10-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in cartridge solenoid valve.

## Operation

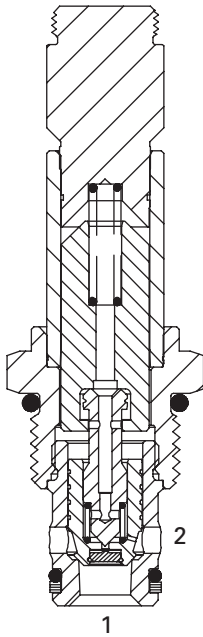
In the de-energized position, this valve blocks flow from port 2 to port 1 and free flow is allowed from port 1 to port 2.

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

## Functional Symbol



## Sectional View



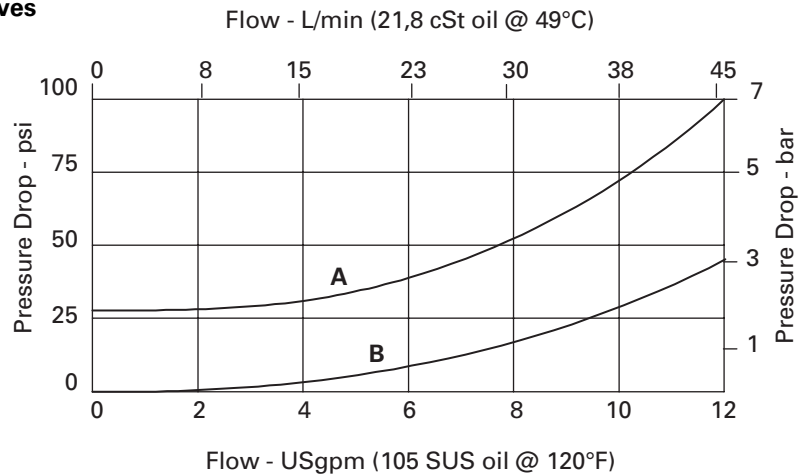
## RATINGS AND SPECIFICATIONS

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

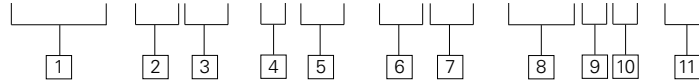
Cartridge only



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-135.

---

- 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
120A	120VAC
240A	240VAC
12B	12VDC/w diode*
24B	24VDC/w diode*

\*Optional arc suppression diode.

- 9 Connector types**
- Blank - No coil
  - G - ISO 4400 DIN 43650
  - P - 1/2" NPT conduit port w/leadwire
  - Q - Spade terminals
  - W - Leadwire
  - N - Deutsch (DC only)
  - Y - Amp JR (DC only)

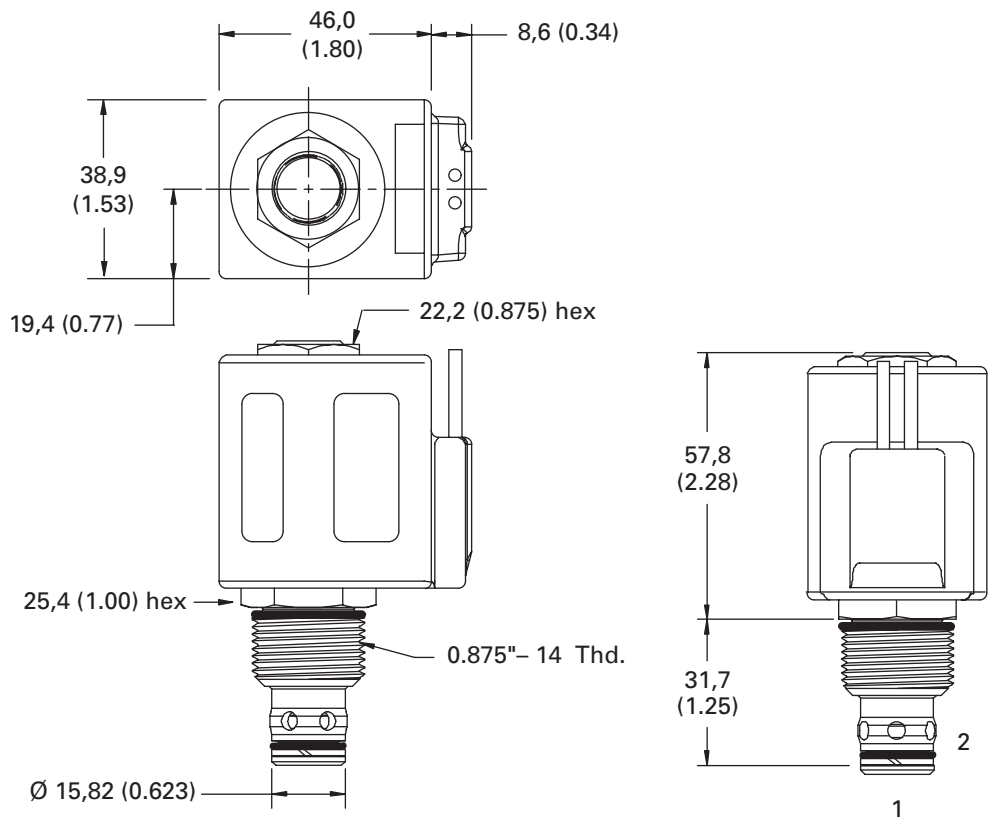
- 10 Coil series**
- H - 10 series, 26 W
- For coil part numbers and dimensions see page C-6.

- 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

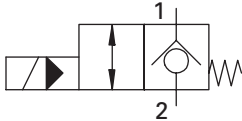
The SV3-12-C is a 2-way, 2-position, poppet-type, pilot-operated, normally closed solenoid cartridge valve.

## Operation

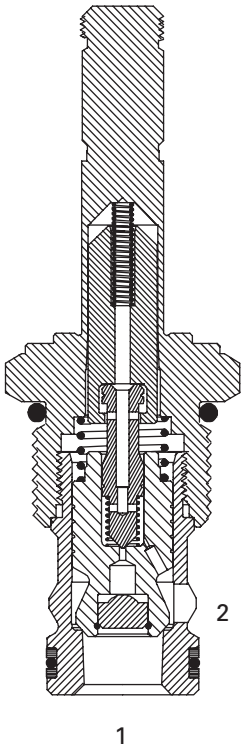
In the de-energized position, flow is blocked from port 2 to port 1 and free flow is allowed from port 1 to port 2.

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

## Functional Symbol



## Sectional View



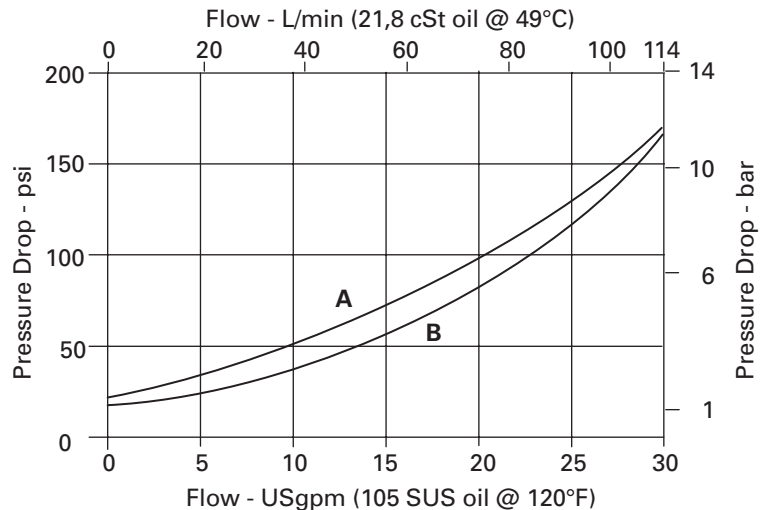
## RATINGS AND SPECIFICATIONS

*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

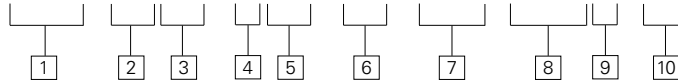
## Pressure Drop Curves

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-135.

---

- 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.

- 9 Connector types**
- Blank - No coil
  - G - ISO 4400 DIN 43650
  - P - 1/2" NPT conduit port w/leadwire
  - Q - Spade terminals
  - W - Leadwire
  - N - Deutsch (DC only)
  - Y - Amp JR (DC only)
- For coil part numbers and dimensions see page C-5.

- 8 Voltage rating**
- 00 - No coil
  - 12D - 12VDC
  - 24D - 24VDC
  - 36D - 36VDC
  - 24A - 24VAC
  - 120A - 120VAC
  - 240A - 240VAC
  - 12B - 12VDC/w diode\*
  - 24B - 24VDC/w diode\*
- \*Optional arc suppression diode.

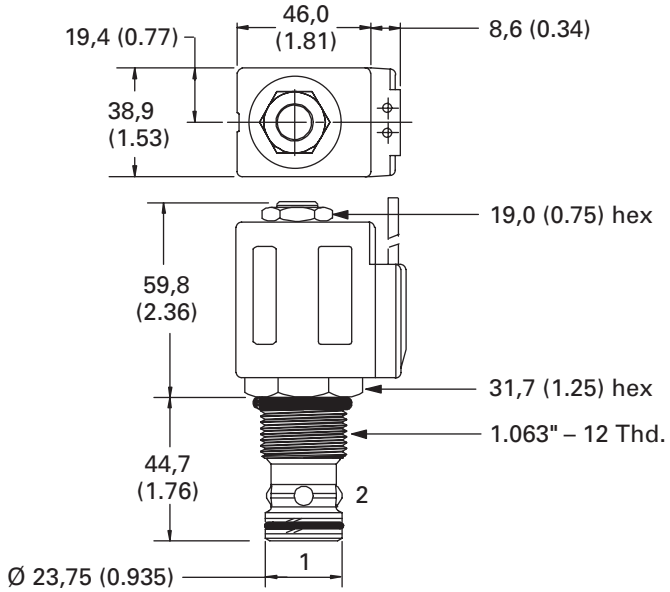
- 10 Special features**
- 00 - None
- (Only required if valve has special features, omitted if "00.")
- Note  
Use 10 series, 20 W coils with this solenoid valve.

**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

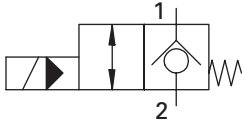
The SV13-12-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in solenoid cartridge valve.

## Operation

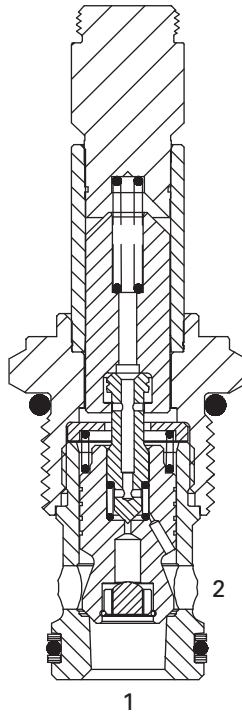
In the de-energized position, flow is blocked from port 2 to port 1 and free flow is allowed from port 1 to port 2.

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

## Functional Symbol



## Sectional View



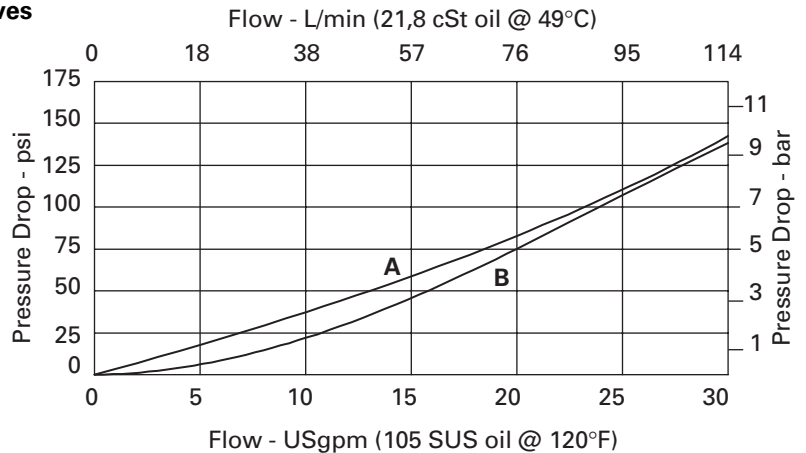
## RATINGS AND SPECIFICATIONS

*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

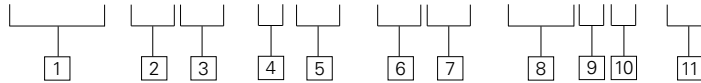
## Pressure Drop Curves

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-135.

---

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

**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
  - 120A - 120VAC
  - 240A - 240VAC
  - 12B - 12VDC/w diode\*
  - 24B - 24VDC/w diode\*
- \*Optional arc suppression diode.

- 9 Connector types**
- Blank - No coil
  - G - ISO 4400 DIN 43650
  - P - 1/2" NPT conduit port w/leadwire
  - Q - Spade terminals
  - W - Leadwire
  - N - Deutsch (DC only)
  - Y - Amp JR (DC only)

- 10 Coil Series**
- H - 10 series, 26 W
- For coil part numbers and dimensions see page C-6.

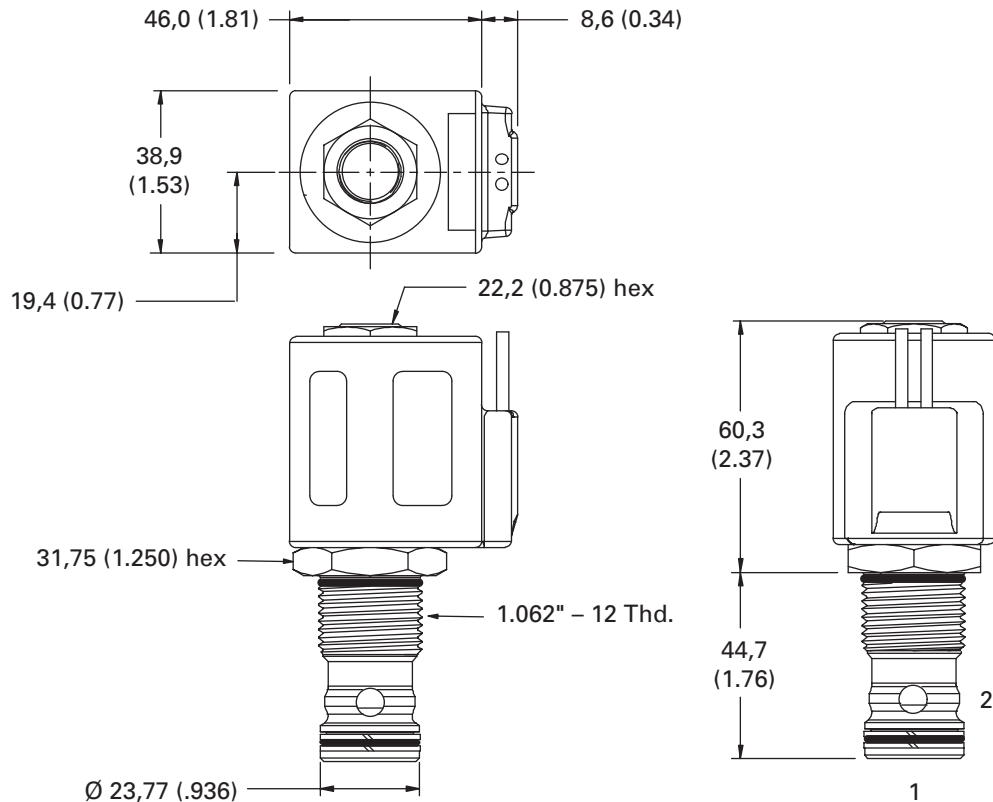
- 11 Special features**
- 00 - None
- (Only required if valve has special features, omitted if "00.")


**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.

# SBV11-12-C

Bi-directional, normally closed solenoid valve

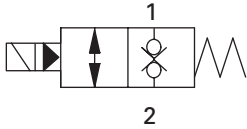
## Description

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

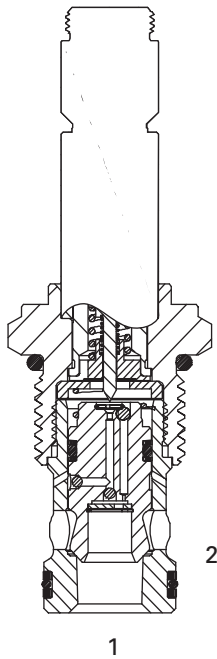
## Operation

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



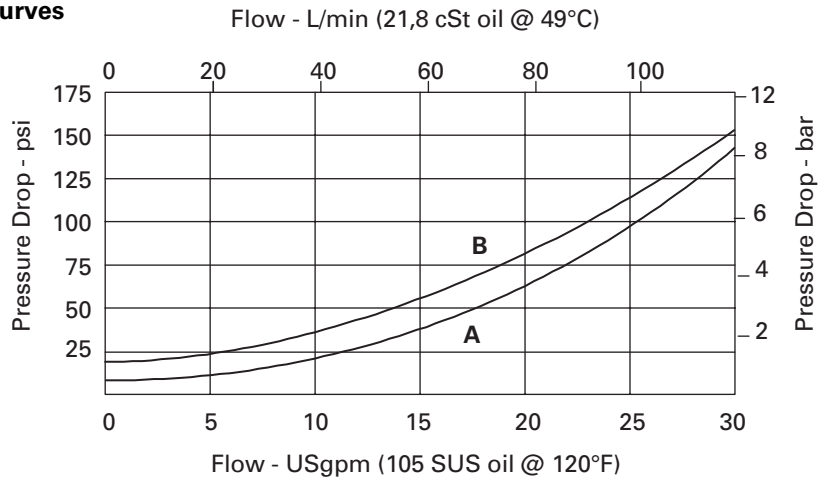
## RATINGS AND SPECIFICATIONS

*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

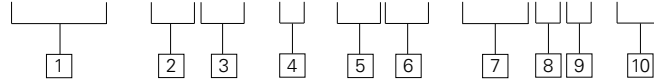
Cartridge only



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
<b>0</b>	Cartridge only		
<b>4G</b>	1/2" BSPP	02-161118	02-172062
<b>4GU</b>	1/2" BSPP	02-161116	02-172512
<b>6G</b>	3/4" BSPP	02-161117	02-169665
<b>6GU</b>	3/4" BSPP	02-161115	02-162922
<b>10T</b>	SAE 10	02-160640	02-169744
<b>10TU</b>	SAE 10	02-160641	02-169817
<b>12T</b>	SAE 12	02-160644	02-169782
<b>12TU</b>	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  
**120A** - 120VAC  
**240A** - 240VAC  
**12B** - 12VDC/w diode\*  
**24B** - 24VDC/w diode\*  
 \*Optional arc suppression diode.

**8 Connector types**

**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**9 Coil series**

**H** - 10 series, 26 W

For coil part numbers and dimensions see page C-6.

**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.



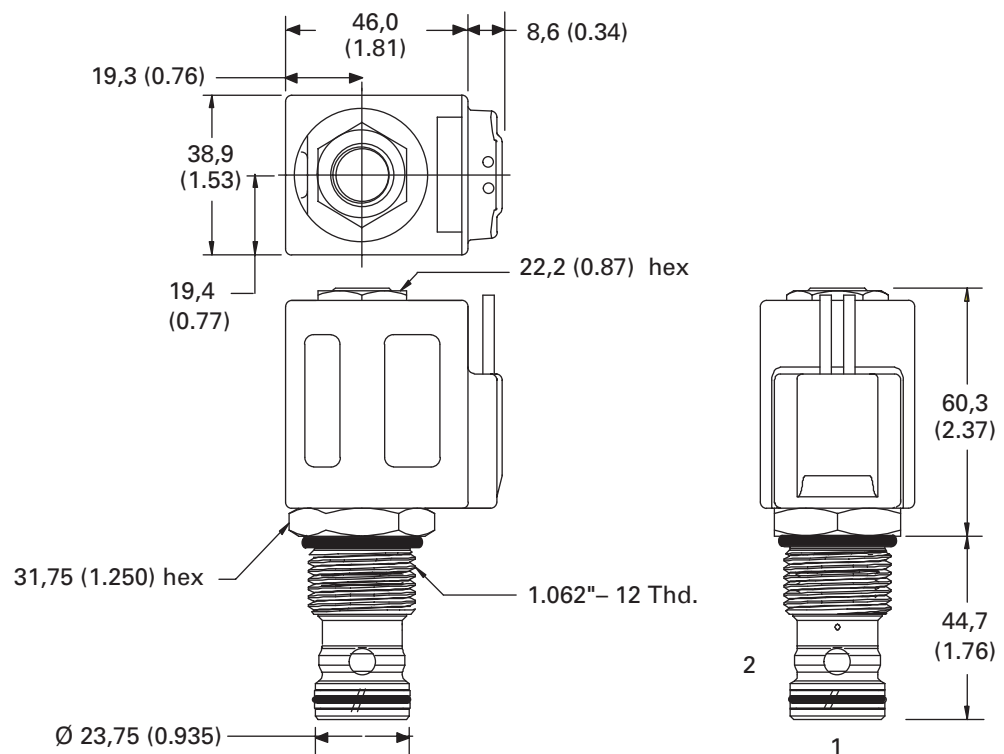
**WARNING**

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

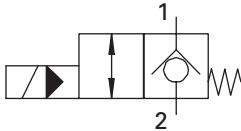
The SV1-16-C is a 2-way, 2-position, poppet type, pilot operated, normally closed screw-in cartridge solenoid valve.

## Operation

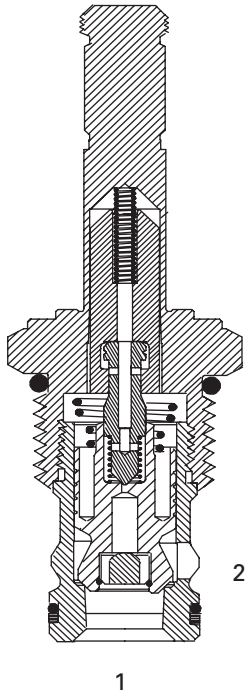
In the de-energized position, flow is blocked from port 2 to port 1 and free flow is allowed from port 1 to port 2.

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

## Functional Symbol



## Sectional View



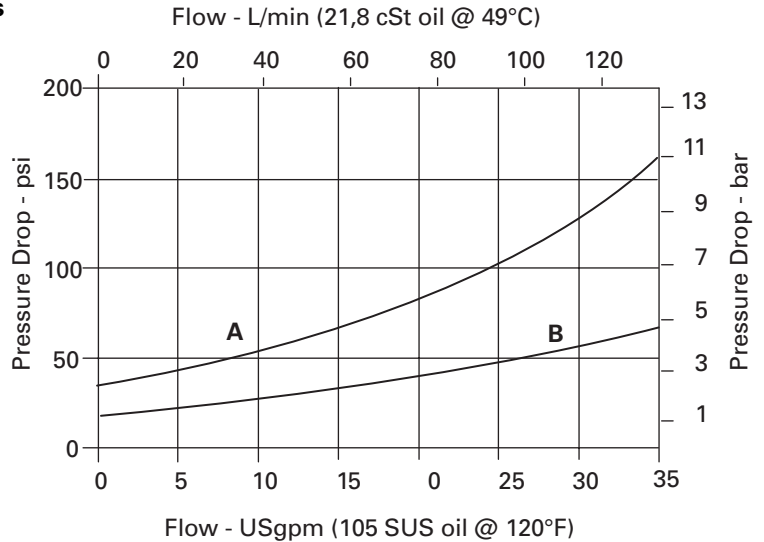
## RATINGS AND SPECIFICATIONS

*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

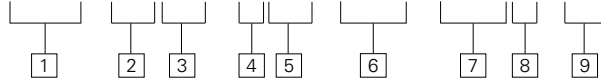
## Pressure Drop Curves

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-135.

**6 Port Size**

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

\*Light duty housing  
 See section J for housing details.

**7 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

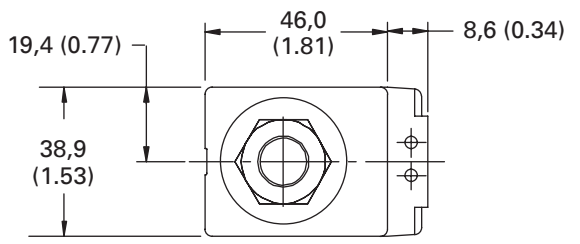
\*Optional arc suppression diode.

**8 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)  
 For coil part numbers and dimensions page C-5.

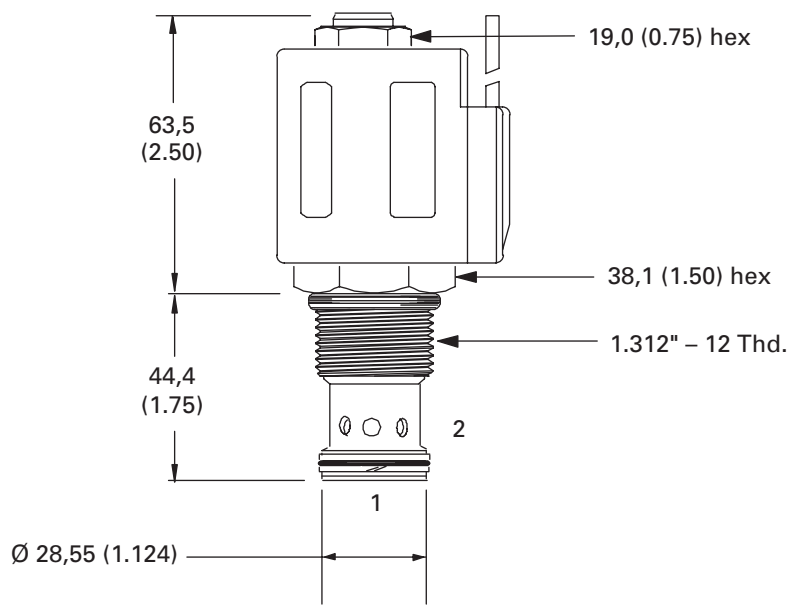
**9 Special features**  
**00** - None  
 (Only required if valve has special features, omitted if "00.")

Note  
 Use 10 series, 20 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

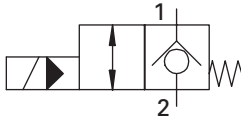
The SV13-16-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in cartridge solenoid valve.

## Operation

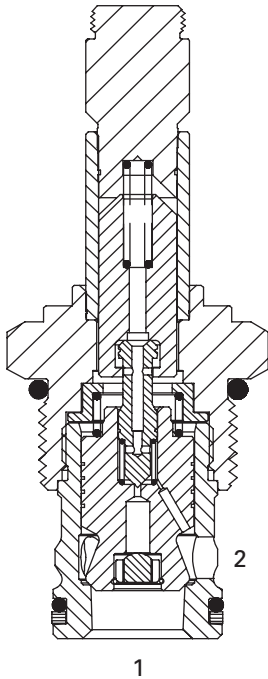
In the de-energized position, flow is blocked from port 2 to port 1 and free flow is allowed from port 1 to port 2.

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

## Functional Symbol



## Sectional View



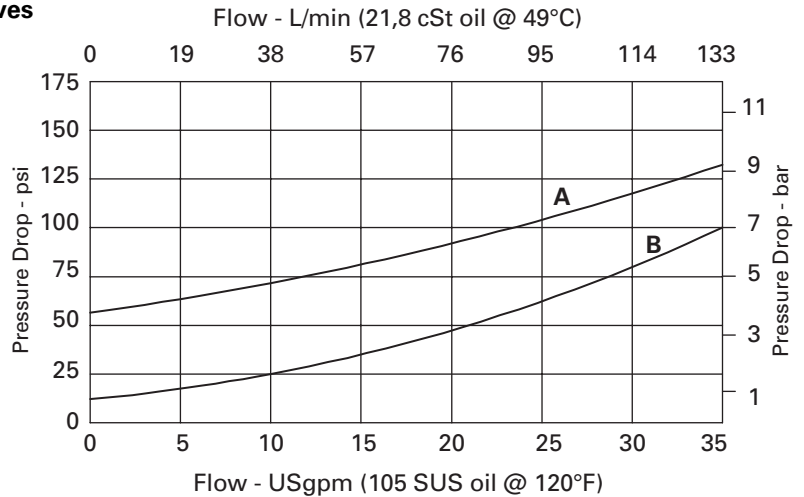
## RATINGS AND SPECIFICATIONS

*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

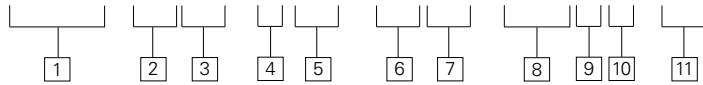
## Pressure Drop Curves

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-135.

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

**7 Port Size**

CODE	PORT SIZE	HOUSING NUMBER
<b>0</b>	Cartridge only	
<b>4G</b>	1/2" BSPP	02-175062
<b>6G</b>	3/4" BSPP	02-169665
<b>10T</b>	SAE 10	02-169744
<b>12T</b>	SAE 12	02-169782

See section J for housing details.

**8 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**10 Coil Series**  
**H** - 10 series, 26 W  
 For coil part numbers and dimensions see page C-6.

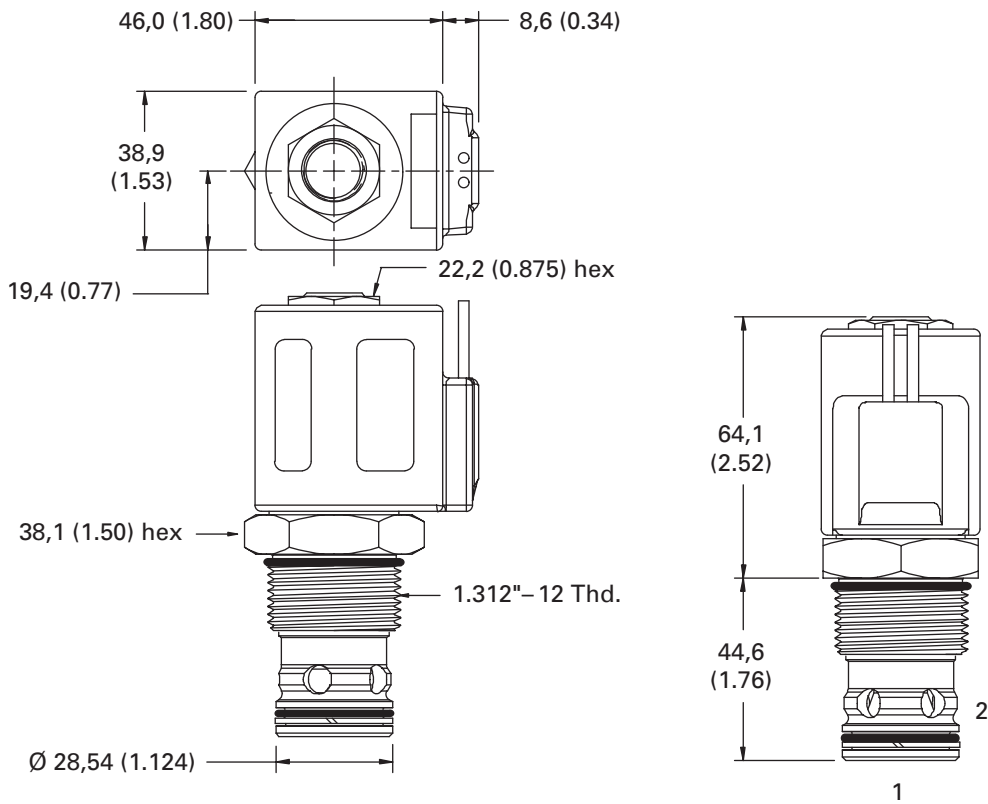
**11 Special features**  
**00** - None  
 (Only required if valve has special features, omitted if "00.")

**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

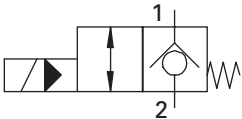
The SV2-20-C is a 2-way, 2-position, poppet type, pilot operated, normally closed screw-in cartridge solenoid valve.

## Operation

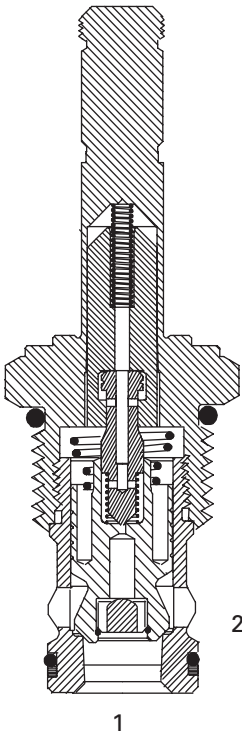
In the de-energized position, flow is blocked from port 2 to port 1 and free flow is allowed from port 1 to port 2.

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

## Functional Symbol



## Sectional View



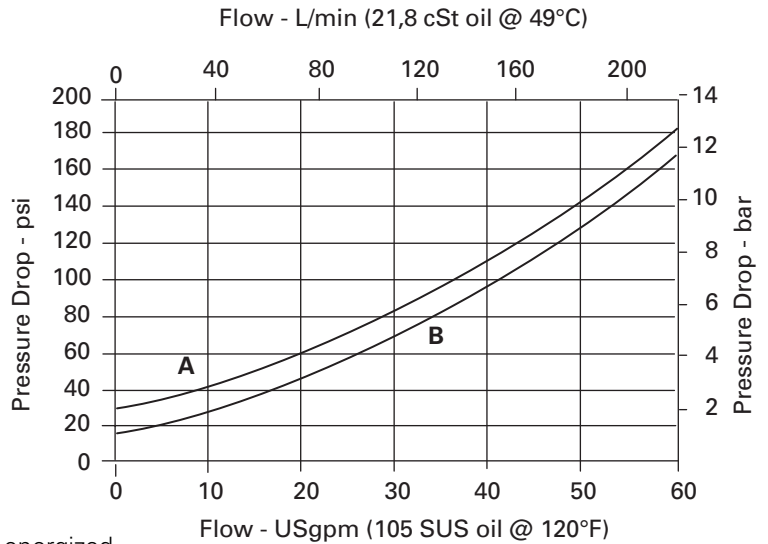
## RATINGS AND SPECIFICATIONS

*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

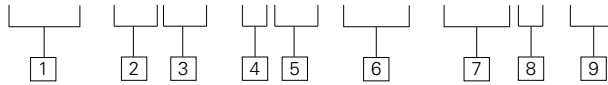
## Pressure Drop Curves

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

**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-135.

**6 Port Size**

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

\*Light duty housing  
 See section J for housing details.

**7 Voltage rating**

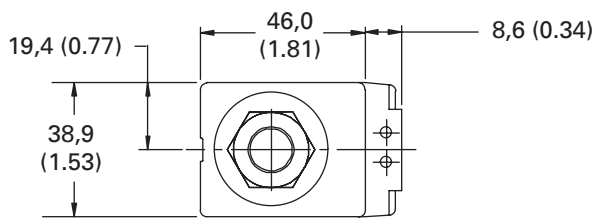
<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

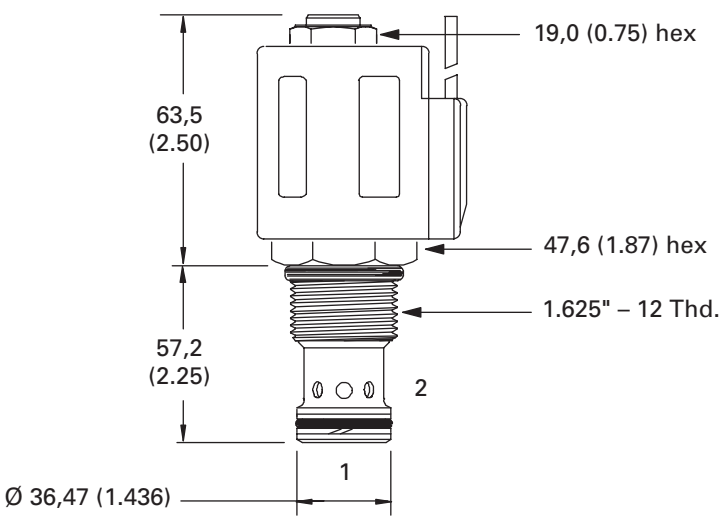
**8 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)  
 For coil part numbers and dimensions see page C-5.

**9 Special features**  
**00** - None  
 (Only required if valve has special features, omitted if "00.")  
 Note  
 Use 10 series, 20 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

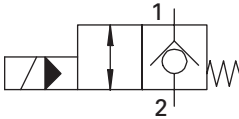
The SV13-20-C is a 2-way, 2-position, pilot operated, poppet type, normally closed, screw-in cartridge solenoid valve.

## Operation

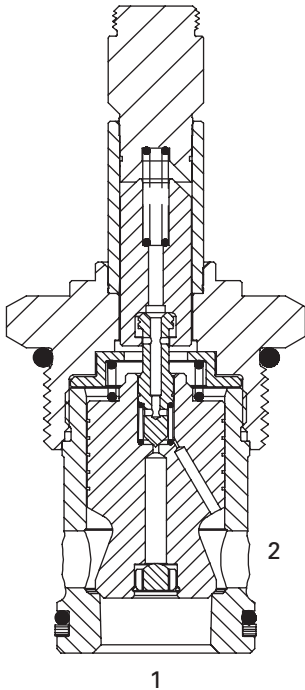
In the de-energized position, flow is blocked from port 2 to port 1 and free flow is allowed from port 1 to port 2.

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

## Functional Symbol



## Sectional View



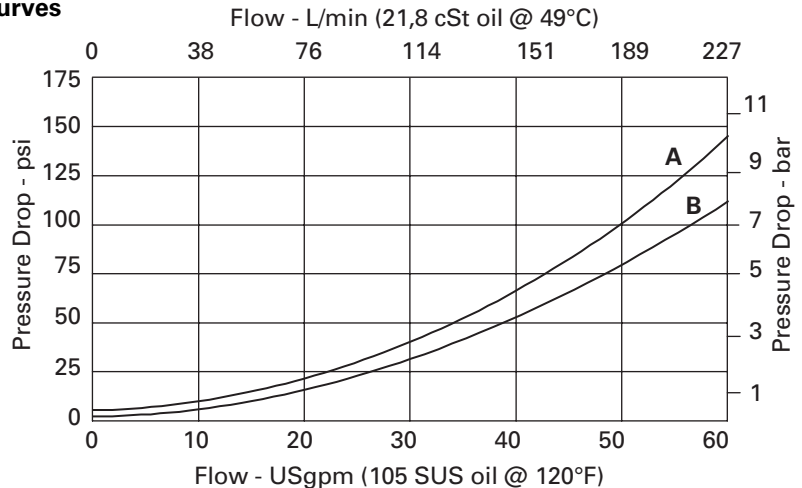
## RATINGS AND SPECIFICATIONS

*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)	210 bar (3000 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

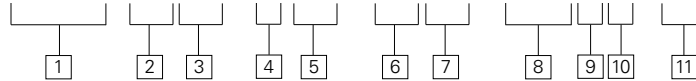
Cartridge only



- 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-135.

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

**7 Port Size**

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

See section J for housing details.

**8 Voltage rating**

<b>00</b>	No coil
<b>12D</b>	12VDC
<b>24D</b>	24VDC
<b>36D</b>	36VDC
<b>24A</b>	24VAC
<b>120A</b>	120VAC
<b>240A</b>	240VAC
<b>12B</b>	12VDC/w diode*
<b>24B</b>	24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**

- Blank** - No coil
- G** - ISO 4400 DIN 43650
- P** - 1/2" NPT conduit port w/leadwire
- Q** - Spade terminals
- W** - Leadwire
- N** - Deutsch (DC only)
- Y** - Amp JR (DC only)

**10 Coil Series**

**H** - 10 series, 26 W  
 For coil part numbers and dimensions see page C-6.

**11 Special features**

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

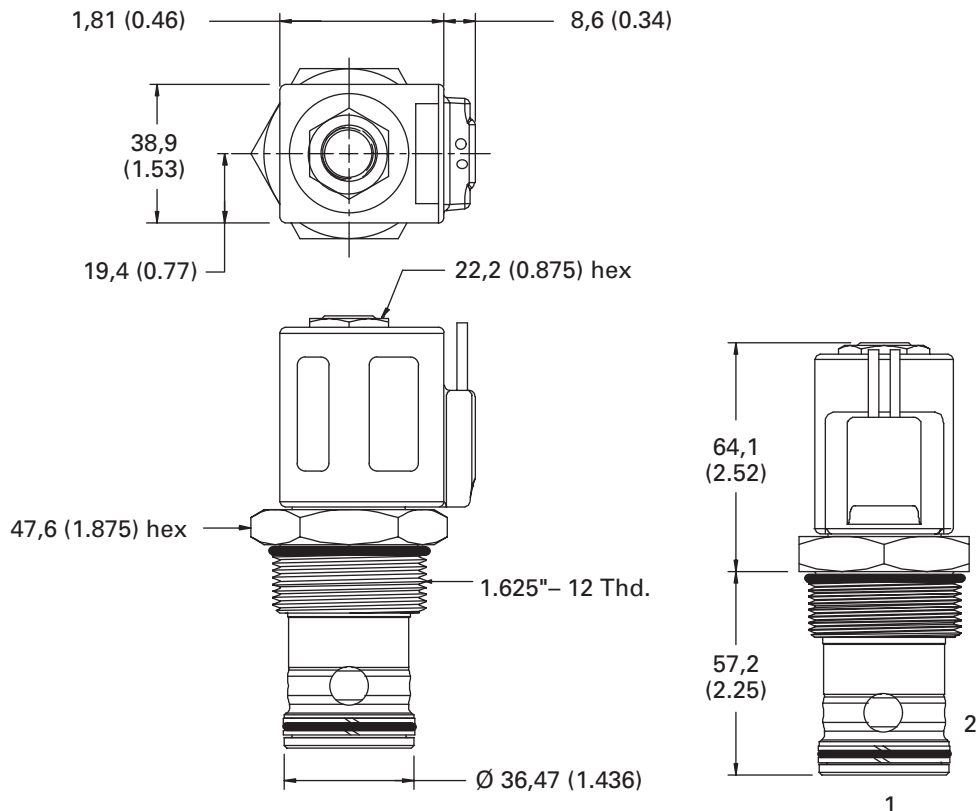
**Dimensions**

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

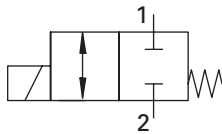
The SV4-8-C is a two-way, two-position, spool type, direct acting, normally closed solenoid valve.

## Operation

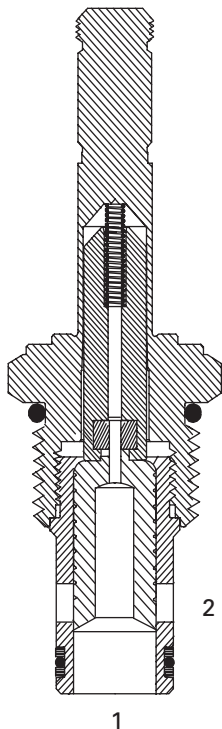
In the de-energized position, the SV4-8-C blocks flow in both directions.

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

## Functional Symbol



## Sectional View



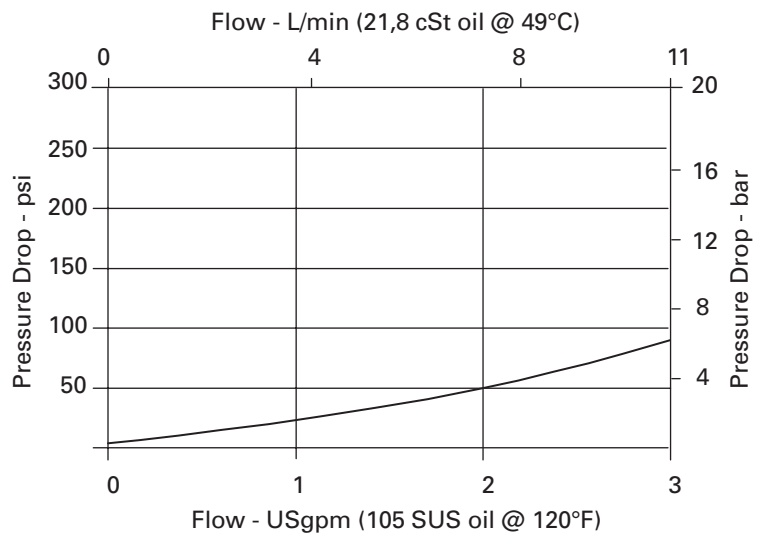
## RATINGS AND SPECIFICATIONS

*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 <sup>3</sup> /min (5 in <sup>3</sup> /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>

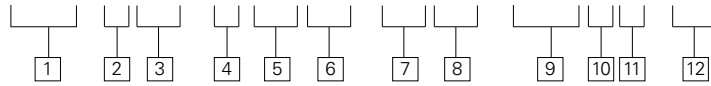
## Pressure Drop Curve

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**  
O - Normally closed

---

- 5 Manual override option**  
Blank - No manual override  
M - Knob type  
For valve dimensions with manual override option installed see page A-135.

---

- 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.

- 10 Connector types**  
Blank - No coil  
G - ISO 4400 DIN 43650  
P - 1/2" NPT conduit port w/leadwire  
Q - Spade terminals  
W - Leadwire  
N - Deutsch (DC only)  
Y - Amp JR (DC only)

- 11 Coil series**  
S - 8 series, 16 W  
For coil part numbers and dimensions see page C-3.

- 9 Voltage rating**
- 00 - No coil
  - 12D - 12VDC
  - 24D - 24VDC
  - 36D - 36VDC
  - 24A - 24VAC
  - 120A - 120VAC
  - 240A - 240VAC
  - 12B - 12VDC/w diode\*
  - 24B - 24VDC/w diode\*
- \*Optional arc suppression diode.

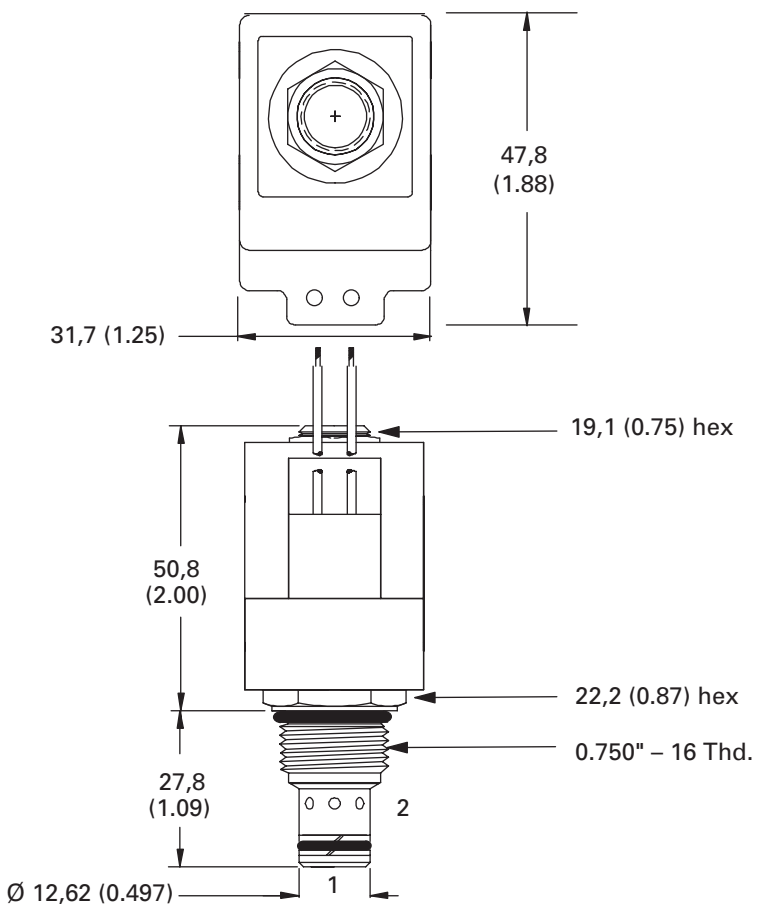
- 12 Special features**  
00 - None  
(Only required if valve has special features, omitted if "00.")

**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

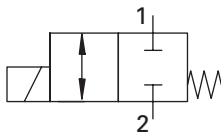
## Description

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

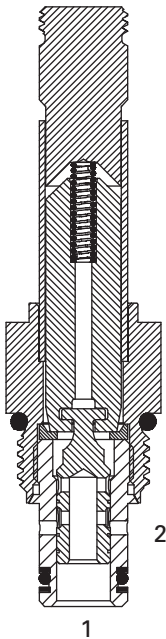
## Operation

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



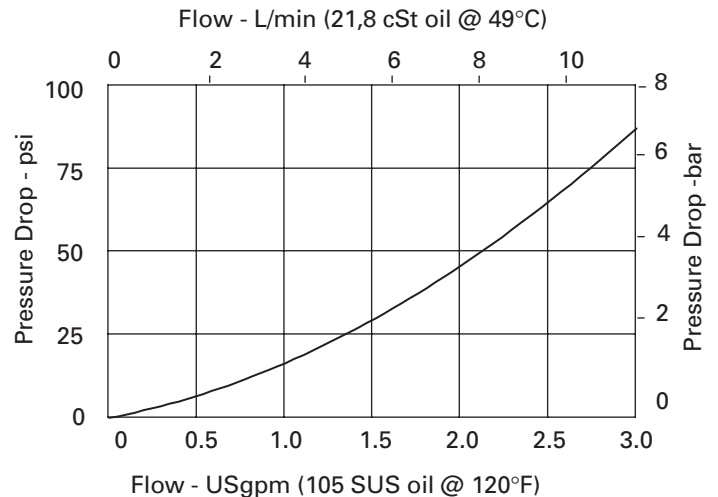
## RATINGS AND SPECIFICATIONS

*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 <sup>3</sup> (8.5in <sup>3</sup> /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>

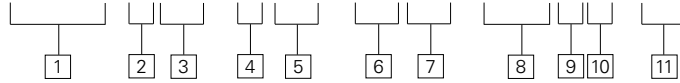
## Pressure Drop Curve

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-135.

- 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

---

- 8 Voltage rating**

00	No coil	24A - 24VAC
12D	12VDC	120A - 120VAC
24D	24VDC	240A - 240VAC
36D	36VDC	12B - 12VDC/w diode*
		24B - 24VDC/w diode*

---

- 9 Connector types**  
Blank - No coil  
G - ISO 4400 DIN 43650  
P - 1/2" NPT conduit port w/leadwire  
Q - Spade terminals  
W - Leadwire  
N - Deutsch (DC only)  
Y - Amp JR (DC only)

---

- 10 Coil Series**  
P - 8 series, 20 W  
For coil part numbers and dimensions see page C-4.

---

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

See section J for housing details.

\*Optional arc suppression diode.

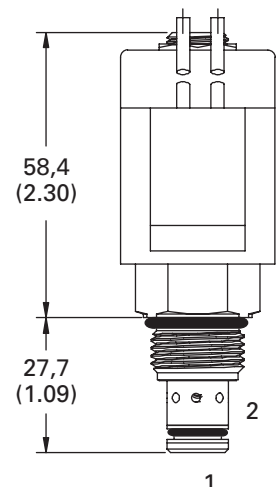
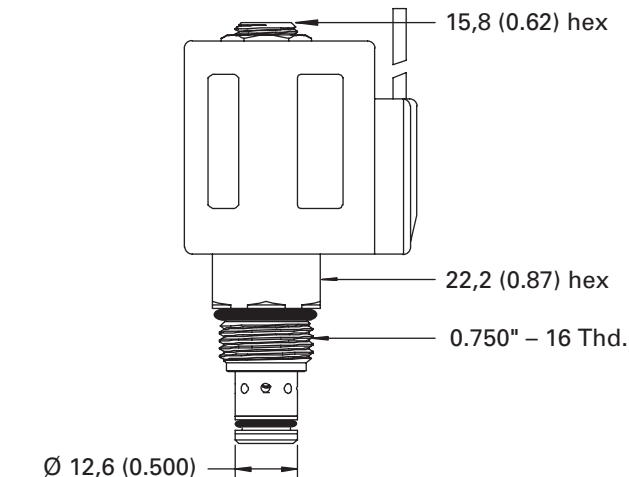
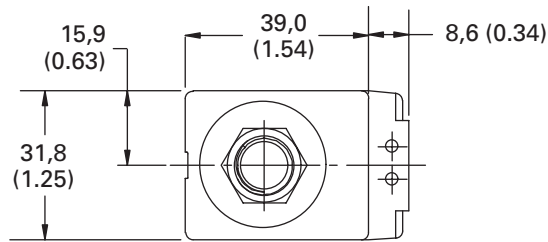
**Dimensions**

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

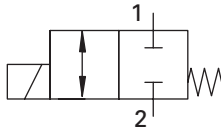
The SV4-10-C is a 2-way, 2-position, direct acting, spool-type, normally closed screw-in cartridge solenoid valve.

## Operation

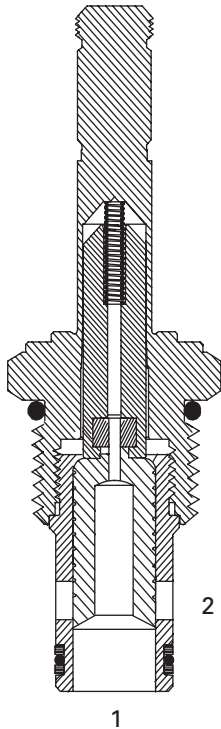
In the de-energized position, flow is blocked in both directions.

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

## Functional Symbol



## Sectional View



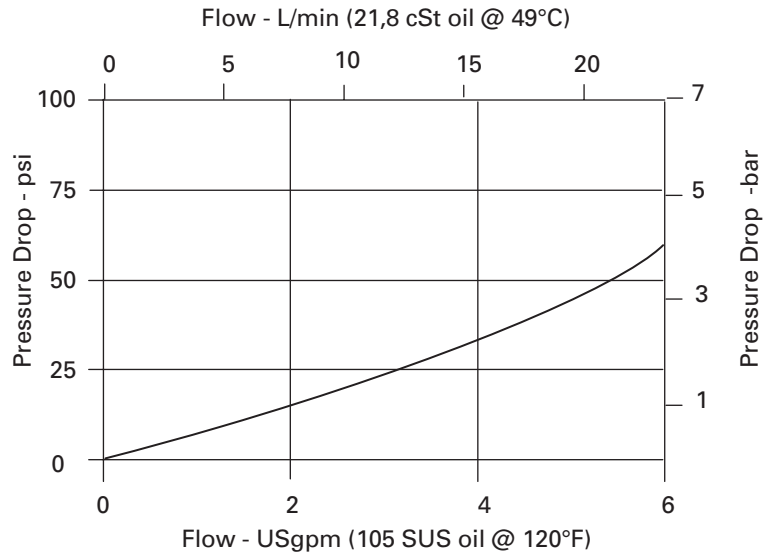
## RATINGS AND SPECIFICATIONS

*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 <sup>3</sup> /min (5 in <sup>3</sup> /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®) Viton is a registered trademark of E.I. DuPont

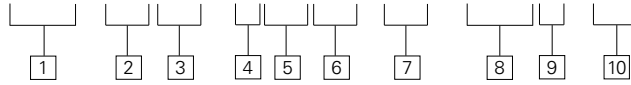
## Pressure Drop Curve

Cartridge only



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

**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-135.

**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
<b>0</b>	Cartridge only	
<b>3B</b>	3/8" BSPP	02-175462
<b>6T</b>	SAE 6	566151
<b>2G</b>	1/4" BSPP	876702
<b>3G</b>	3/8" BSPP	876703
<b>6H</b>	SAE 6	876700
<b>8H</b>	SAE 8	876701

See section J for housing details.

**8 Voltage rating**

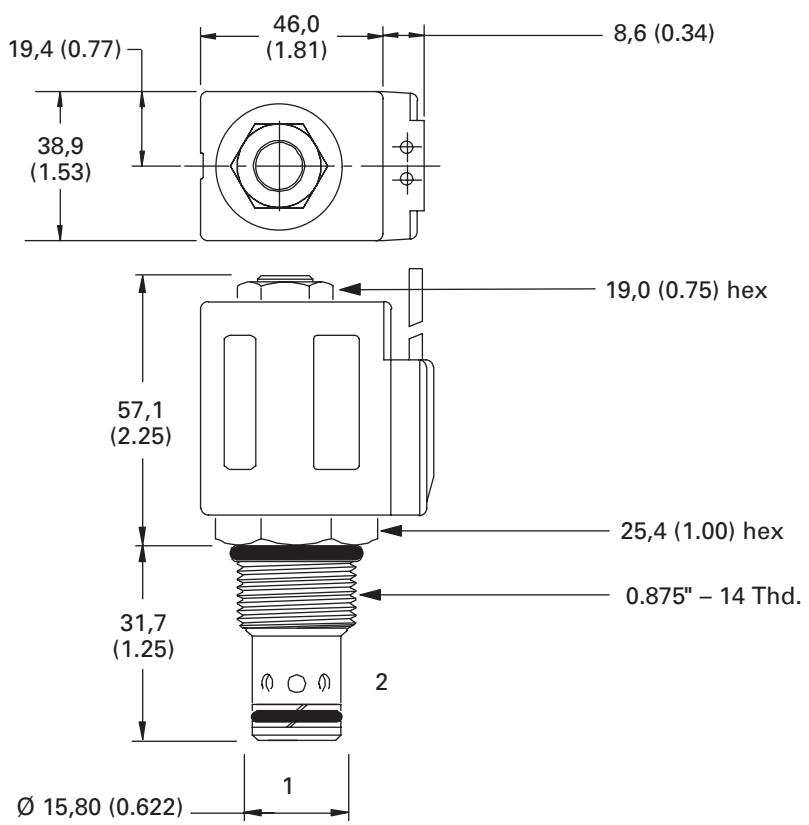
<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)  
 For coil part numbers and dimensions see page C-5.

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

Note  
 Use 10 series, 20 W coils with this solenoid valve.



# SV14-10-C/CM

Spool type, normally closed solenoid valve, 350 bar

## Description

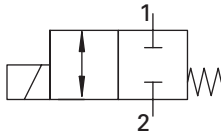
The SV14-10-C is a 2-way, 2-position, spool type, normally closed screw-in cartridge solenoid valve.

## Operation

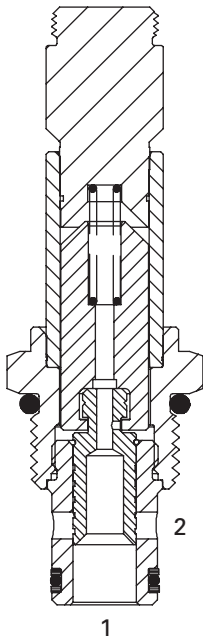
In the de-energized position, flow is blocked in both directions.

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

## Functional Symbol



## Sectional View



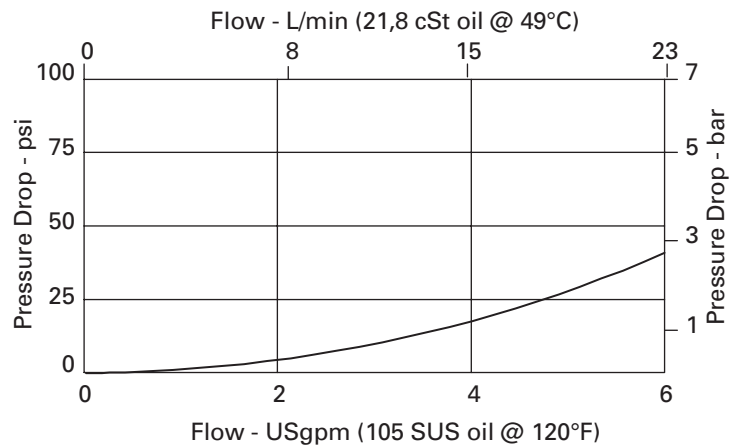
## RATINGS AND SPECIFICATIONS

*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 <sup>3</sup> /min. (8.5 in <sup>3</sup> /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

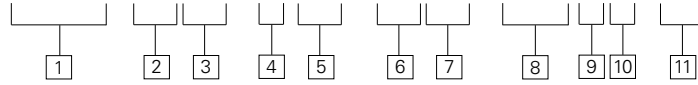
Cartridge only



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-135.

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

**7 Port Size**

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

See section J for housing details.

**8 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**10 Coil series**  
**H** - 10 series, 26 W  
 For coil part numbers and dimensions see page C-6.

**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)

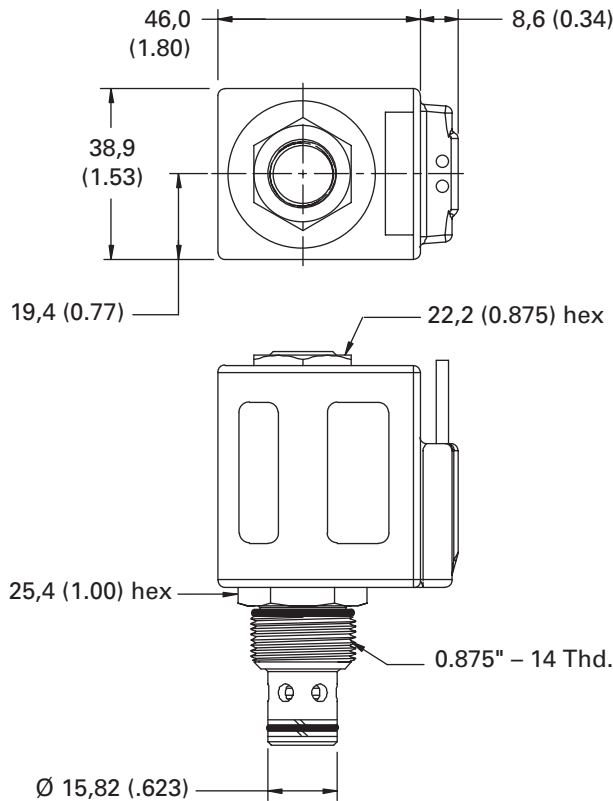
**Note**

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

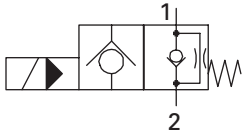
The SV5-8-O is a 2-way, 2-position, poppet type, pilot operated, normally open, solenoid valve. This valve is used in applications requiring low leakage, such as single acting cylinder applications.

## Operation

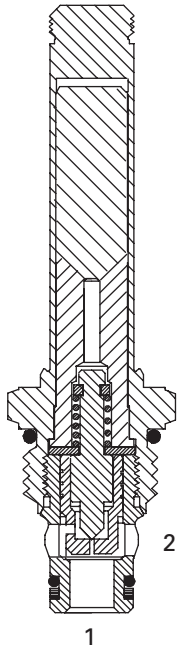
In the de-energized position, the SV5-8-O allows free flow from port 2 to port 1, and restricted flow from port 1 to port 2.

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



## Sectional View



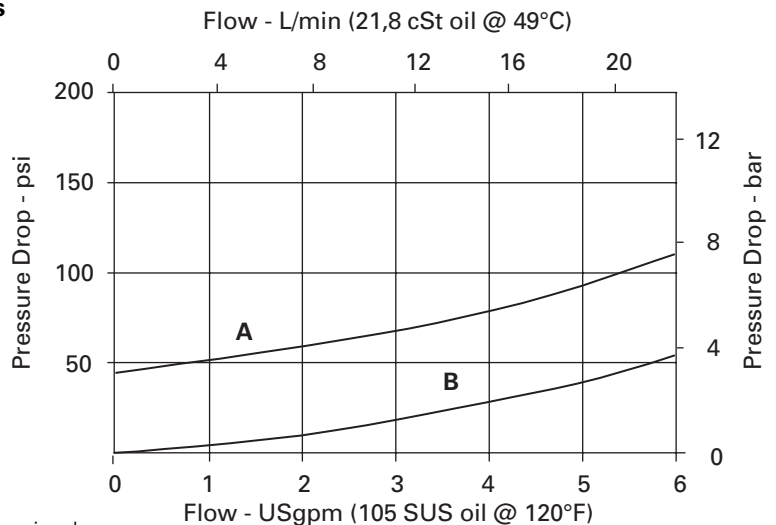
## RATINGS AND SPECIFICATIONS

*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) 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>

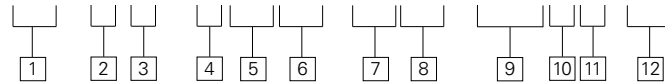
## Pressure Drop Curves

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-134.

**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
<b>0</b>	Cartridge only	
<b>2G</b>	1/4" BSPP	02-160727
<b>3G</b>	3/8" BSPP	02-160728
<b>4T</b>	SAE 4	02-160730
<b>6T</b>	SAE 6	02-160731
<b>8T</b>	SAE 8	02-160732

See section J for housing details.

**9 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**10 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**11 Series Coil**  
**S** - 8 series, 16 W  
 For coil dimensions see page C-3.

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

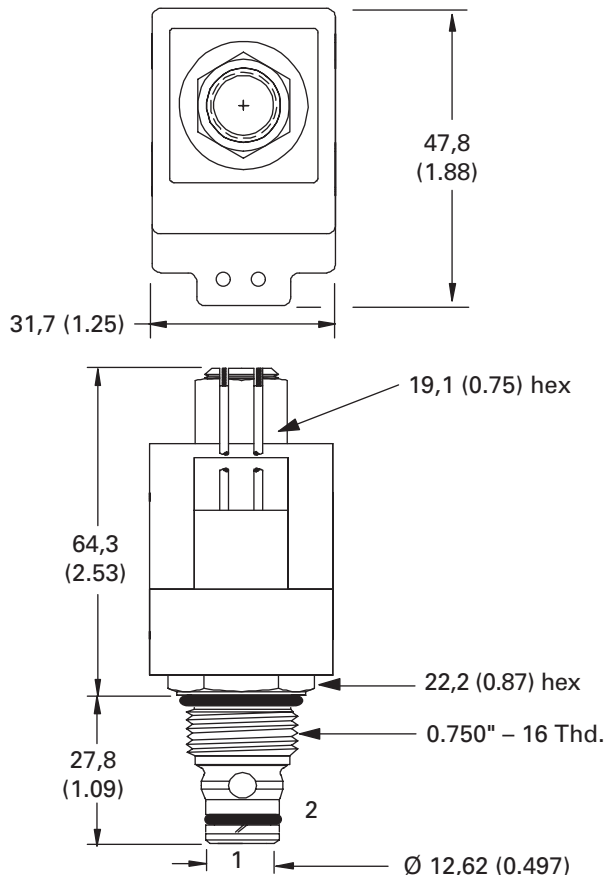
**Dimensions**

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

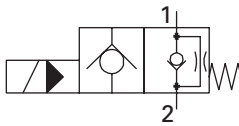
The SV15-8-O is a 2-way, 2-position, pilot operated, poppet type, normally open, screw-in cartridge solenoid valve.

## Operation

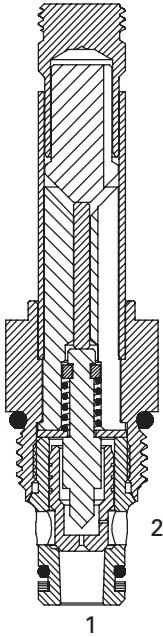
In the de-energized position, flow from port 1 to port 2 is restricted, while free flow is allowed from port 2 to port 1.

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.

## Functional Symbol



## Sectional View



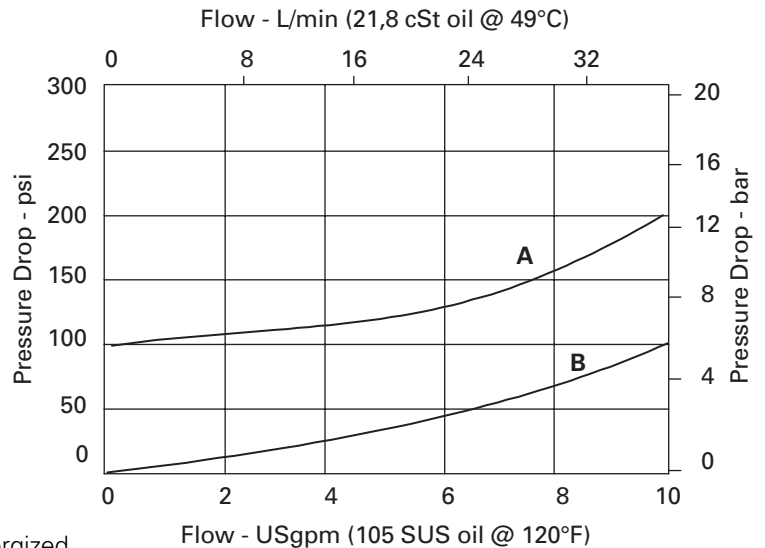
## RATINGS AND SPECIFICATIONS

*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	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®) <small>Viton is a registered trademark of E.I. DuPont</small>

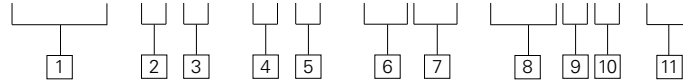
## Pressure Drop Curves

Cartridge only



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

**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-134.

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

**7 Port Size**

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

See section J for housings.

**8 Voltage rating**

<b>00</b> - No coil	<b>120A</b> - 120VAC
<b>12D</b> - 12VDC	<b>240A</b> - 240VAC
<b>24D</b> - 24VDC	<b>12B</b> - 12VDC/w diode*
<b>36D</b> - 36VDC	<b>24B</b> - 24VDC/w diode*
<b>24A</b> - 24VAC	*Optional arc suppression diode.

**9 Connector types/coil**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**10 Coil series**  
**P** - 8 series, 20 W  
 For coil dimensions see page C-4.

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

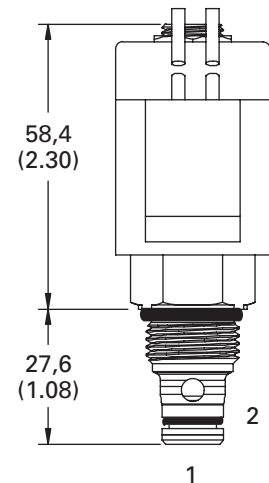
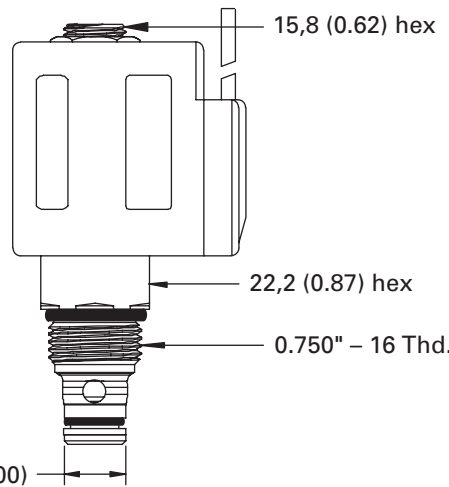
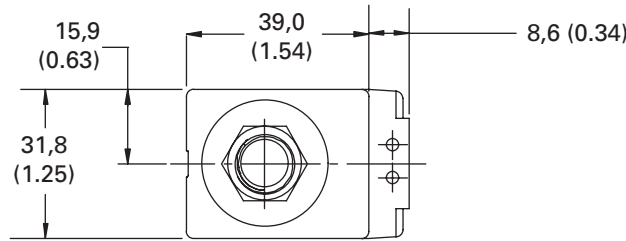
**Dimensions**

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

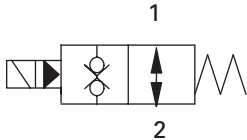
## Description

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

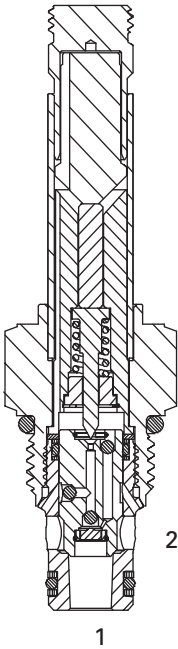
## Operation

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

## Functional Symbol



## Sectional View



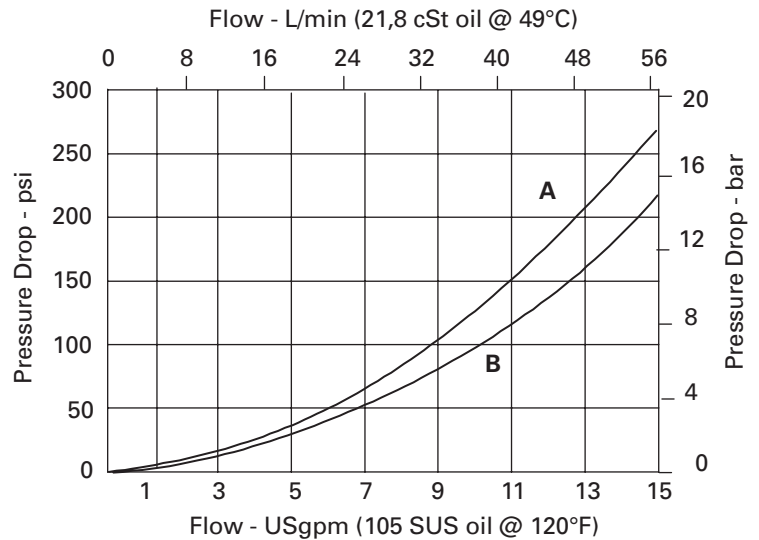
## RATINGS AND SPECIFICATIONS

*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) 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

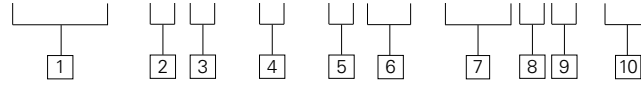
## Pressure Drop Curves

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
<b>0</b>	Cartridge only		
<b>2G</b>	1/4" BSPP	02-160727	02-160733
<b>3G</b>	3/8" BSPP	02-160728	02-160734
<b>4T</b>	SAE 4	02-160730	02-160736
<b>6T</b>	SAE 6	02-160731	02-160737
<b>8T</b>	SAE 8	02-160732	02-160738

See section J for housings.

**7 Voltage rating**

- 00** - No coil
- 12D** - 12VDC
- 24D** - 24VDC
- 36D** - 36VDC
- 24A** - 24VAC
- 120A** - 120VAC
- 240A** - 240VAC
- 12B** - 12VDC/w diode\*
- 24B** - 24VDC/w diode\*

\*Optional arc suppression diode.

**8 Connector types**

- Blank** - No coil
- G** - ISO 4400 DIN 43650
- P** - 1/2" NPT conduit port w/leadwire
- Q** - Spade terminals
- W** - Leadwire
- N** - Deutsch (DC only)
- Y** - Amp JR (DC only)

**9 Coil series**

**P** - 8 series, 20 W  
 For coil dimensions see page C-4.

**10 Special features**

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

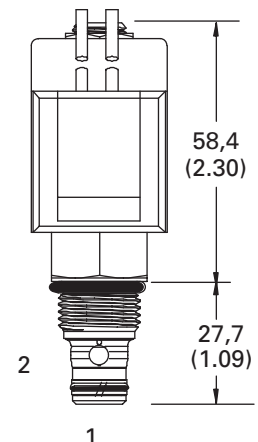
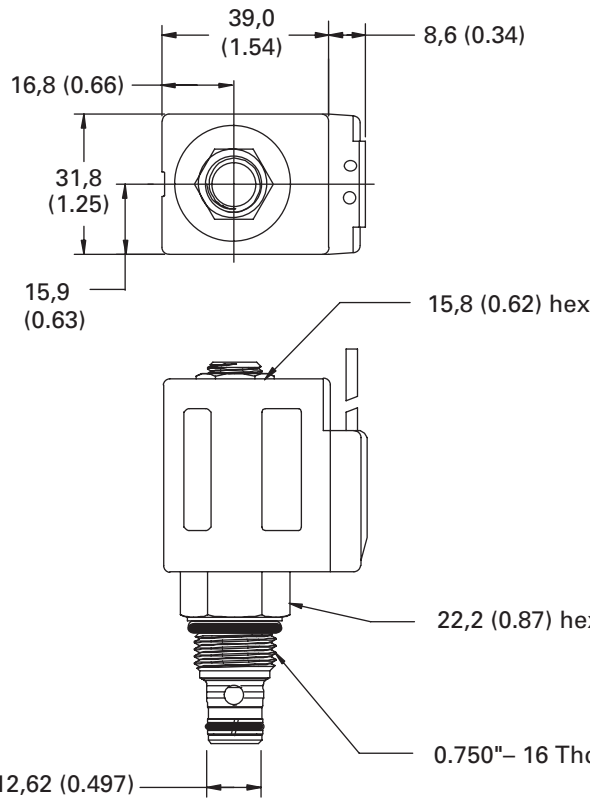
**Dimensions**

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, 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

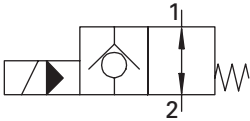
The SV3-10-O is a 2-way, 2-position, poppet type, pilot operated, normally open, screw-in cartridge solenoid valve.

## Operation

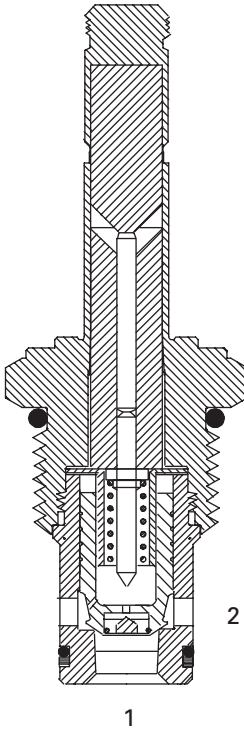
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2.

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



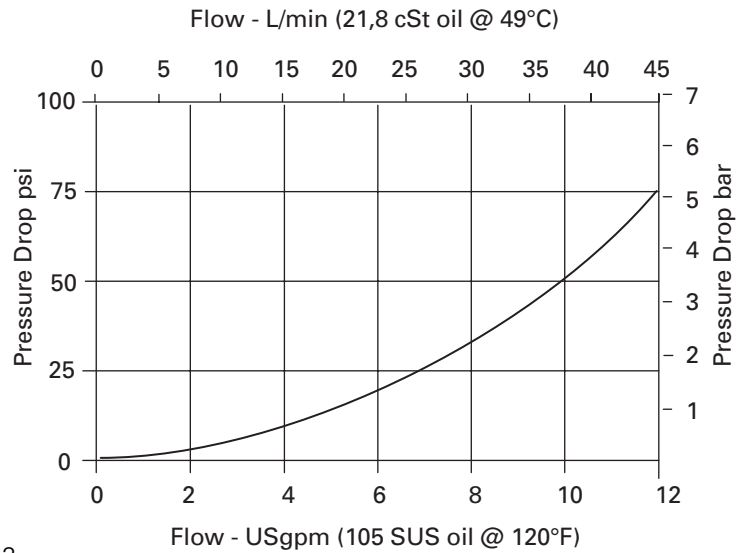
## RATINGS AND SPECIFICATIONS

*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

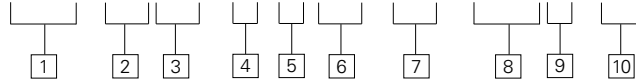
Cartridge only



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-134.

---

- 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	120A - 120VAC
24D	24VDC	240A - 240VAC
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
  - P - 1/2" NPT conduit port w/leadwire
  - Q - Spade terminals
  - W - Leadwire
  - N - Deutsch (DC only)
  - Y - Amp JR (DC only)
- For coil dimensions see page C-5.

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

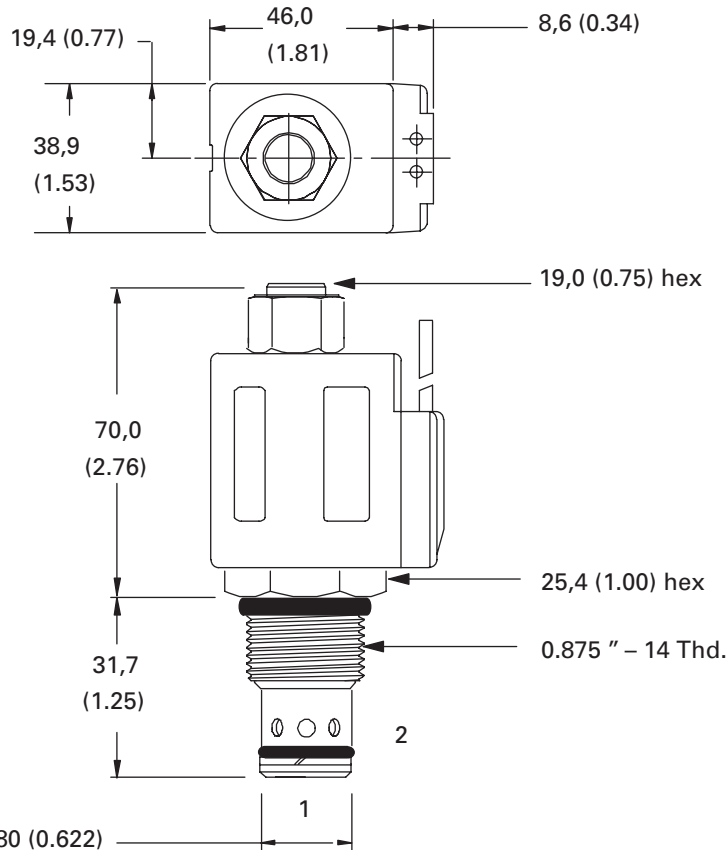
Note  
Use 10 series, 20 W coils with this solenoid valve.

**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

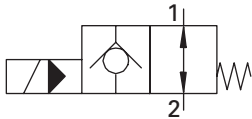
The SV13-10-O is a 2-way, 2-position, pilot operated, poppet type, normally open screw-in solenoid cartridge valve.

## Operation

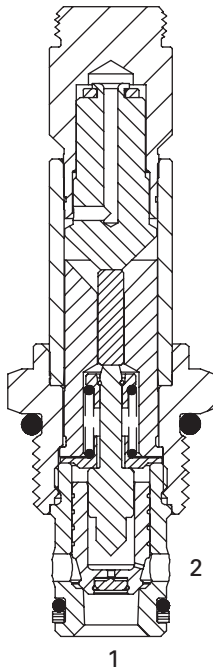
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2.

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



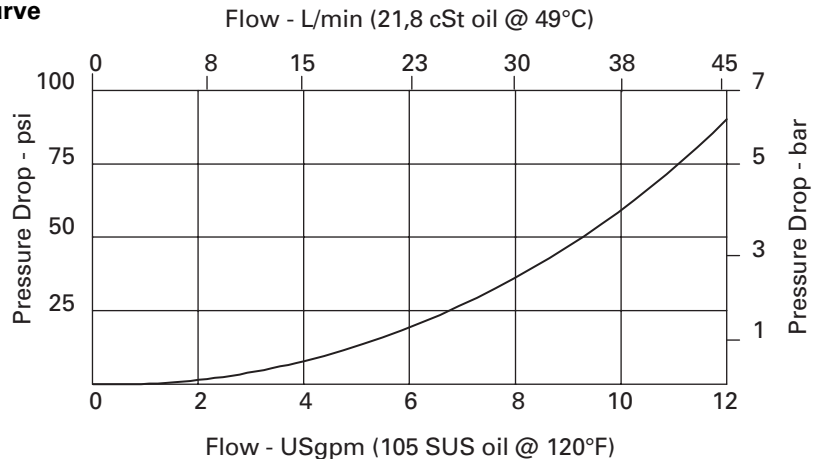
## RATINGS AND SPECIFICATIONS

*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

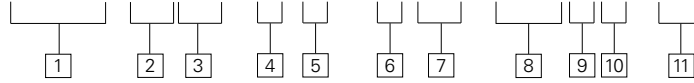


## Application Note

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-134.

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

**7 Port Size**

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

See section J for housings.

**8 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**10 Coil series**  
**H** - 10 series, 26 W  
 For dimensions see page C-6.

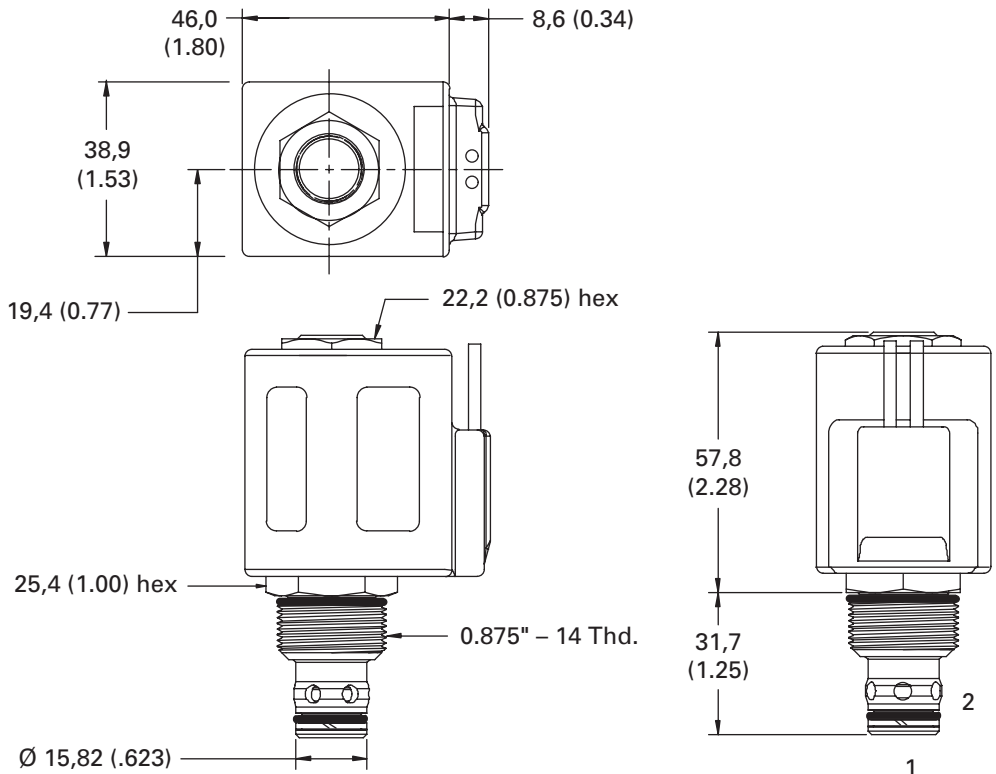
**11 Special features**  
**00** - None  
 (Only required if valve has special features, omitted if "00.")

**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

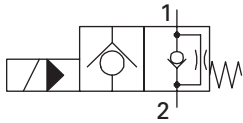
The SV5-10-O is a 2-way, 2-position, poppet type, pilot operated, normally open, screw-in cartridge solenoid valve.

## Operation

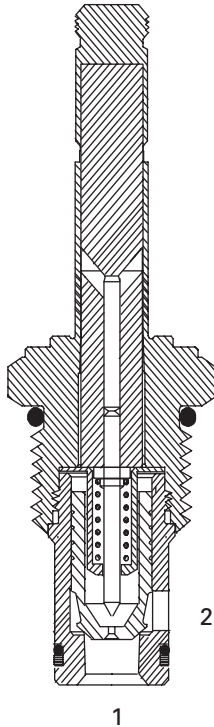
In the de-energized position, flow from port 1 to port 2 is restricted while free flow is allowed from port 2 to port 1.

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



## Sectional View



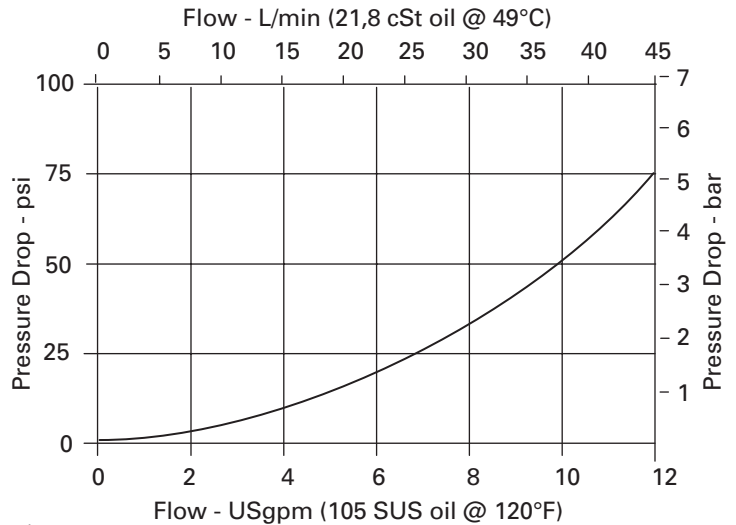
## RATINGS AND SPECIFICATIONS

*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®) <small>Viton is a registered trademark of E.I. DuPont</small>

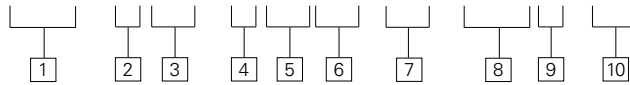
## Pressure Drop Curve

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-134.

---

- 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**

24A	24VAC
120A	120VAC
240A	240VAC
12B	12VDC/w diode*
24B	24VDC/w diode*
36D	36VDC

\*Optional arc suppression diode.

- 9 Connector types**
- Blank - No coil
  - G - ISO 4400 DIN 43650
  - P - 1/2" NPT conduit port w/leadwire
  - Q - Spade terminals
  - W - Leadwire
  - N - Deutsch (DC only)
  - Y - Amp JR (DC only)
- For coil dimensions see page C-5.

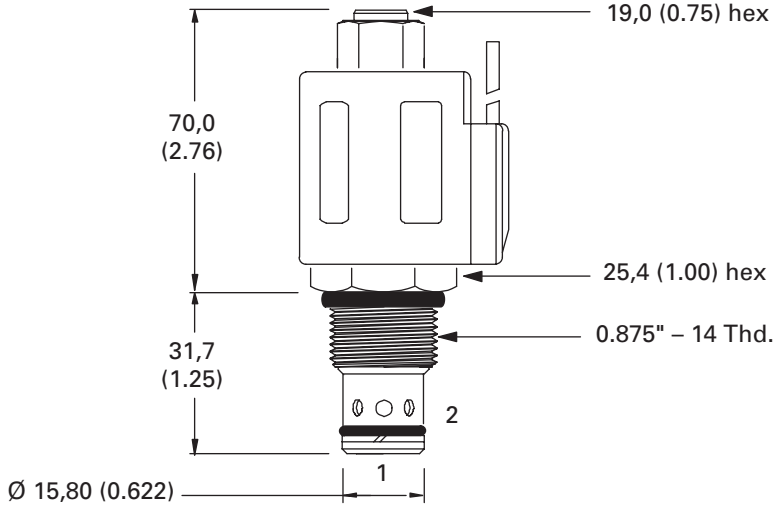
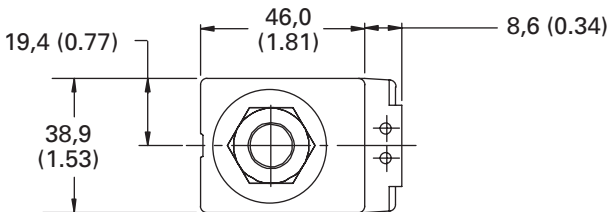
- 10 Special features**
- 00 - None
- (Only required if valve has special features, omitted if "00.")
- Note
- Use 10 series, 20 W coils with this solenoid valve.

**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.



# SV15-10-O/OP/OS

Poppet type normally open solenoid valve, 350 bar

## Description

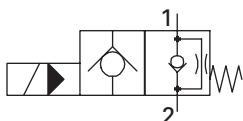
The SV15-10-O is a 2-way, 2-position, pilot operated, poppet type, normally open screw-in cartridge solenoid valve.

## Operation

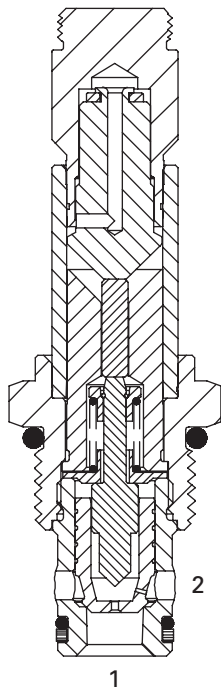
In the de-energized position, flow from port 1 to port 2 is restricted, while free flow is allowed from port 2 to port 1.

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



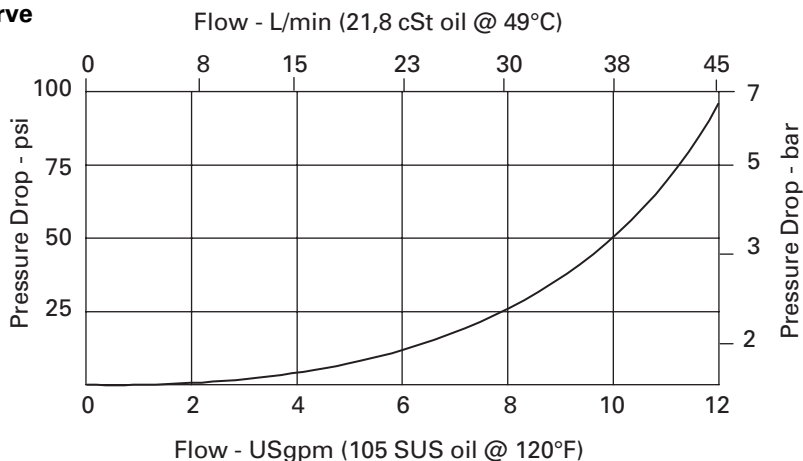
## RATINGS AND SPECIFICATIONS

*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

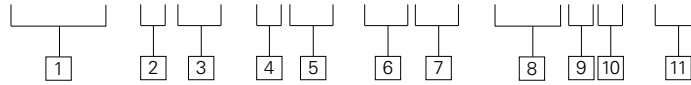


## Application Note

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-134.

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

**7 Port Size**

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

See section J for housings.

**8 Voltage rating**  
**00** - No coil  
**12D** - 12VDC  
**24D** - 24VDC  
**36D** - 36VDC  
**24A** - 24VAC  
**120A** - 120VAC  
**240A** - 240VAC  
**12B** - 12VDC/w diode\*  
**24B** - 24VDC/w diode\*  
 \*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**10 Coil series**  
**H** - 10 series, 26 W  
 For coil dimensions see page C-6.

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

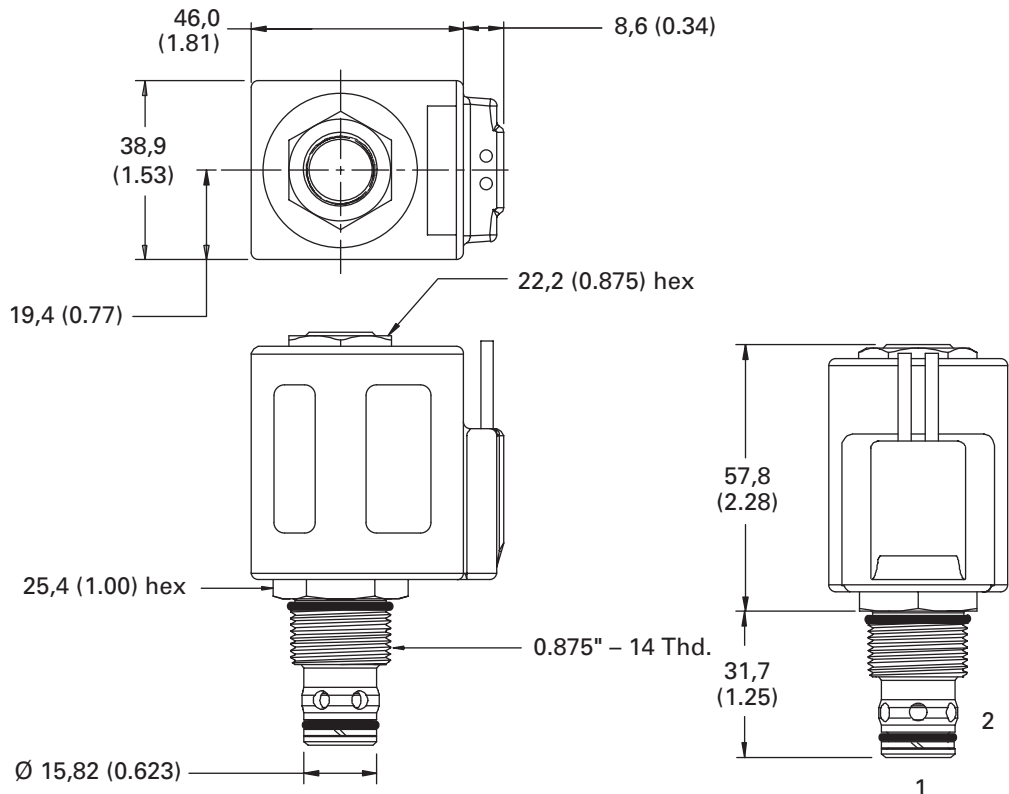
**Dimensions**

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

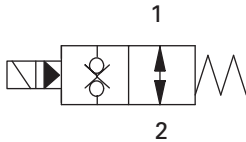
## Description

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

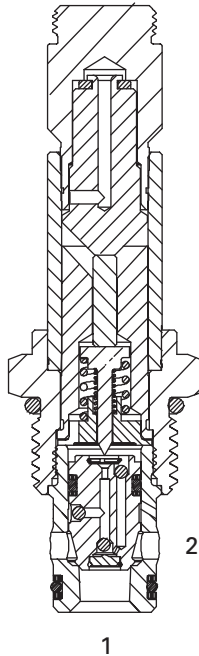
## Operation

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



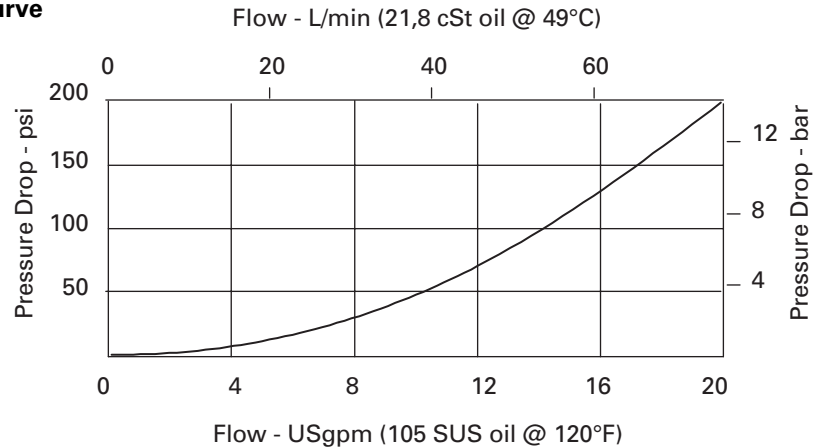
## RATINGS AND SPECIFICATIONS

*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

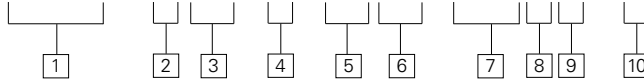
Cartridge only



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
<b>0</b>	Cartridge only		
<b>2G</b>	1/4" BSPP	876702	02-175102
<b>3G</b>	3/8" BSPP	876703	02-175103
<b>3B</b>	3/8" BSPP	02-175462*	–
<b>6H</b>	SAE 6	876700	–
<b>6T</b>	SAE 6	566151*	02-175100
<b>8H</b>	SAE 8	876701	–
<b>8T</b>	SAE 8	–	02-175101

\*Light duty housings.  
 See section J for housings.

**7 Voltage rating**  
**00** - No coil  
**12D** - 12VDC  
**24D** - 24VDC  
**36D** - 36VDC

**24A** - 24VAC  
**120A** - 120VAC  
**240A** - 240VAC  
**12B** - 12VDC/w diode\*  
**24B** - 24VDC/w diode\*  
 \*Optional arc suppression diode.

**8 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**9 Coil series**  
**H** - 10 series, 26 W  
 For coil dimensions see page C-6.

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

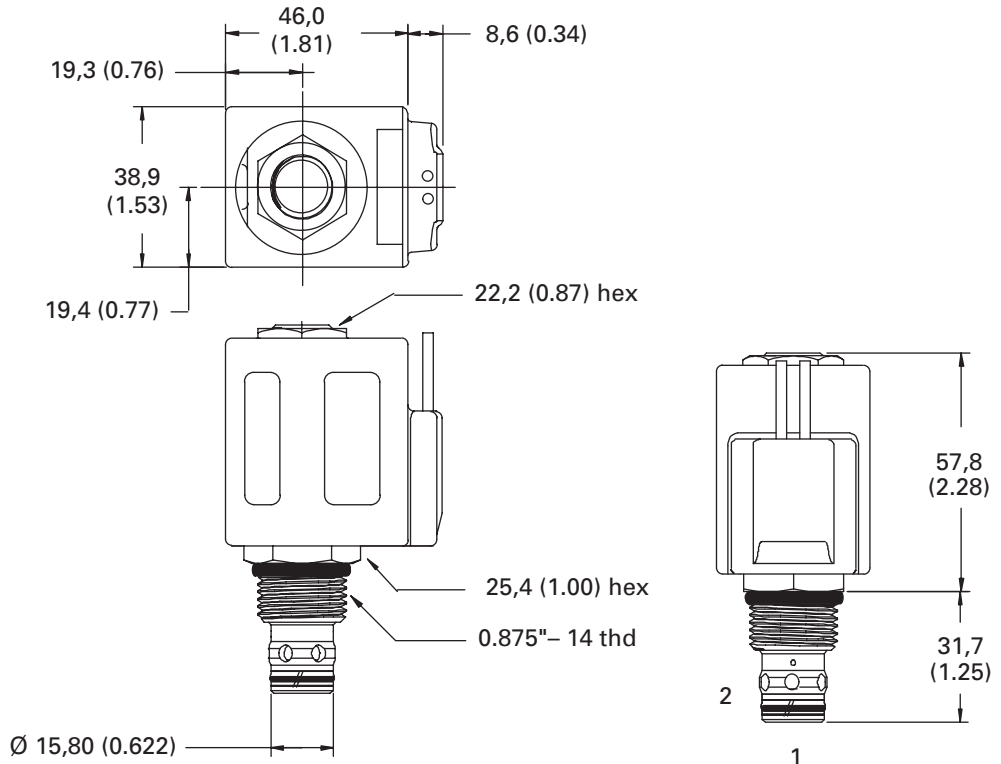
**Dimensions**  
 mm (inch)

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

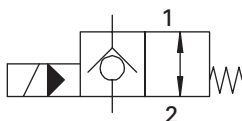
The SV3-12-O is a 2-way, 2-position, poppet-type, pilot-operated, normally open solenoid cartridge valve.

## Operation

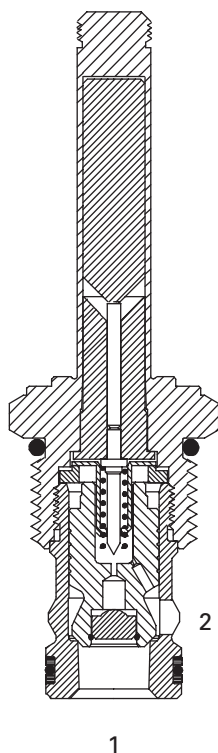
In the de-energized position, flow can pass through the valve from port 1 to port 2, or from port 2 to port 1.

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



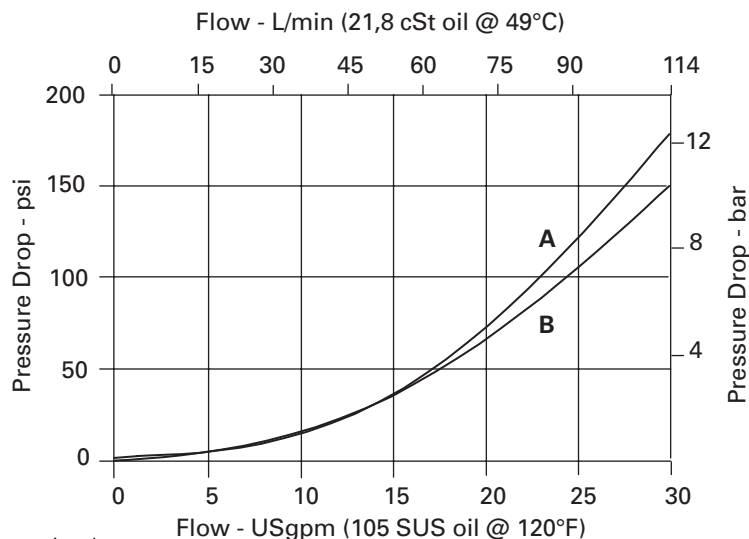
## RATINGS AND SPECIFICATIONS

*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

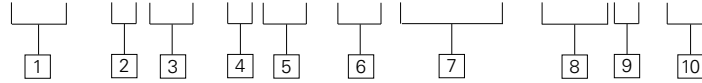
## Pressure Drop Curves

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-134.

---

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

**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	120A - 120VAC
24D - 24VDC	240A - 240VAC
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
  - P - 1/2" NPT conduit port w/leadwire
  - Q - Spade terminals
  - W - Leadwire
  - N - Deutsch (DC only)
  - Y - Amp JR (DC only)
- For coil dimensions see page C-5.

- 10 Special features**
- 00 - None
- (Only required if valve has special features, omitted if "00.")
- Note
- Use 10 series, 20 W coils with this solenoid valve.

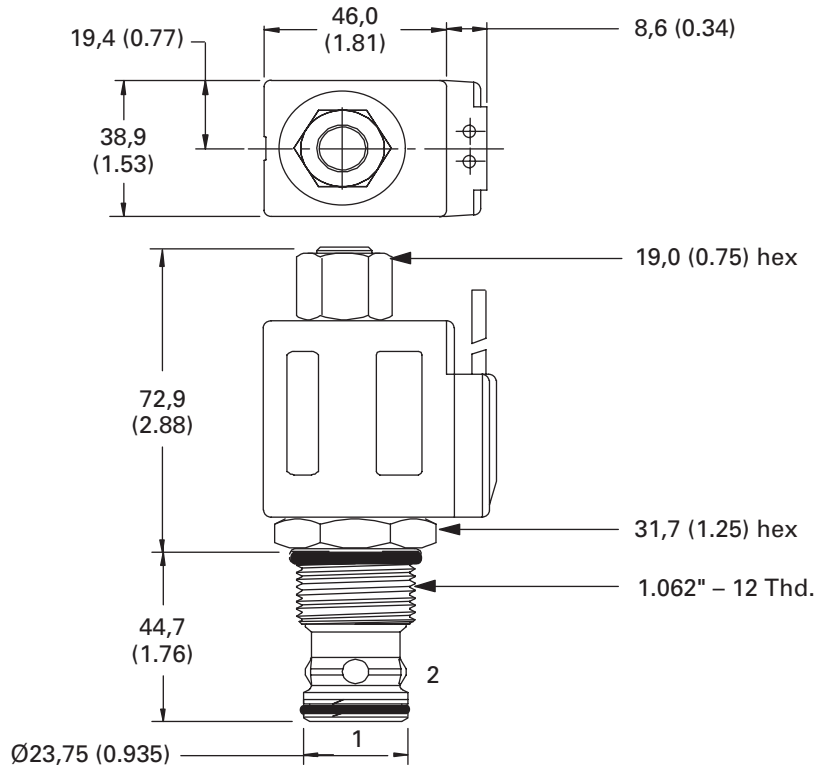
**Dimensions**

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.



# SV13-12-O/OP/OS

Poppet type normally open solenoid valve, 350 bar

## Description

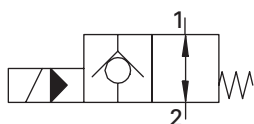
The SV13-12-O is a 2-way, 2-position, pilot operated, poppet type, normally open screw-in cartridge solenoid valve.

## Operation

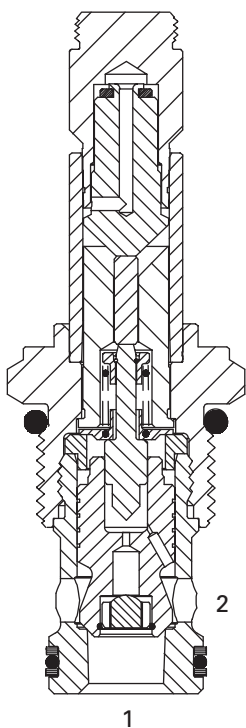
In the de-energized position, flow can pass through the valve from port 1 to port 2, or from port 2 to port 1.

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



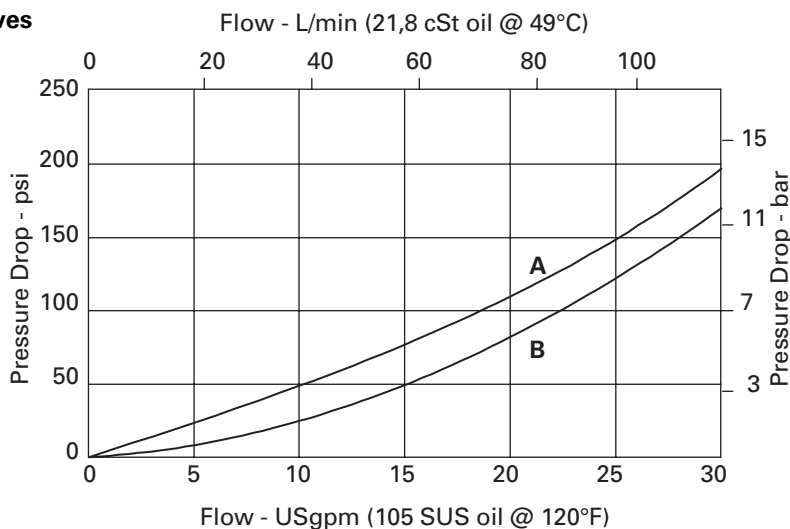
## RATINGS AND SPECIFICATIONS

*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

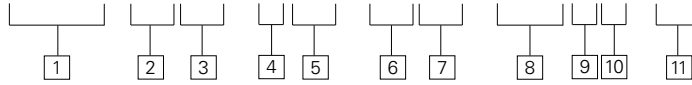


- A** - Port 1 to port 2 de-energized
- B** - Port 2 to port 1 de-energized

## 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.

**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-134.

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

**7 Port Size**

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

See section J for housings.

**8 Voltage rating**  
**00** - No coil  
**12D** - 12VDC  
**24D** - 24VDC  
**36D** - 36VDC  
**24A** - 24VAC  
**120A** - 120VAC  
**240A** - 240VAC  
**12B** - 12VDC/w diode\*  
**24B** - 24VDC/w diode\*  
 \*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**10 Coil series**  
**H** - 10 series, 26 W  
 For coil dimensions see page C-6.

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

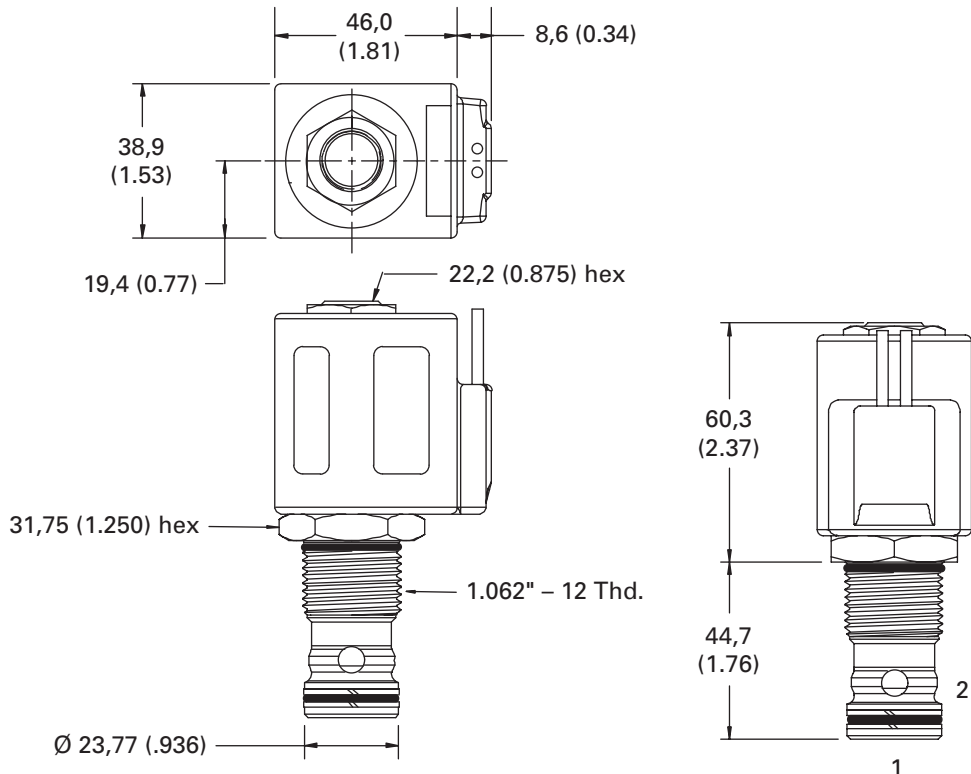
**Dimensions**

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

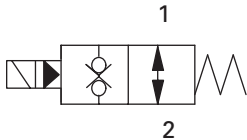
## Description

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

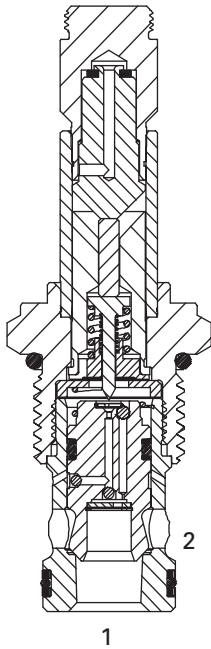
## Operation

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



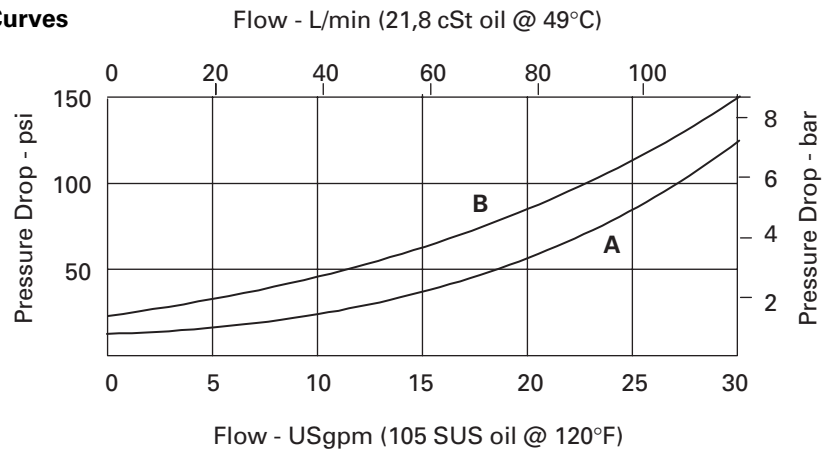
## RATINGS AND SPECIFICATIONS

*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

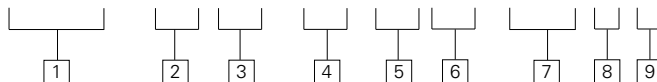
Cartridge only



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

See section J for housings.

**7 Voltage rating**

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

**24A** - 24VAC  
**120A** - 120VAC  
**240A** - 240VAC  
**12B** - 12VDC/w diode\*  
**24B** - 24VDC/w diode\*  
 \*Optional arc suppression diode.

**8 Connector types**

**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**9 Coil series**

**H** - 10 series, 26 W  
 For coil dimensions see page C-6.

**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**

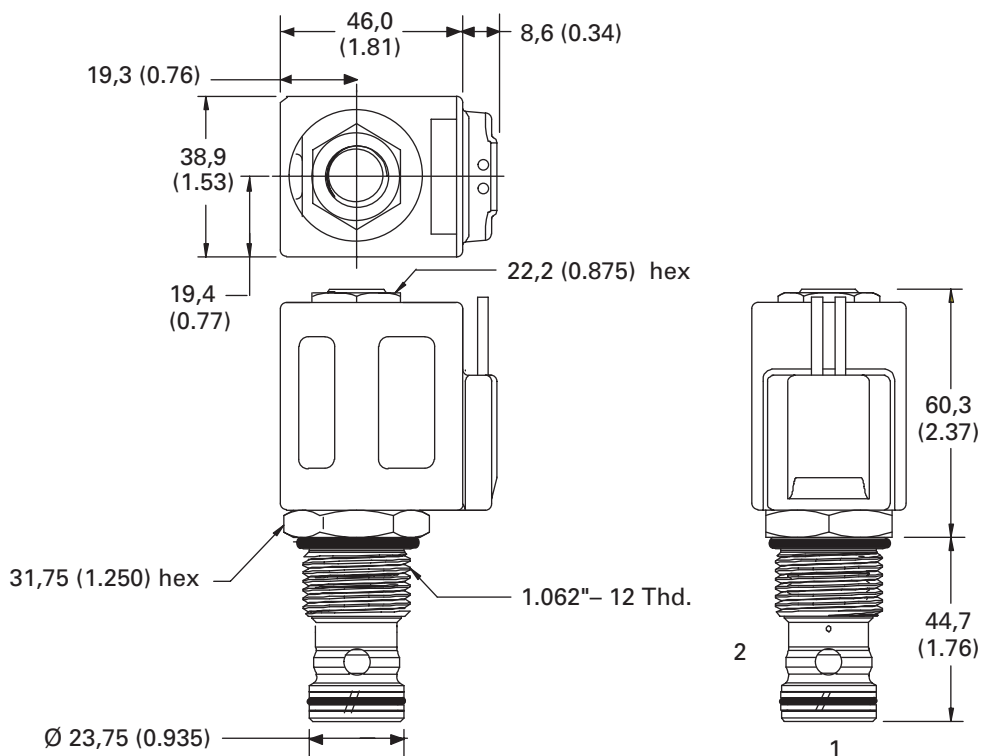
When solenoid valve is ordered as cartridge only, nut is included.



**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

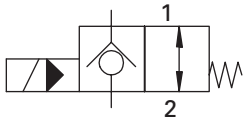
The SV3-16-O is a 2-way, 2-position, poppet type, pilot operated, normally open, screw-in cartridge solenoid valve.

## Operation

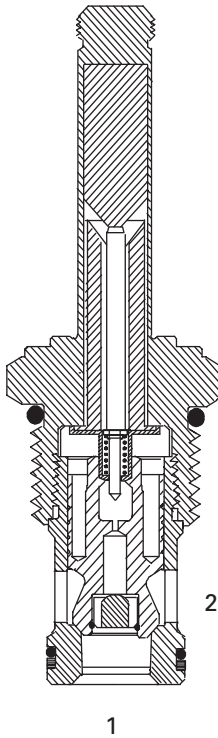
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2.

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



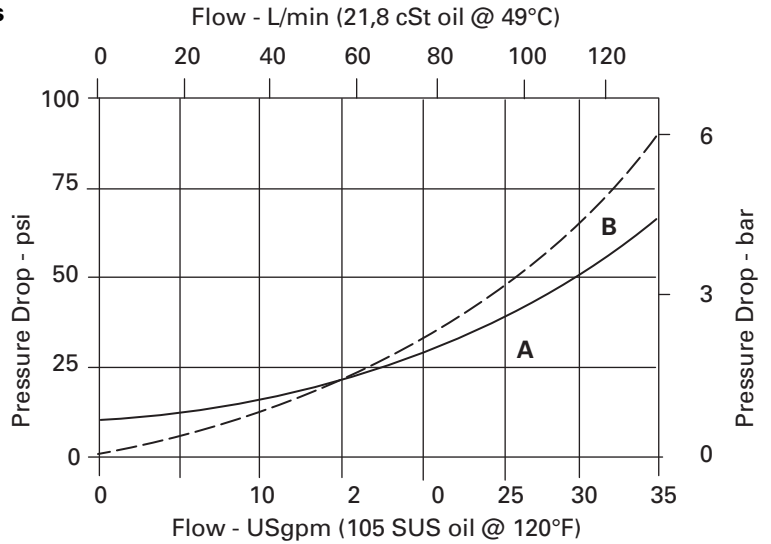
## RATINGS AND SPECIFICATIONS

*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

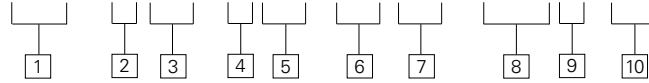
Cartridge only



**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-134.

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

**7 Port Size**

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

See section J for housings.  
 \*Light duty housing

**8 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)  
 For coil dimensions see page C-S.


**10 Special features**  
**00** - None  
 (Only required if valve has special features, omitted if "00.")  
 Note  
 Use 10 series, 20 W coils with this solenoid valve.

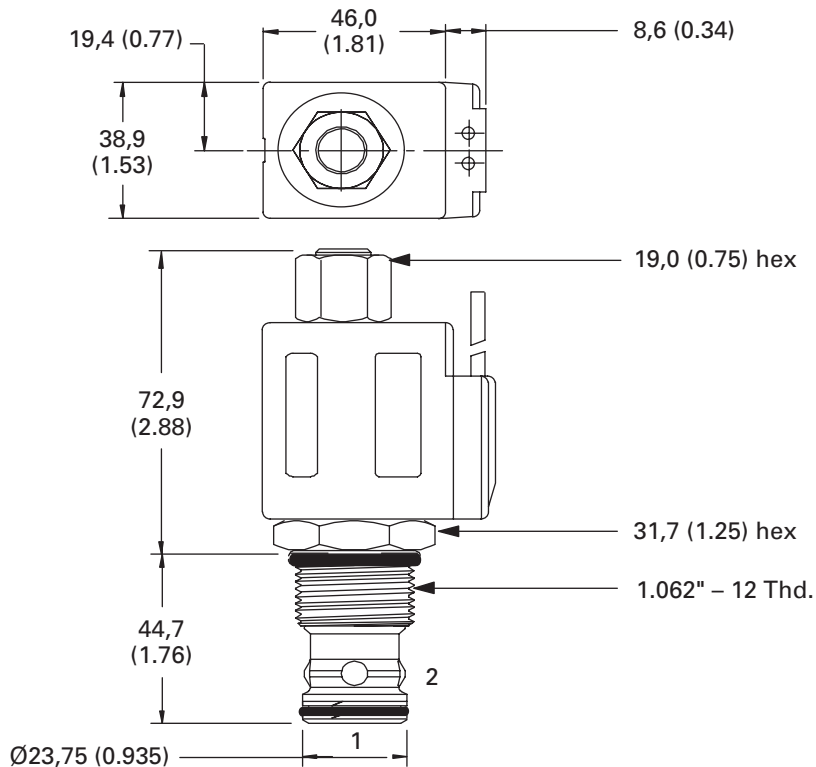
**Dimensions**

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.



# SV13-16-O/OP/OS

Poppet type normally open solenoid valve, 350 bar

## Description

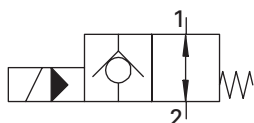
The SV13-16-O is a 2-way, 2-position, pilot operated, poppet type, normally open screw-in cartridge solenoid valve.

## Operation

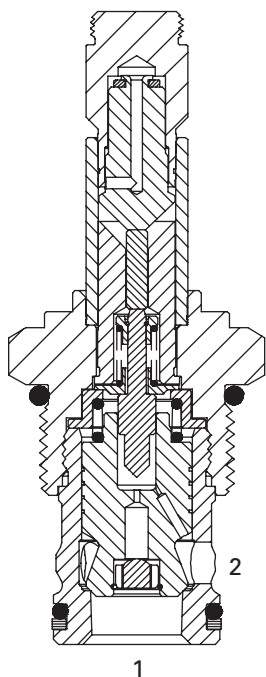
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2. In the energized position,

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.

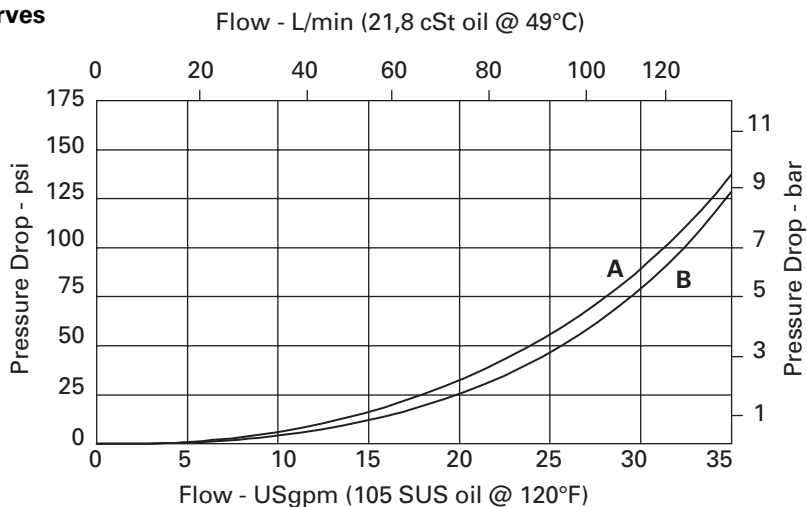
## RATINGS AND SPECIFICATIONS

*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

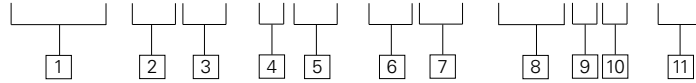
## Pressure Drop Curves

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-134.

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

**7 Port Size**

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

See section J for housings.

**8 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

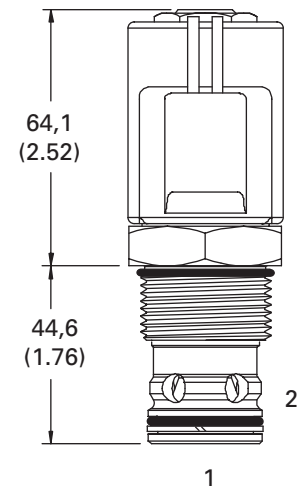
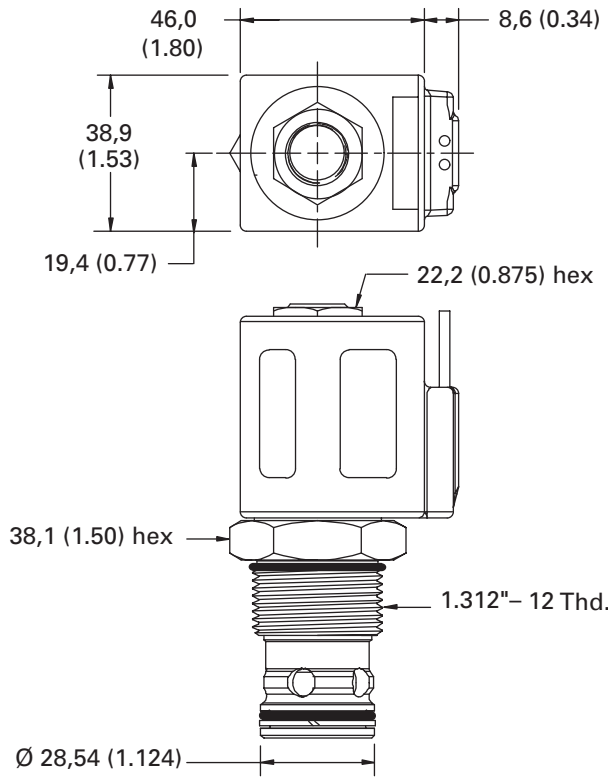
**10 Coil series**  
**H** - 10 series, 26 W  
 For coil dimensions see page C-6.


**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

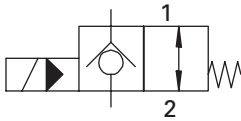
The SV3-20-O is a 2-way, 2-position, poppet type, pilot operated, normally open, screw-in cartridge solenoid valve.

## Operation

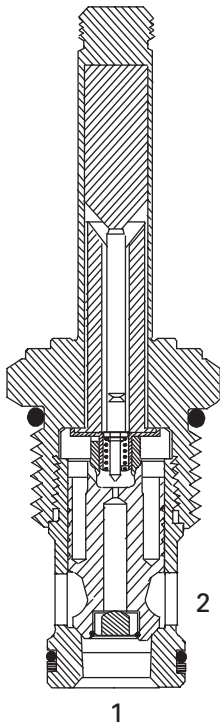
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2. In the energized position,

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



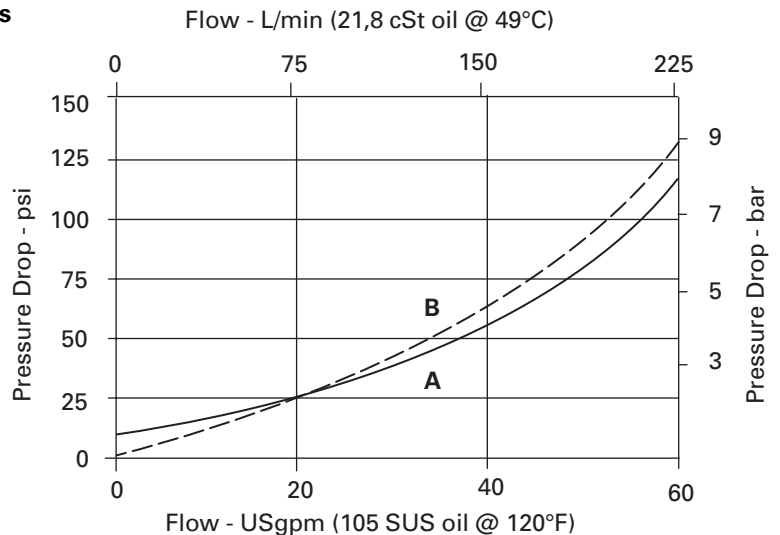
## RATINGS AND SPECIFICATIONS

*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>

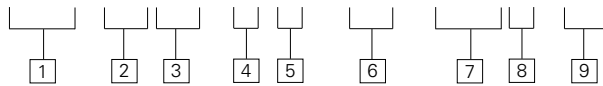
## Pressure Drop Curves

Cartridge only



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

**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-134.

**6 Port Size**

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

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

**7 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**8 Connector types**

**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

For coil dimensions see page C-5.

**9 Special features**

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

**Note**

Use 10 series, 20 W coils with this solenoid valve.

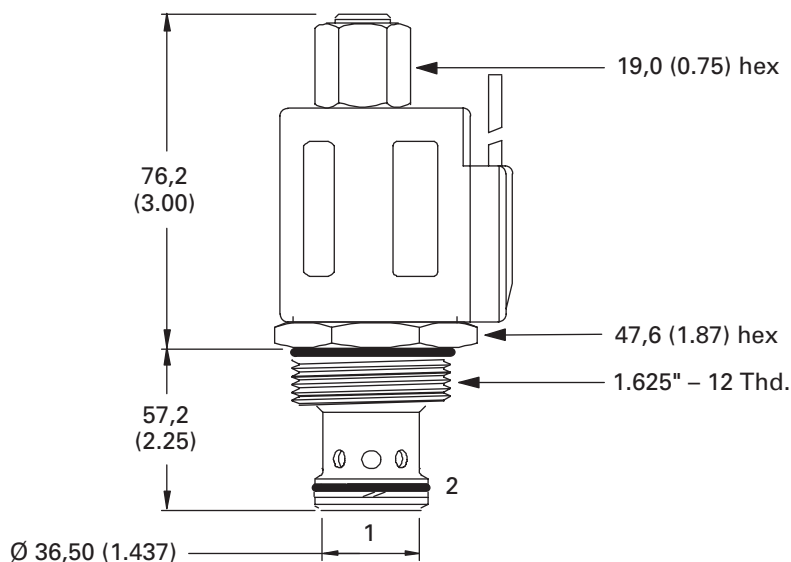
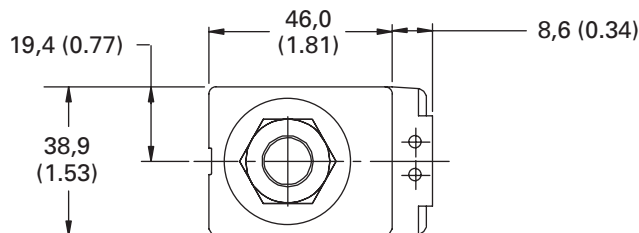
**Dimensions**

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

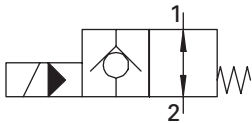
The SV13-20-O is a 2-way, 2-position, pilot operated, poppet type, normally open screw-in cartridge solenoid valve.

## Operation

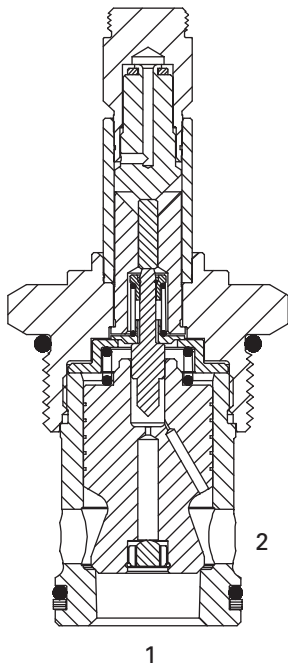
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2. In the energized position,

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



## Sectional View



## RATINGS AND SPECIFICATIONS

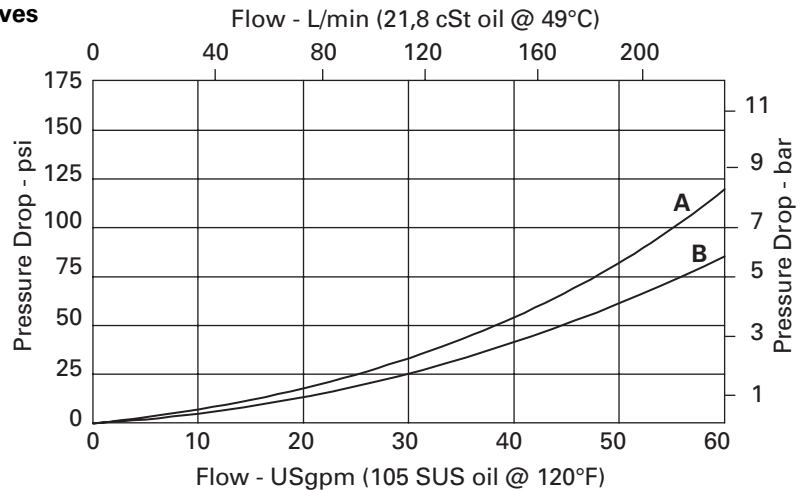
*Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)*

Typical application pressure (all ports)	350 bar (5000 psi)*
Cartridge fatigue pressure (infinite life)	210 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

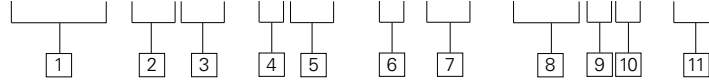


- A** - Port 2 to port 1 de-energized
- B** - Port 1 to port 2

## 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.

**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-134.

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

**7 Port Size**

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

See section J for housings.

**8 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**10 Coil series**  
**H** - 10 series, 26 W  
 For coil dimensions see page C-6.

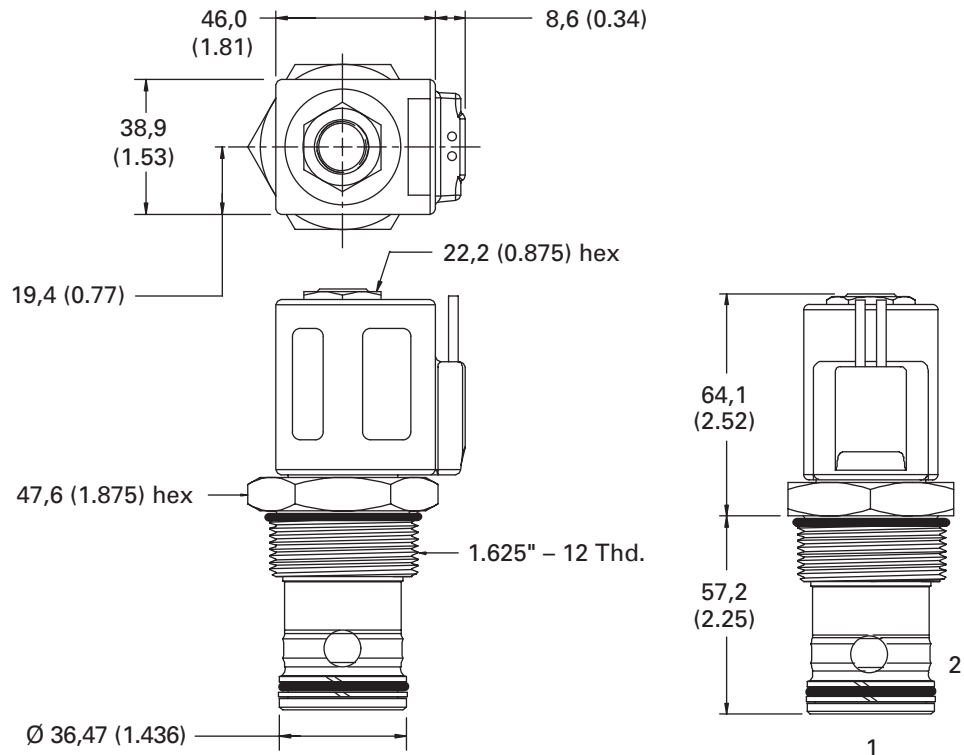
**9 Special features**  
**00** - None  
 (Only required if valve has special features, omitted if "00.")

**Dimensions**

mm (inch)

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

Note  
 When solenoid valve is ordered as cartridge only, 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-O/OM

Poppet type, normally open solenoid valve

## Description

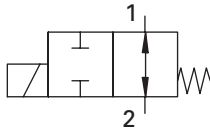
The SV4-8-O is a 2-way, spool type, direct acting, normally open, solenoid valve.

## Operation

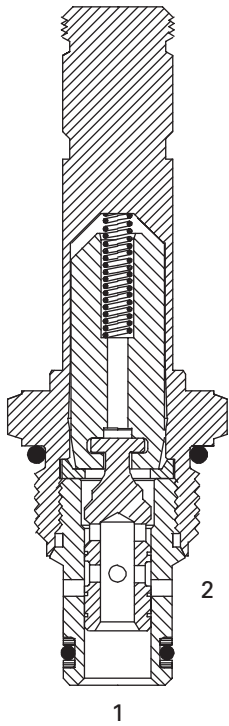
In the de-energized position, the SV4-8-O valve allows bi-directional flow between ports 1 and 2.

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

## Functional Symbol



## Sectional View



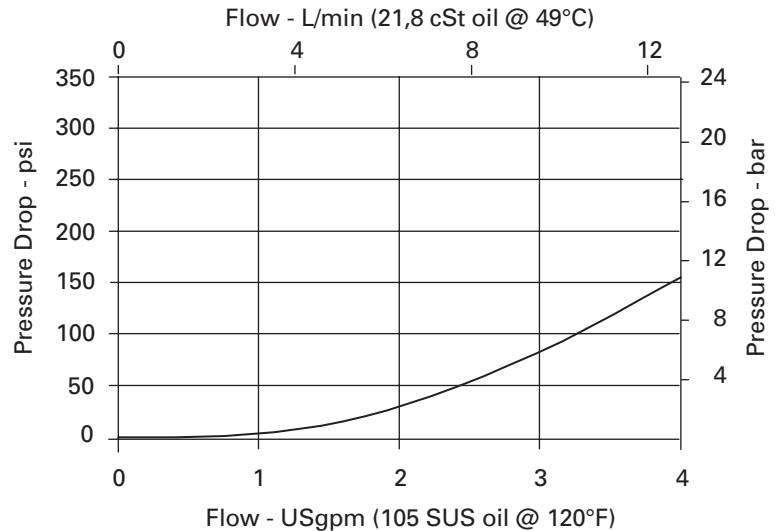
## RATINGS AND SPECIFICATIONS

*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 <sup>3</sup> /min (5 in <sup>3</sup> /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®) Viton is a registered trademark of E.I. DuPont

## Pressure Drop Curve

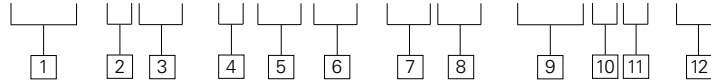
Cartridge only



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-135.

---

- 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	120A - 120VAC
24D - 24VDC	240A - 240VAC
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  
P - 1/2" NPT conduit port w/leadwire  
Q - Spade terminals  
W - Leadwire  
N - Deutsch (DC only)  
Y - Amp JR (DC only)

- 11 Coil series**  
S - 8 series, 16 W  
For coil part numbers see page C-3.

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

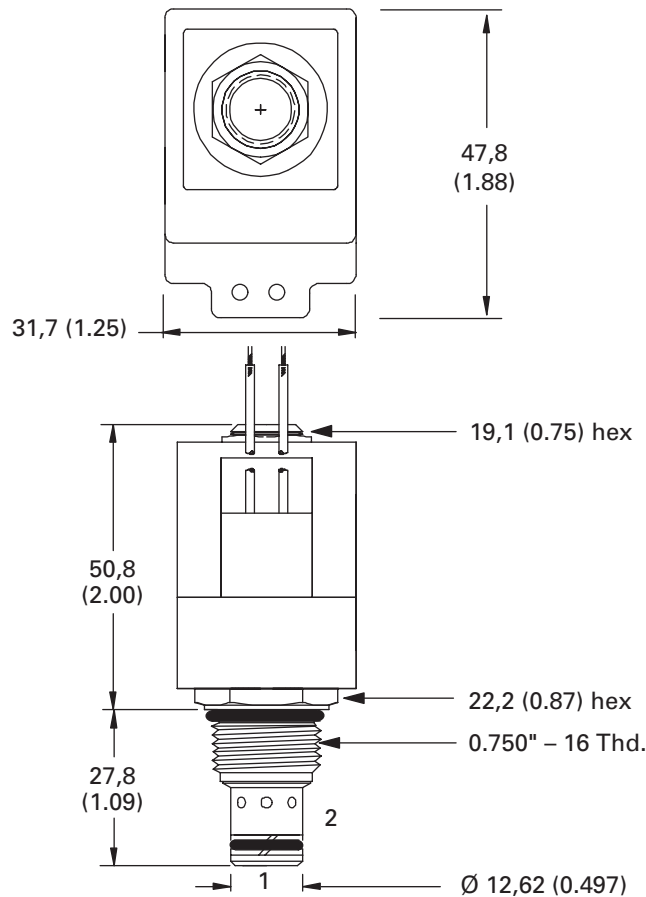
**Dimensions**

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

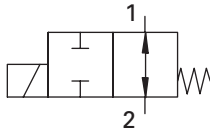
The SV14-8-O is a 2-way, 2-position, spool type, direct acting, normally open screw-in cartridge solenoid valve.

## Operation

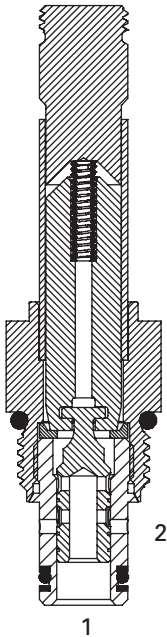
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2.

In the energized position, both ports are closed.

## Functional Symbol



## Sectional View



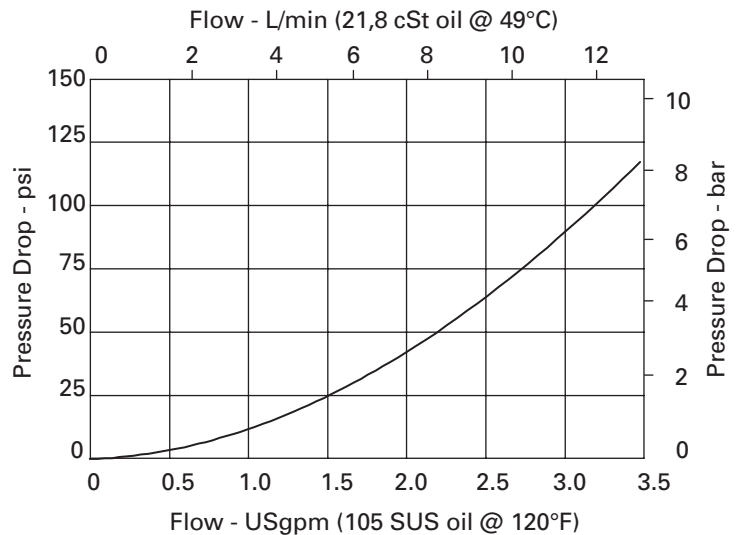
## RATINGS AND SPECIFICATIONS

*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 <sup>3</sup> /min (8.5 in <sup>3</sup> /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®) Viton is a registered trademark of E.I. DuPont

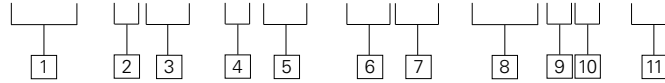
## Pressure Drop Curve

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

For valve dimensions with manual override option installed see page A-135.

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

**7 Port Size**

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

See section J for housings.

**8 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**10 Coil series**  
**P** - 8 series, 20 W  
 For coil dimensions see page C-4.

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

**Dimensions**

mm (inch)

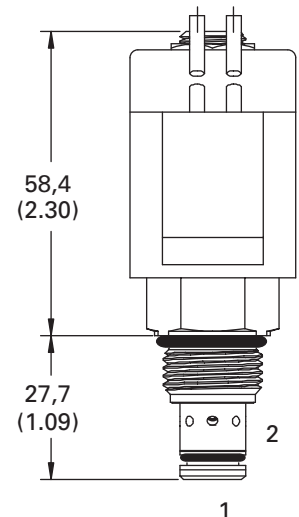
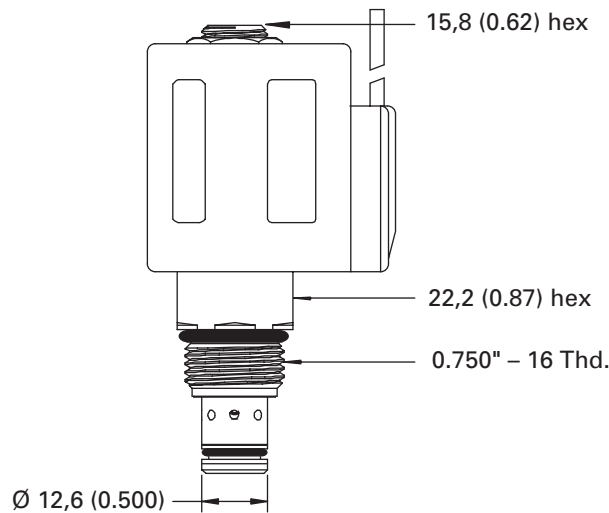
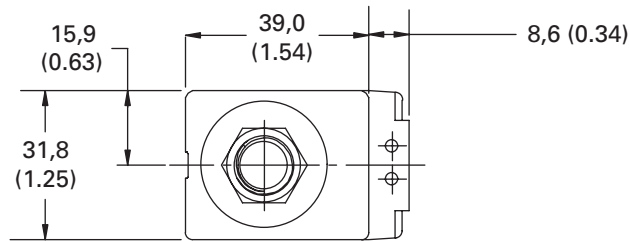
Torque cartridge in steel or aluminum housing  
 34-41 Nm (25-30 ft. lbs)

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

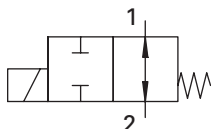
The SV4-10-O is a 2-way, 2-position, spool type, direct acting, normally open, screw-in cartridge solenoid valve.

## Operation

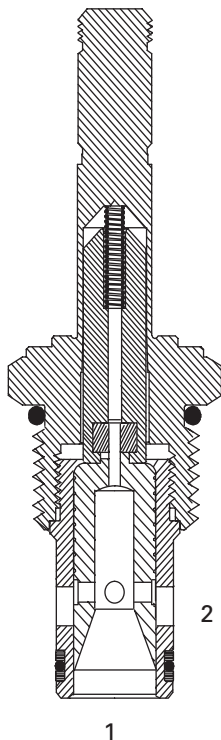
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2.

In the energized position both ports are closed.

## Functional Symbol



## Sectional View



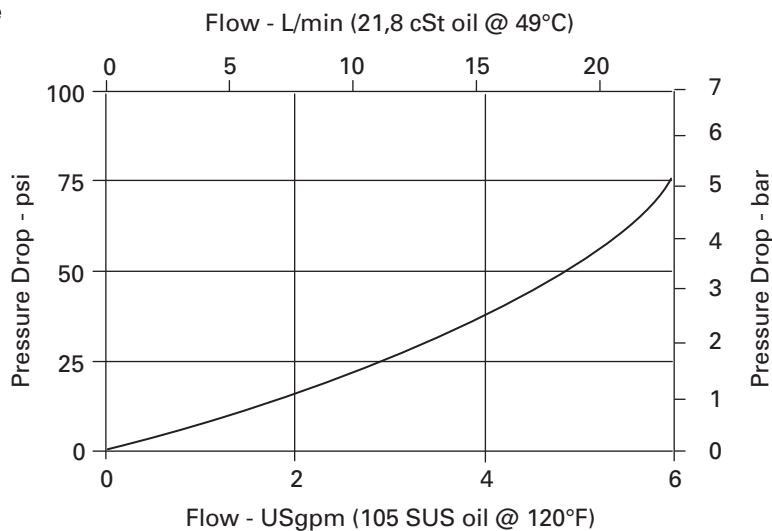
## RATINGS AND SPECIFICATIONS

*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 <sup>3</sup> /min (5 in <sup>3</sup> /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

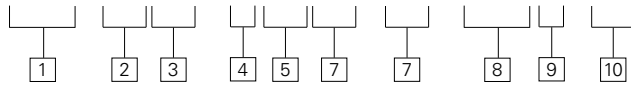
## Pressure Drop Curve

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-135.

---

- 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	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	120A - 120VAC
24D	24VDC	240A - 240VAC
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
  - P - 1/2" NPT conduit port w/leadwire
  - Q - Spade terminals
  - W - Leadwire
  - N - Deutsch (DC only)
  - Y - Amp JR (DC only)
- For coil dimensions see page C-5.

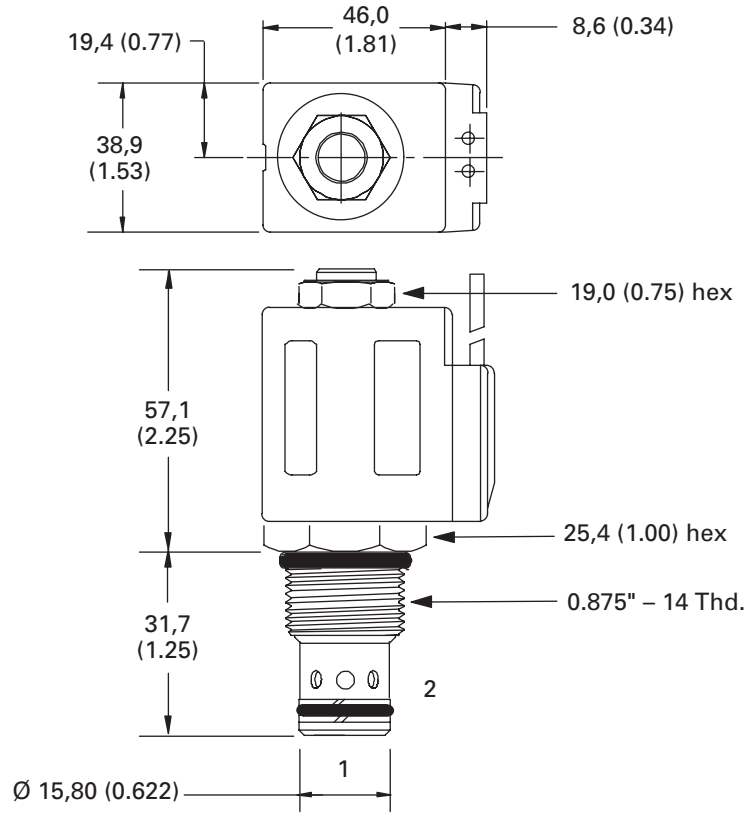
- 10 Special features**
- 00 - None
- (Only required if valve has special features, omitted if "00.")
- Note  
Use 10 series, 20 W coils with this solenoid valve.

**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.



# SV14-10-O/OM

Spool type, normally open solenoid valve, 350 bar

## Description

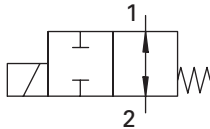
The SV14-10-O is a 2-way, 2-position, spool type, direct acting, normally open screw-in cartridge solenoid valve.

## Operation

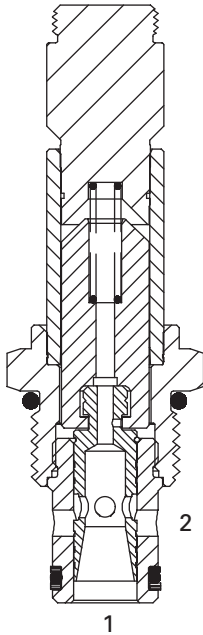
In the de-energized position, this valve allows bi-directional flow between port 1 and port 2.

In the energized position, both ports are closed.

## Functional Symbol



## Sectional View



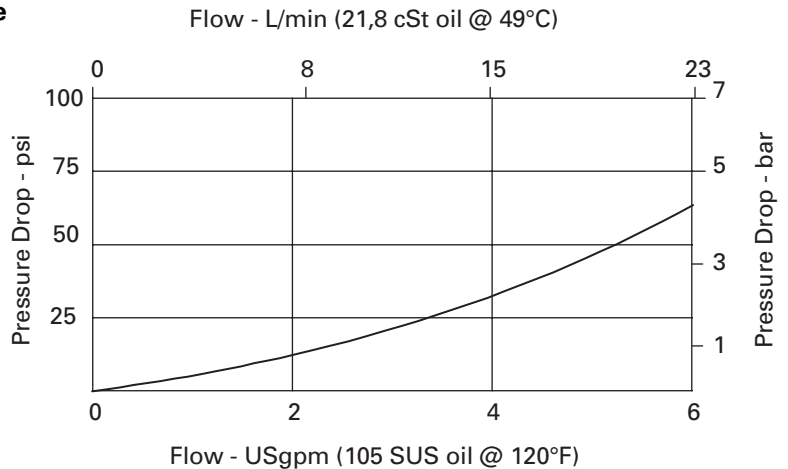
## RATINGS AND SPECIFICATIONS

*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 <sup>3</sup> /min. (8.5 in <sup>3</sup> /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

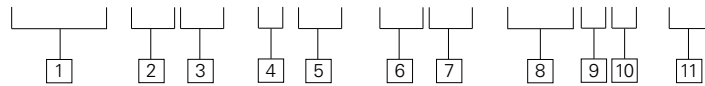
## Pressure Drop Curve

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-135.

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

**7 Port Size**

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

See section J for housings.

**8 Voltage rating**  
**Blank** - No coil  
**12D** - 12VDC  
**24D** - 24VDC  
**36D** - 36VDC  
**24A** - 24VAC  
**120A** - 120VAC  
**240A** - 240VAC  
**12B** - 12VDC/w diode\*  
**24B** - 24VDC/w diode\*  
 \*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**10 Coil series**  
**H** - 10 series, 26 W  
 For coil dimensions see page C-6.

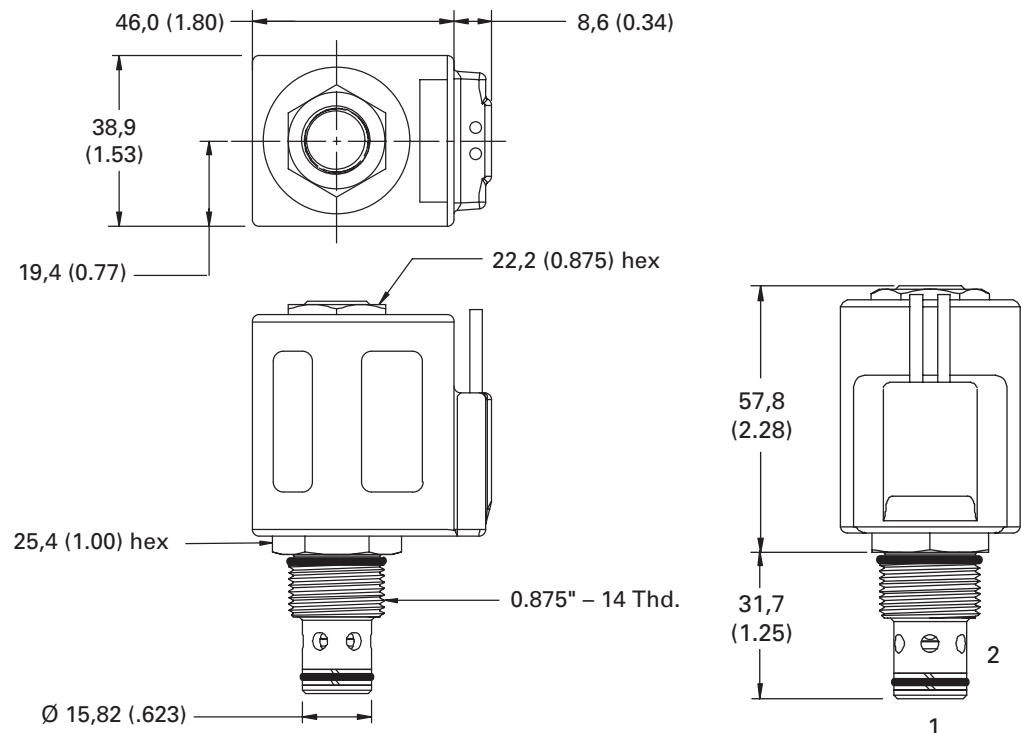
**11 Special features**  
**00** - None  
 (Only required if valve has special features, omitted if "00.")

**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

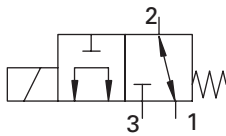
lines, such as a single acting cylinder, or any other application where a three-way, two-position solenoid valve is needed.

## Operation

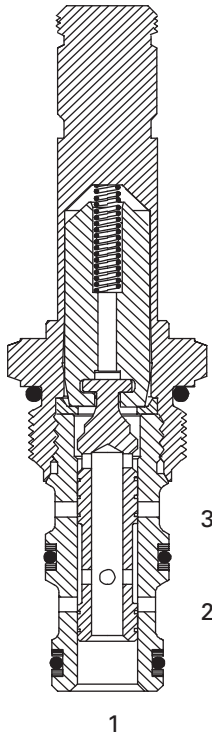
In the de-energized position, the SV1-8-3 allows flow from port 2 to port 1, while port 3 is blocked.

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

## Functional Symbol



## Sectional View



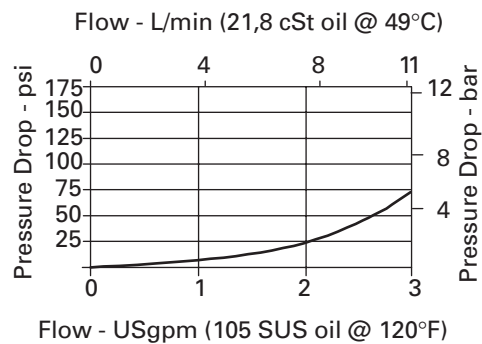
## RATINGS AND SPECIFICATIONS

*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 <sup>3</sup> /min (5 in <sup>3</sup> /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>

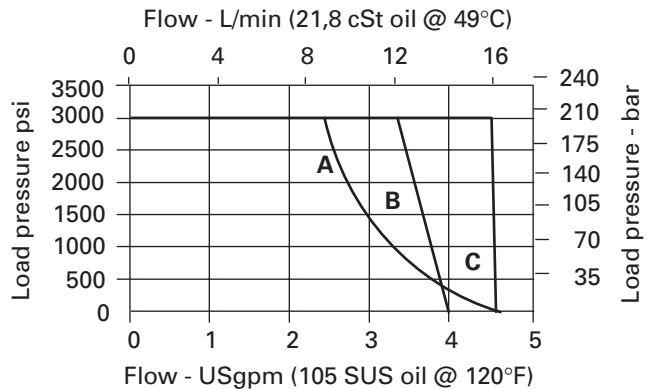
## Pressure Drop Curves

Cartridge only



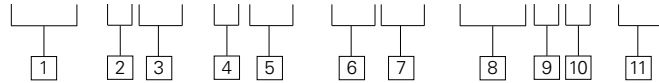
## Operating Limits

- 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-135.

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

**7 Port Size**

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

See section J for housings.

**8 Voltage rating**  
**Blank** - No coil  
**12D** - 12VDC  
**24D** - 24VDC  
**36D** - 36VDC  
**24A** - 24VAC  
**120A** - 120VAC  
**240A** - 240VAC  
**12B** - 12VDC/w diode\*  
**24B** - 24VDC/w diode\*  
 \*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**10 Coil series**  
**S** - 8 series, 16 W

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

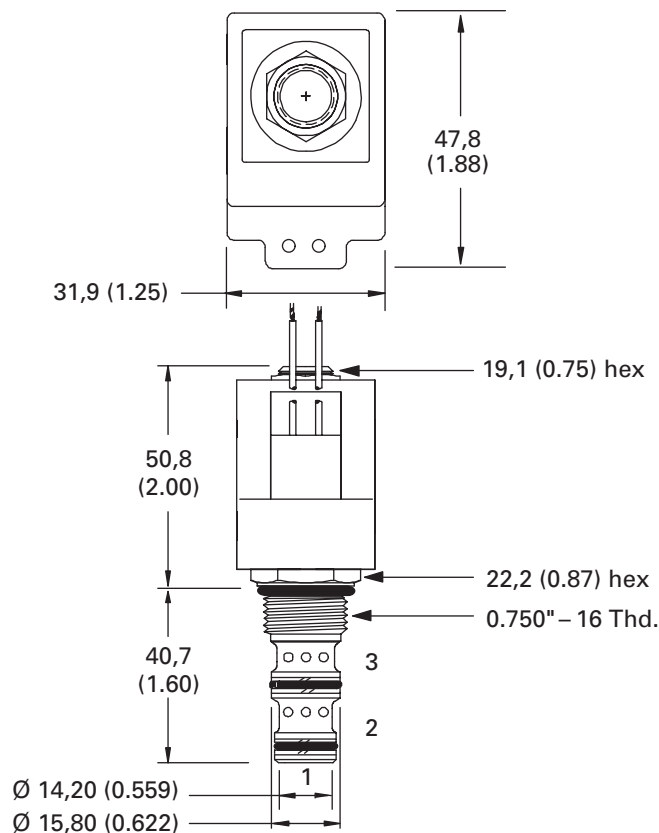
**Dimensions**

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

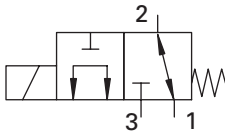
The SV11-8-3 is a 3-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

## Operation

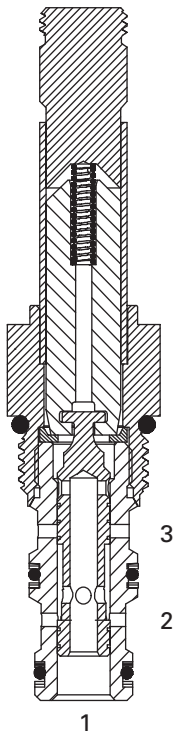
In the de-energized position, this valve allows flow from port 2 to port 1 while port 3 is blocked.

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)*

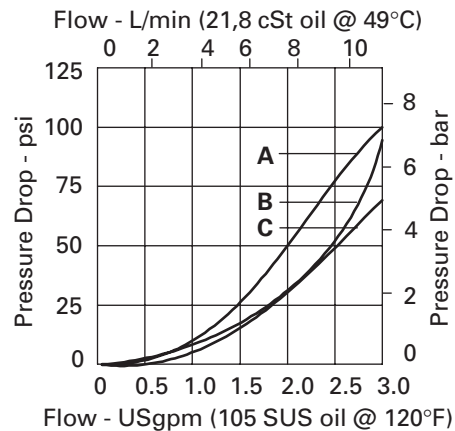
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	11 L/min (3 USgpm)
Internal leakage, combined port 2 and port 1	140 cm <sup>3</sup> /min. (8.5 in <sup>3</sup> /min.) max @ 350 bar (5000 psi)
Temperature range	-40° to 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

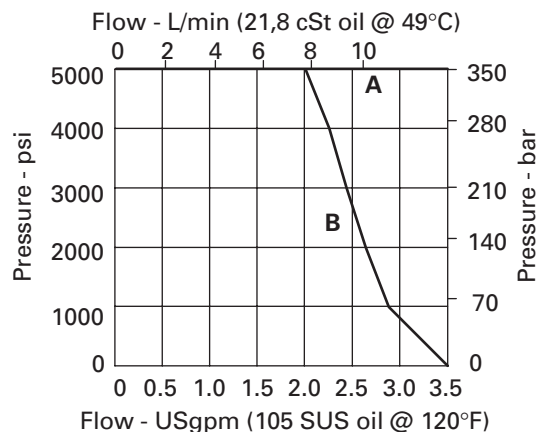
### Pressure drop vs. flow

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

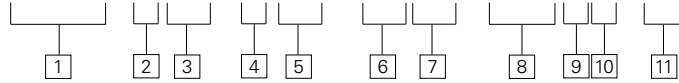


### Operating Limits

- 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-135.

- 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	02-160746
4T	SAE 4	02-160745
6T	SAE 6	02-160744

See section J for housings.

- 9 Connector types**  
Blank - No coil  
G - ISO 4400 DIN 43650  
P - 1/2" NPT conduit port w/leadwire  
Q - Spade terminals  
W - Leadwire  
N - Deutsch (DC only)  
Y - Amp JR (DC only)

---

- 10 Coil series**  
P - 8 series, 20 W  
For coil dimensions see page C-4.

---

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

- 8 Voltage rating**

00 - No coil	24A - 24VAC
12D - 12VDC	120A - 120VAC
24D - 24VDC	240A - 240VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

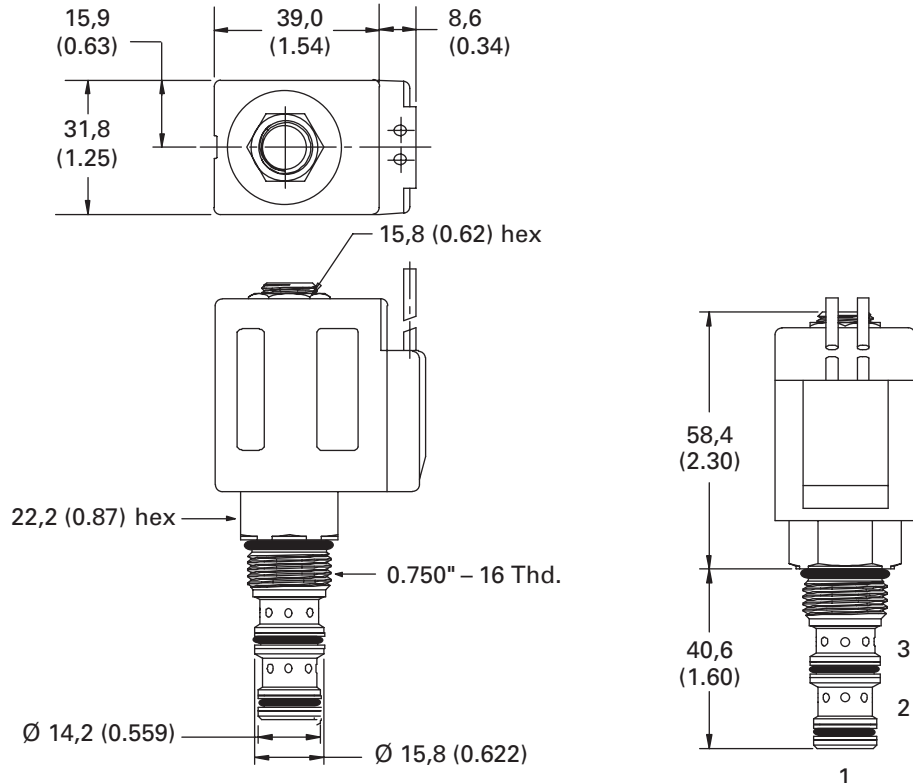
\*Optional arc suppression diode.


**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.

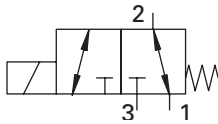
## Operation

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

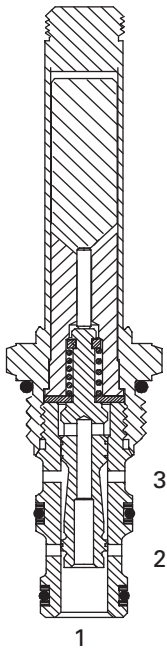
In the energized position, flow is allowed from port 2 to port 3, while blocking port 1.

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

## Functional Symbol



## Sectional View



## RATINGS AND SPECIFICATIONS

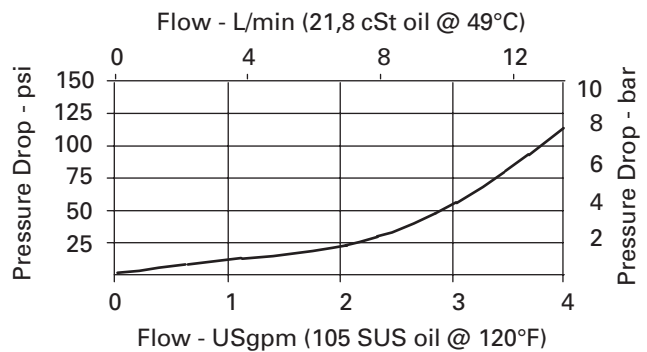
*Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)*

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 <sup>3</sup> /min (5 in <sup>3</sup> /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

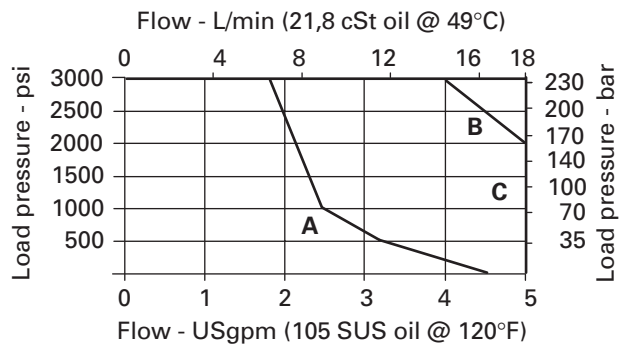
Cartridge only

Port 2 to port 1  
and port 2 to port 3

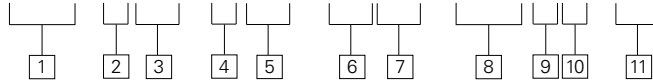


## Operating Limits

- 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  
P - Push type  
For valve dimensions with manual override option installed see page A-134.

- 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.

- 9 Connector types**  
Blank - No coil  
G - ISO 4400 DIN 43650  
P - 1/2" NPT conduit port w/leadwire  
Q - Spade terminals  
W - Leadwire  
N - Deutsch (DC only)  
Y - Amp JR (DC only)

---

- 10 Coil series**  
S - 8 series, 16 W  
For coil dimensions see page C-3.

---

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

- 8 Voltage rating**  
00 - No coil  
12D - 12VDC  
24D - 24VDC  
36D - 36VDC  
24A - 24VAC  
120A - 120VAC  
240A - 240VAC  
12B - 12VDC/w diode\*  
24B - 24VDC/w diode\*  
\*Optional arc suppression diode.

**Dimensions**

mm (inch)

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

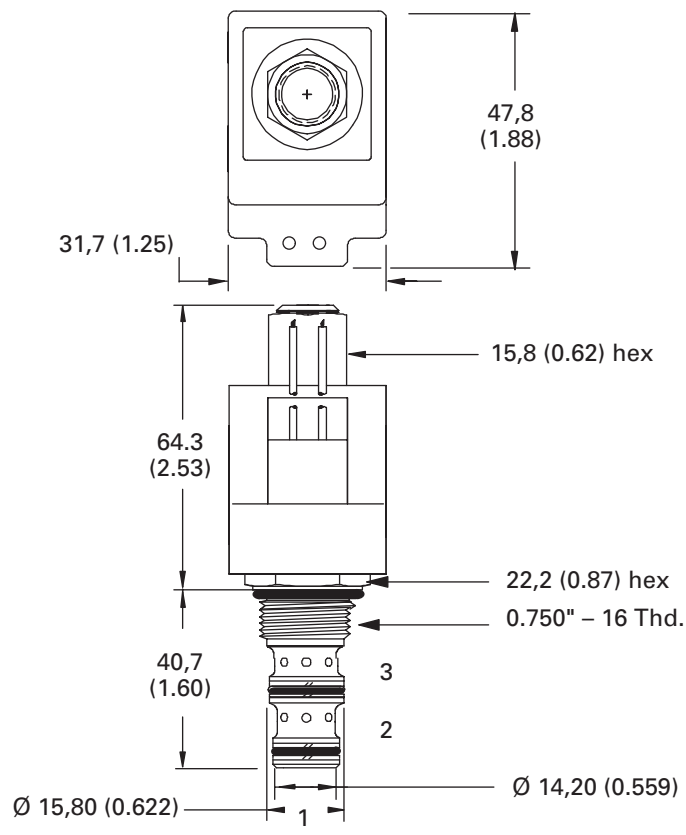
**Note**

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

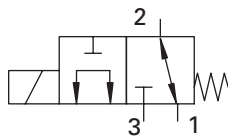
The SV1-10-3 is a 3-way, 2-position, direct acting, spool type screw-in cartridge solenoid valve.

## Operation

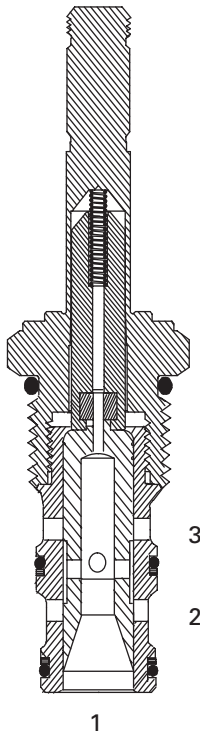
In the de-energized position, this valve allows flow from port 2 to port 1 while port 3 is blocked.

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

## Functional Symbol



## Sectional View



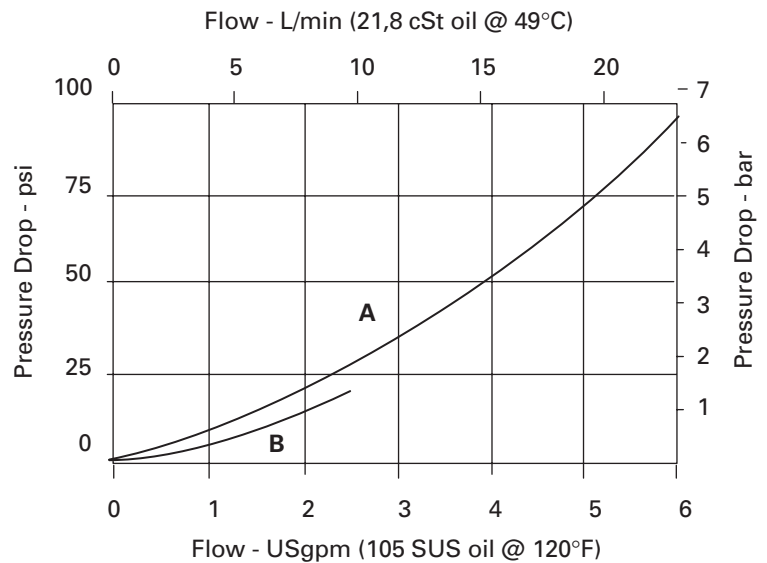
## RATINGS AND SPECIFICATIONS

*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 <sup>3</sup> /min (10 in <sup>3</sup> /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	565804 (Buna-N), 889599 (Viton®) Viton is a registered trademark of E.I. DuPont

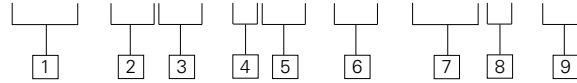
## Pressure Drop Curves

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-135.

**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  
P - 1/2" NPT conduit port w/leadwire  
Q - Spade terminals  
W - Leadwire  
N - Deutsch (DC only)  
Y - Amp JR (DC only)  
For coil dimensions see page C-5.

**7 Voltage rating**

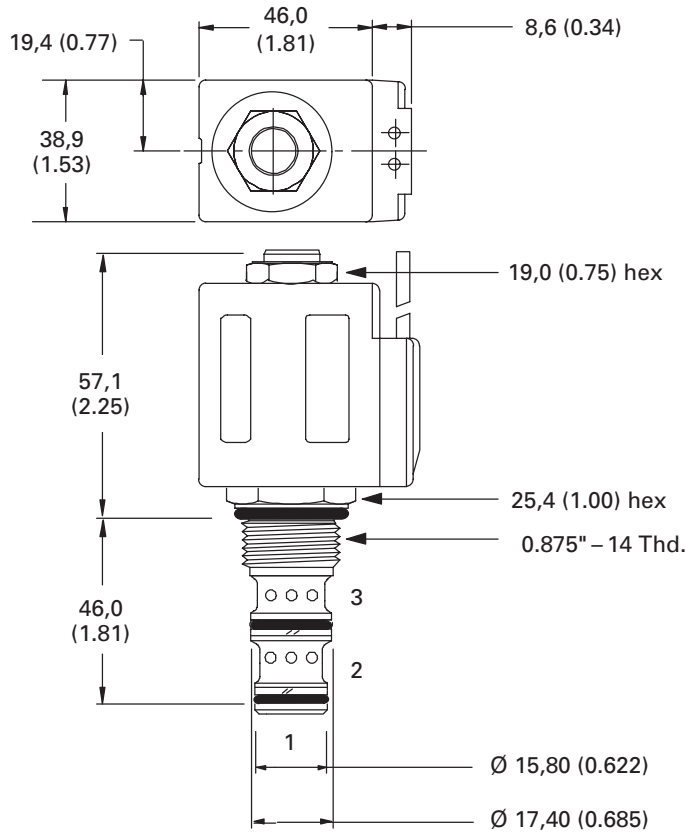
00 - No coil	24A - 24VAC
12D - 12VDC	120A - 120VAC
24D - 24VDC	240A - 240VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

\*Optional arc suppression diode.

- 9 Special features**  
00 - None  
(Only required if valve has special features, omitted if "00.")  
  
Note  
Use 10 series, 20 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

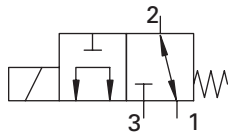
The SV11-10-3 is a 3-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

## Operation

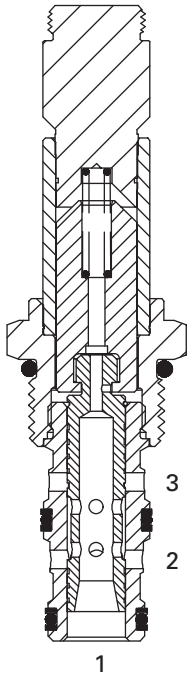
In the de-energized position, this valve allows flow from port 2 to port 1 while port 3 is blocked.

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

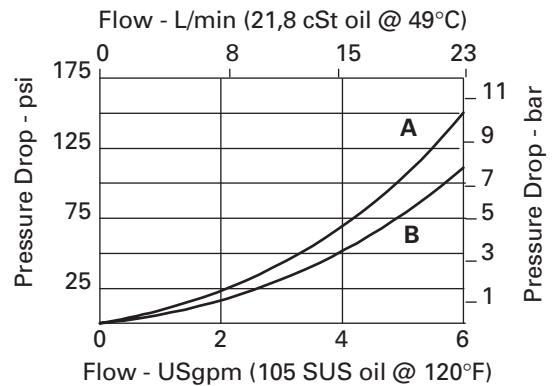
*Performance data is typical with fluid at 21,8 cSt (105 SUS) and 49°C (120°F)*

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 <sup>3</sup> /min. (10 in <sup>3</sup> /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	565804 (Buna-N), 889599 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

## Pressure Drop Curves

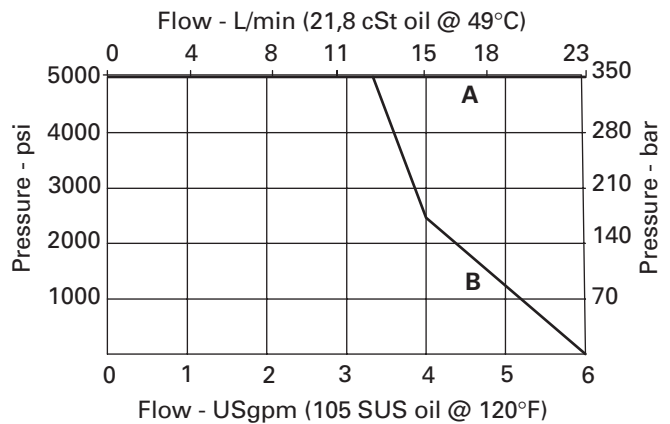
Cartridge only

- A** - Port 3 to port 1
- B** - Port 1 to port 2



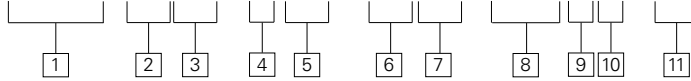
## Operating Limits

- 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-135.

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

**7 Port Size**

CODE	PORT SIZE	HOUSING NUMBER
<b>0</b>	Cartridge only	
<b>2G</b>	1/4" BSPP	02-175127
<b>3G</b>	3/8" BSPP	02-175128
<b>6T</b>	SAE 6	02-175124
<b>8T</b>	SAE 8	02-175125

See section J for housings.

**8 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**10 Coil series**  
**H** - 10 series, 26 W  
 For coil dimensions see page C-6.

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

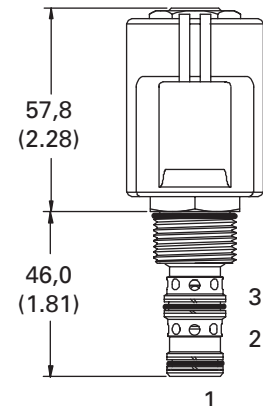
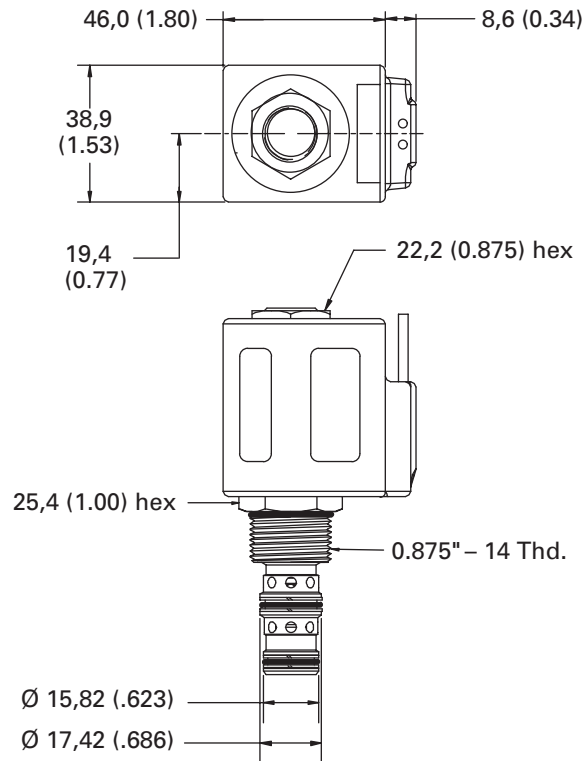
**Dimensions**

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

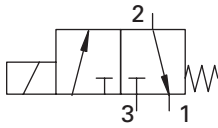
The SV4-10-3 is a 3-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

## Operation

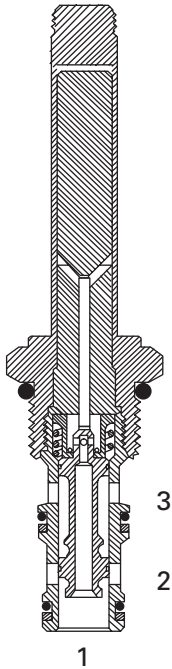
In the de-energized position, this valve allows flow from port 2 to port 1 while port 3 is blocked.

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

## Functional Symbol



## Sectional View



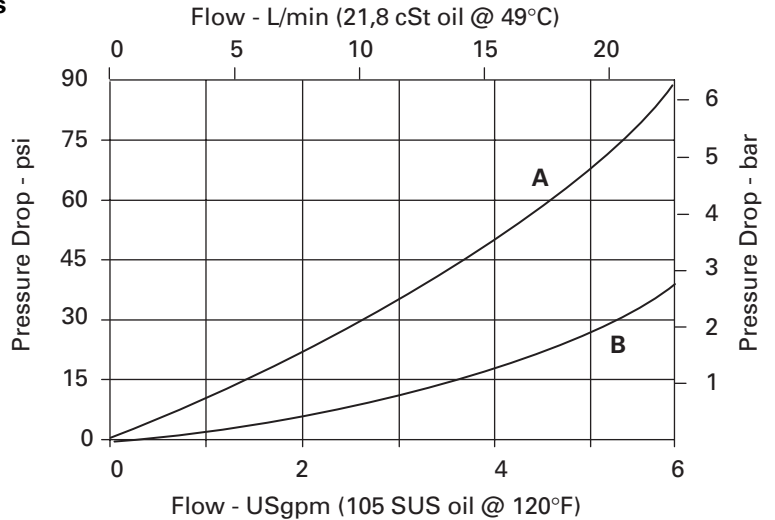
## RATINGS AND SPECIFICATIONS

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

Typical application pressure	210 bar (3000 psi)*
* Port 1 pressure not to exceed 13.7 bar (200 psi)	
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 cm <sup>3</sup> /min (10 in <sup>3</sup> /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	565804 (Buna-N), 889599 (Viton®) Viton is a registered trademark of E.I. DuPont

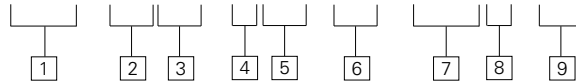
## Pressure Drop Curves

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

**6 Port Size**

CODE	PORT SIZE	HOUSING NUMBER
<b>0</b>	Cartridge only	
<b>3B</b>	3/8" BSPP	02-173358*
<b>6T</b>	SAE6	566162*
<b>2G</b>	1/4" BSPP	876705
<b>3G</b>	3/8" BSPP	876714
<b>6H</b>	SAE 6	876704
<b>8H</b>	SAE 8	876711

\*Light duty housing.  
 See section J or housings.

**8 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)  
 For coil dimensions see page C-5.

**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-135.

**7 Voltage rating**

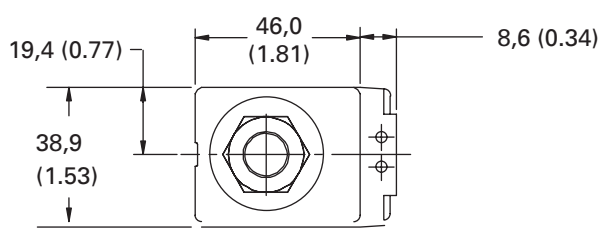
<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Special features**  
**00** - None  
 (Only required if valve has special features, omitted if "00.")  
 Note  
 Use 10 series, 20 W coils with this solenoid valve.

**Dimensions**  
 mm (inch)

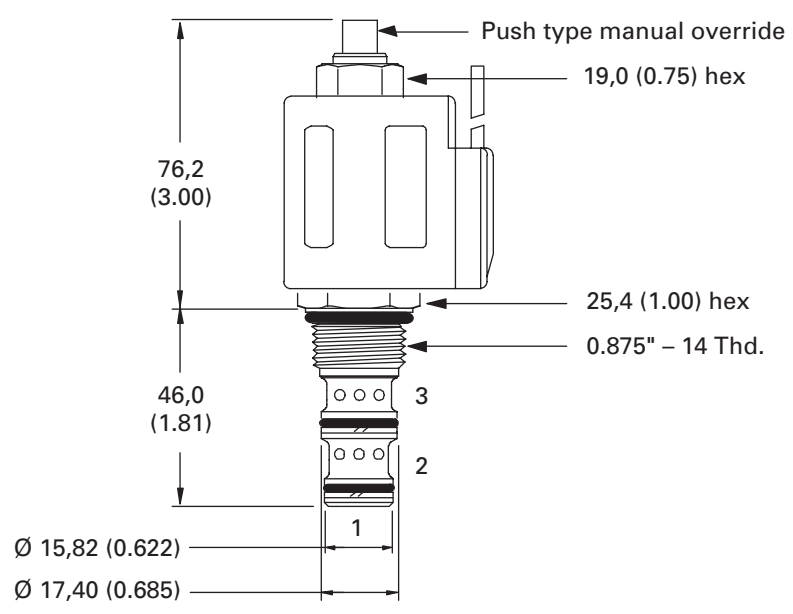
Torque cartridge in aluminum housing 47-54 Nm (35-40 ft. lbs)



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

**WARNING**  
 Port 1 must be vented to tank.  
 Tank pressure not to exceed 13.7 bar (200 psi).

**WARNING**  
 Maintain 5-8 Nm (4-6 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

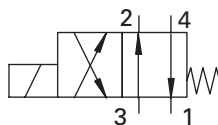
The SV1-8-4 is a 4-way, 2-position, direct acting, spool type solenoid valve.

## Operation

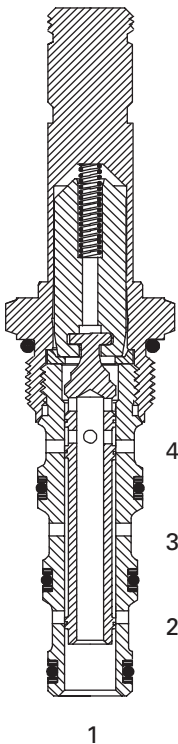
In the de-energized position, the SV1-8-4 allows flow from port 4 to port 1, and from port 3 to port 2.

In the energized position, flow is allowed from port 3 to port 4, and from port 2 to port 1.

## Functional Symbol



## Sectional View



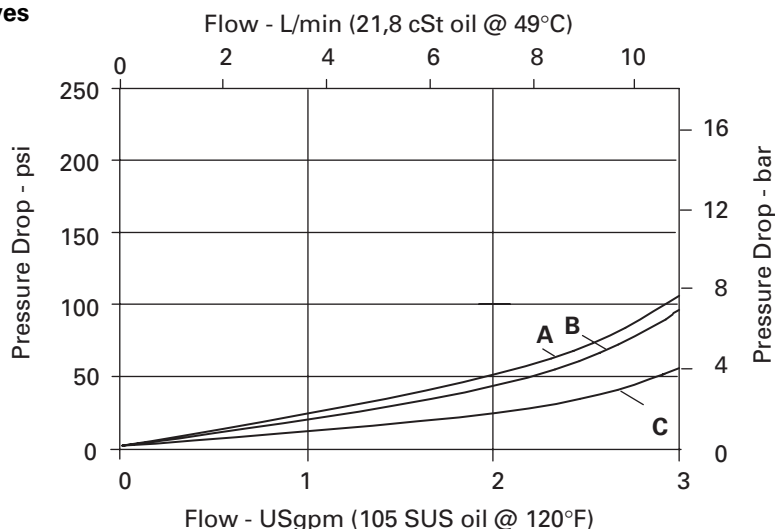
## RATINGS AND SPECIFICATIONS

*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 <sup>3</sup> /min (5 in <sup>3</sup> /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>

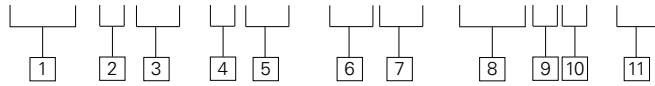
## Pressure Drop Curves

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-135.

**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.

- 9 Connector types**  
Blank - No coil  
G - ISO 4400 DIN 43650  
P - 1/2" NPT conduit port w/leadwire  
Q - Spade terminals  
W - Leadwire  
N - Deutsch (DC only)  
Y - Amp JR (DC only)

**10 Coil series**  
S - 8 series, 16 W  
For coil dimensions see page C-3.

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

- 8 Voltage rating**
- |              |                      |
|--------------|----------------------|
| 00 - No coil | 24A - 24VAC          |
| 12D - 12VDC  | 120A - 120VAC        |
| 24D - 24VDC  | 240A - 240VAC        |
| 36D - 36VDC  | 12B - 12VDC/w diode* |
|              | 24B - 24VDC/w diode* |
- \*Optional arc suppression diode.

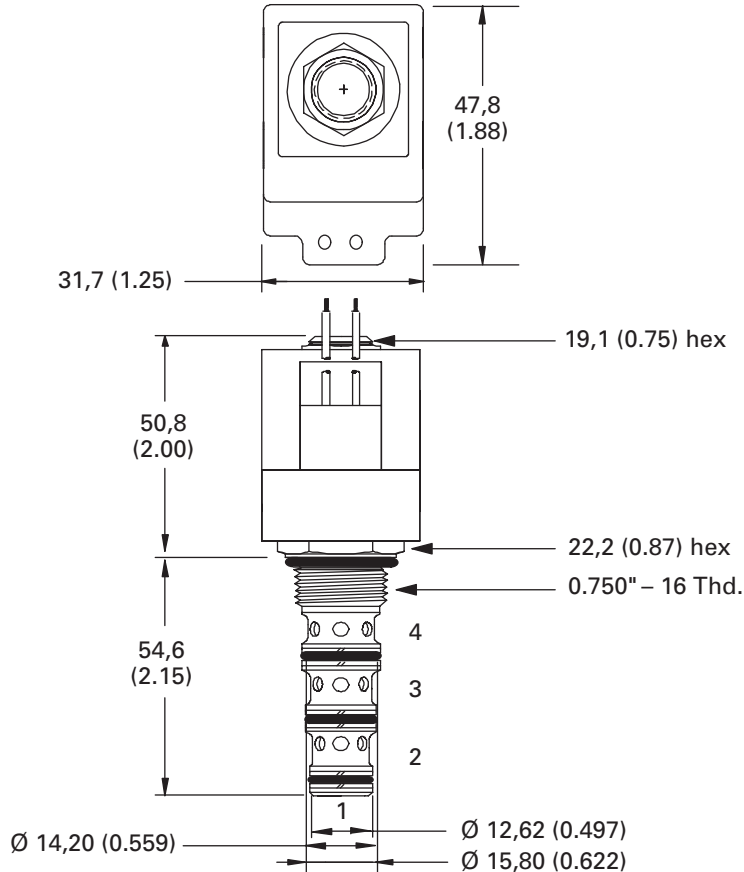
**Dimensions**

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

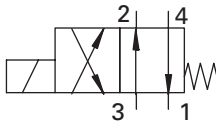
The SV11-8-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

## Operation

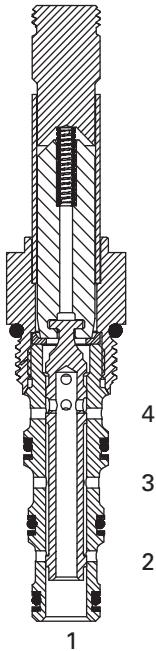
In the de-energized position, this valve allows flow from port 3 to port 2 and from port 4 to port 1.

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)*

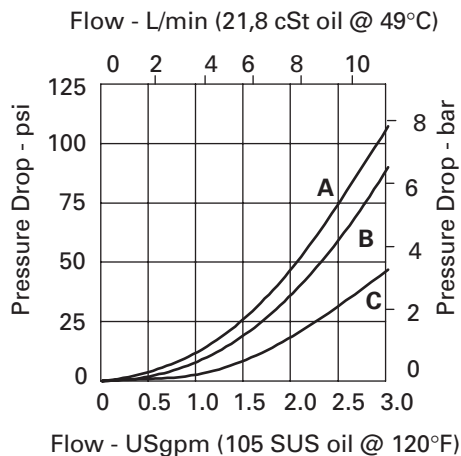
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	11 L/min (3 USgpm)
Internal leakage, combined port 2 and port 1	270 cm <sup>3</sup> /min. (16.5 in <sup>3</sup> /min.) max @ 350 bar (5000 psi)
Temperature range	-40° to 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

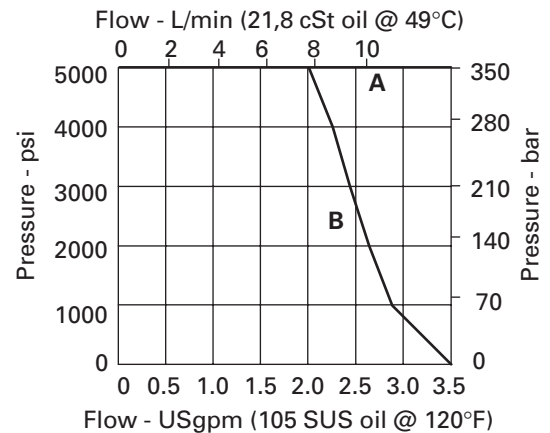
### Pressure drop vs. flow

- A** - Port 3 to 4 and 3 to 2
- B** - Port 4 to 1
- C** - Port 2 to 1

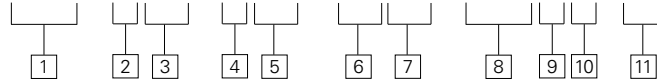


### Operating Limits

- 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-135.

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

**7 Port Size**

CODE	PORT SIZE	HOUSING NUMBER
<b>0</b>	Cartridge only	
<b>2G</b>	1/4" BSPP	02-160753
<b>3G</b>	3/8" BSPP	02-160754
<b>4T</b>	SAE 4	02-160751
<b>6T</b>	SAE 6	02-160752

See section J for housings.

**8 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**10 Coil series**  
**P** - 8 series, 20 W  
 For coil dimensions see page C-4.

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

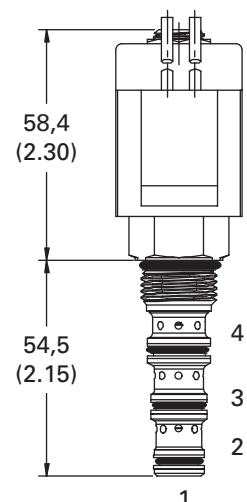
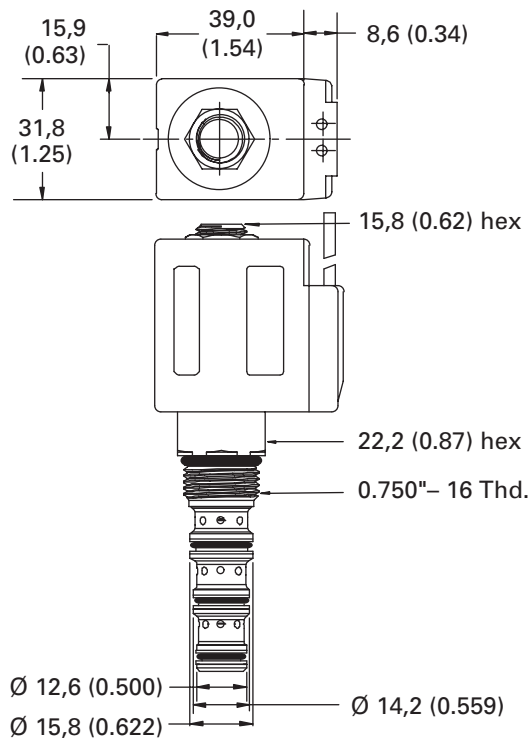
**Dimensions**

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

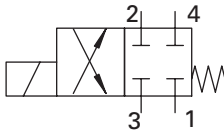
The SV2-8-4 is a four-way, two-position, direct acting, spool-type solenoid valve.

## Operation

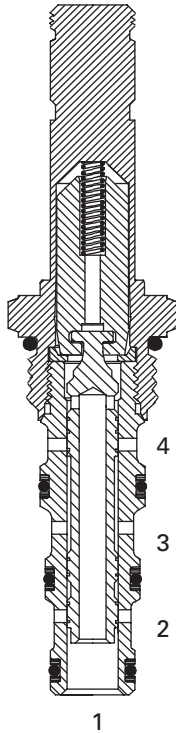
The SV2-8-4 has all ports blocked in the de-energized position.

In the energized position, flow is allowed from port 2 to port 1, and from port 3 to port 4.

## Functional Symbol



## Sectional View



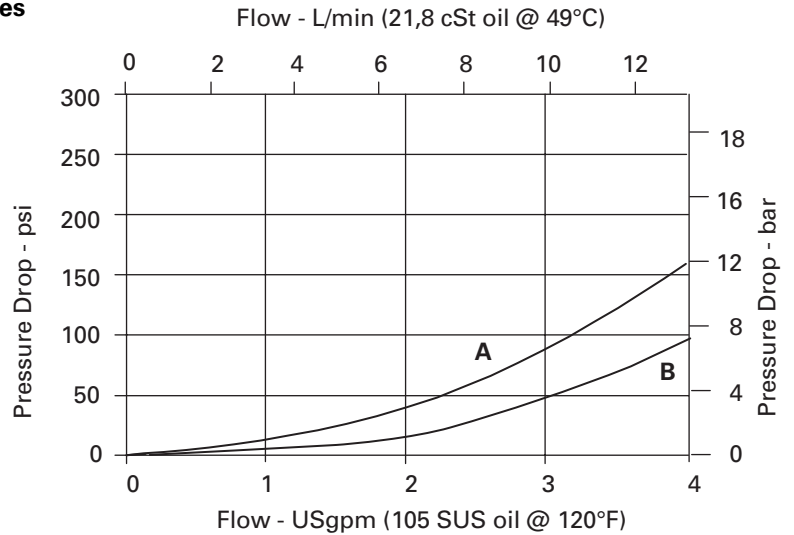
## RATINGS AND SPECIFICATIONS

*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 <sup>3</sup> /min (5 in <sup>3</sup> /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

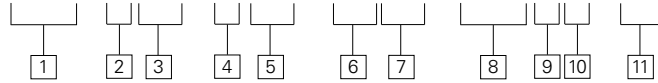
Cartridge only



**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-135.

- 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.

- 9 Connector types**  
Blank - No coil  
G - ISO 4400 DIN 43650  
P - 1/2" NPT conduit port w/leadwire  
Q - Spade terminals  
W - Leadwire  
N - Deutsch (DC only)  
Y - Amp JR (DC only)

---

- 10 Series Coil**  
S - 8 series, 16 W  
For coil dimensions see page C-3.

---

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

- 8 Voltage rating**

00 - No coil	24A - 24VAC
12D - 12VDC	120A - 120VAC
24D - 24VDC	240A - 240VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

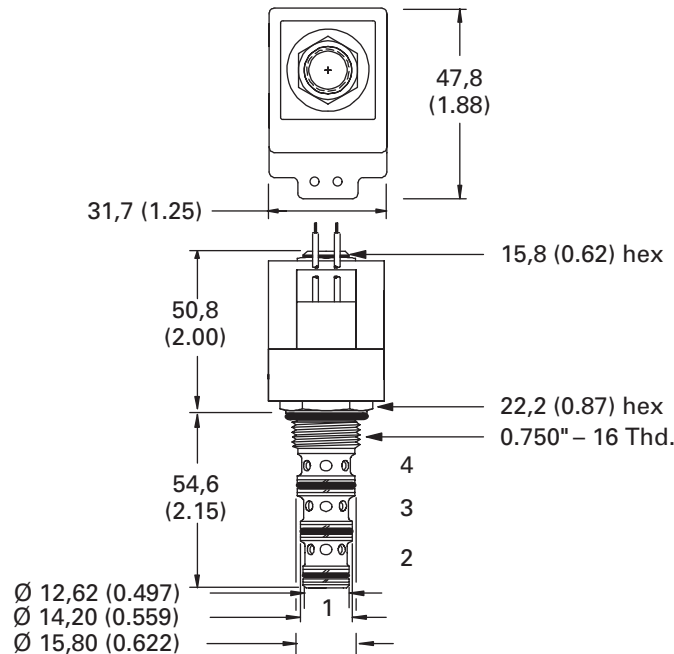
\*Optional arc suppression diode.

**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

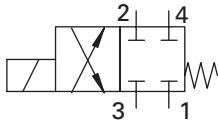
## Description

The SV12-8-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

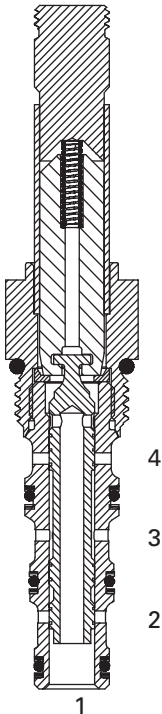
## Operation

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)*

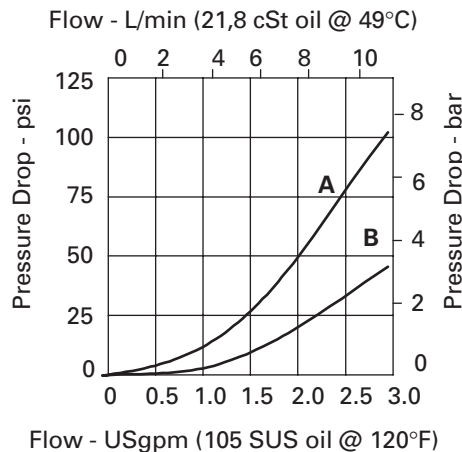
Typical application pressure (all ports)	350 bar (5000 psi)
Cartridge fatigue pressure (infinite life)	310 bar (4500 psi)
Rated flow	13 L/min (3.5 USgpm)
Internal leakage, port 2 to port 1	82 cm <sup>3</sup> /min. (5 in <sup>3</sup> /min.) max @ 350 bar (5000 psi)
Temperature range	-40° to 100°C (-40° 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

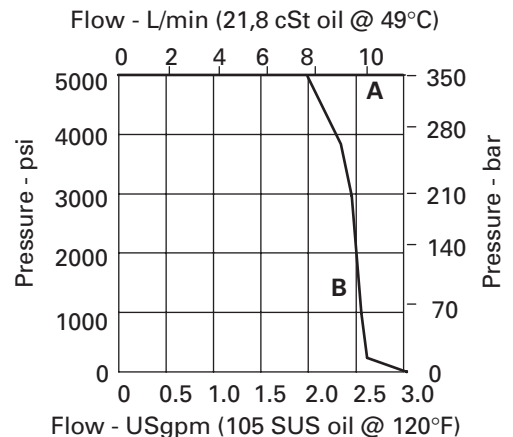
### Pressure drop vs. flow

- A** - Port 3 to port 4
- B** - Port 2 to port 1

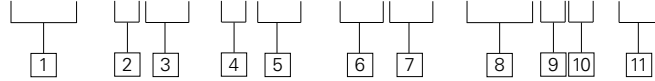


### Operating Limits

- A** - Port 2 to port 1
- B** - Port 3 to port 4



**SV12 – 8 (V) – 4 (M) – (S) \*\* – \*\*\*\* \* P – 00**



**1 Function**  
**SV12** - 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-135.

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

**7 Port Size**

CODE	PORT SIZE	HOUSING NUMBER
<b>0</b>	Cartridge only	
<b>2G</b>	1/4" BSPP	02-160753
<b>3G</b>	3/8" BSPP	02-160754
<b>4T</b>	SAE 4	02-160751
<b>6T</b>	SAE 6	02-160752

See page J-13 for housings.

**8 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**10 Coil series**  
**P** - 8 series, 20 W  
 For coil dimensions see page C-4.

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

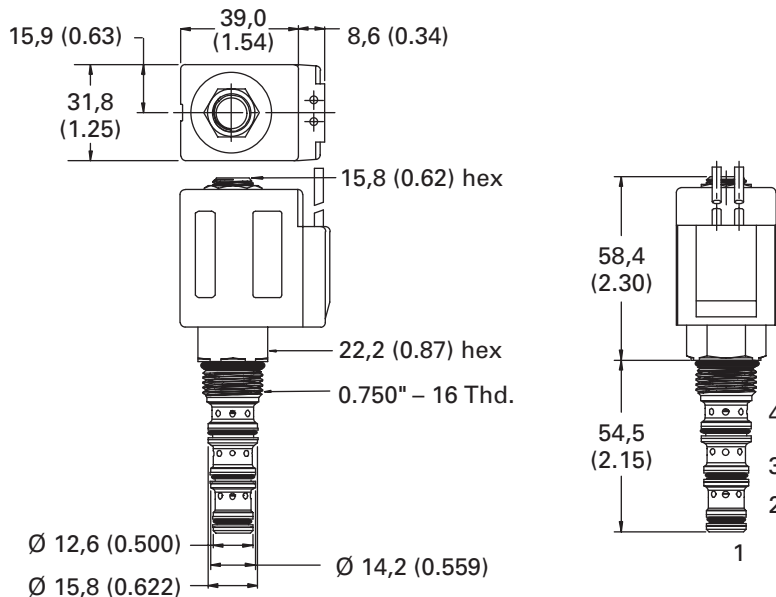
**Dimensions**

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.

# SV1-10-4/4M/4R

4-way, 2-position spool type solenoid valve

## Description

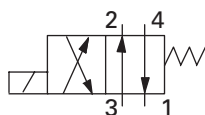
The SV1-10-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

## Operation

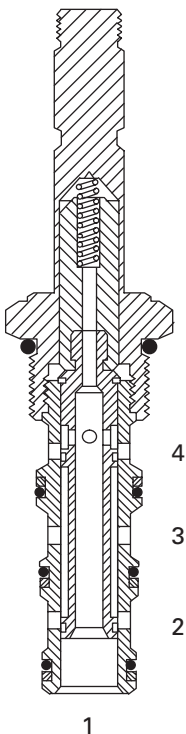
In the de-energized position, this valve allows flow from port 2 to port 3 and from port 4 to port 1.

In the energized position, flow is allowed from port 3 to port 4 and from port 4 to port 1.

## Functional Symbol



## Sectional View



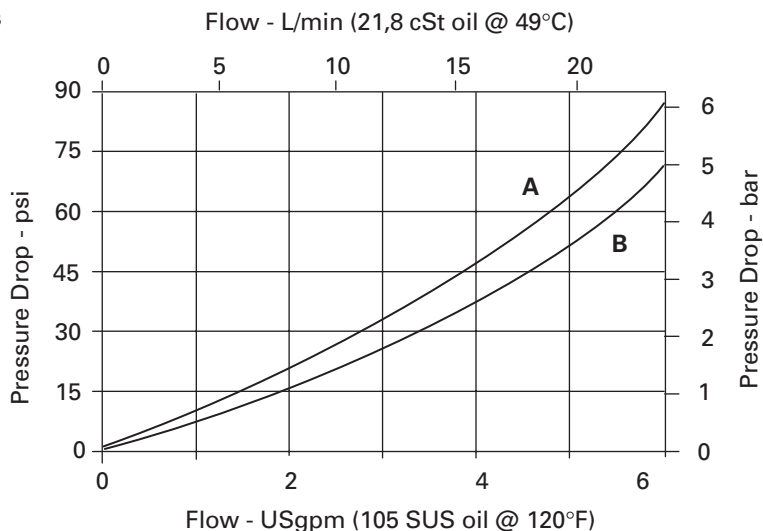
## RATINGS AND SPECIFICATIONS

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

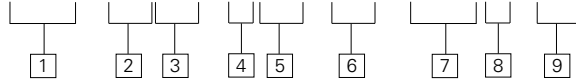
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Rated flow	23 L/min (6 USgpm)
Internal leakage	164 cm <sup>3</sup> /min (10 in <sup>3</sup> /min) max. @ 210 bar (3000 psi)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	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	565805 (Buna-N), 889600 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

## Pressure Drop Curves

Cartridge only



**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-135.

**6 Port Size**

CODE	PORT SIZE	HOUSING NUMBER
<b>0</b>	Cartridge only	
<b>3B</b>	3/8" BSPP	02-179705*
<b>6T</b>	SAE6	566161*
<b>2G</b>	1/4" BSPP	876709
<b>3G</b>	3/8" BSPP	876715
<b>6H</b>	SAE 6	876708
<b>8H</b>	SAE 8	876713

\*Light duty housing.  
 See section J for housings.

**7 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

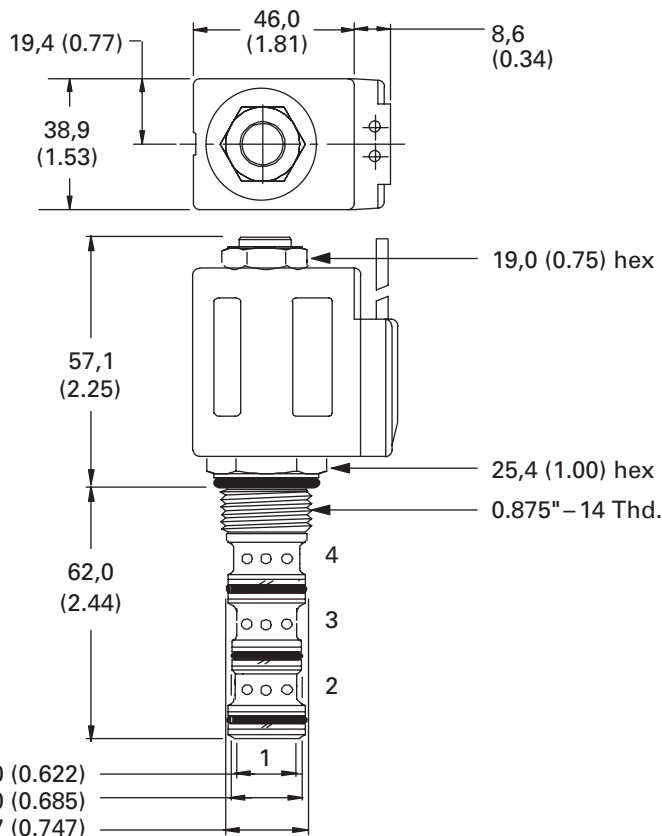
**8 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)  
 For coil dimensions see page C-5.

**9 Special features**  
**00** - None  
 (Only required if valve has special features, omitted if "00.")  
 Note  
 Use 10 series, 20 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

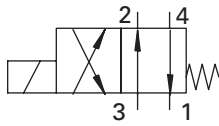
The SV11-10-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

## Operation

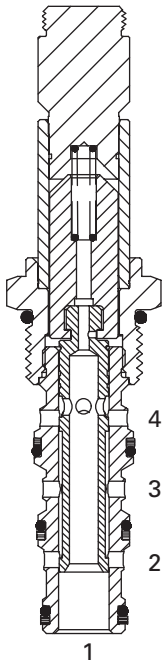
In the de-energized position, this valve allows flow from port 3 to port 2 and from port 4 to port 1.

In the energized position, flow is allowed from port 3 to port 4 and from port 2 to port 1.

## Functional Symbol



## Sectional View



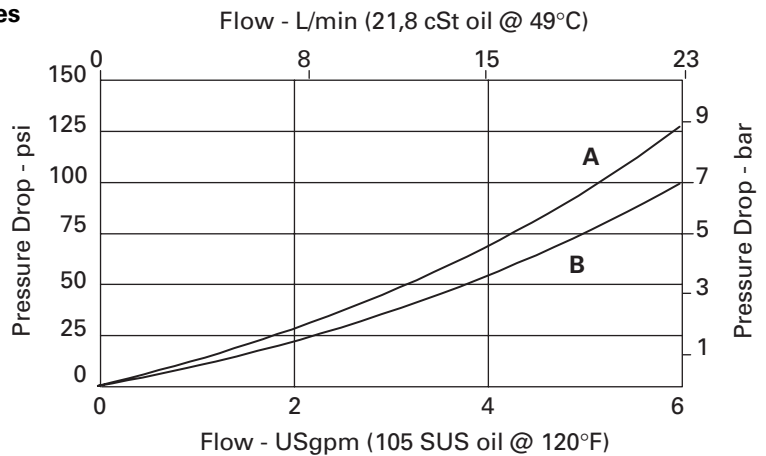
## RATINGS AND SPECIFICATIONS

*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	82 cm <sup>3</sup> /min. (5 in <sup>3</sup> /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	565805 (Buna-N), 889600 (Viton®) <small>Viton is a registered trademark of E.I. DuPont Co</small>

## Pressure Drop Curves

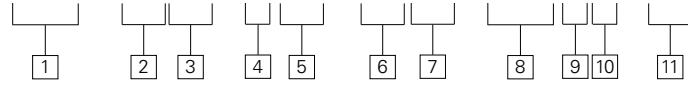
Cartridge only



**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-135.

**6 Valve housing material**  
**Blank** - Omit for cartridge only  
**S** - Steel

**7 Port Size**

CODE	PORT SIZE	HOUSING NUMBER
<b>0</b>	Cartridge only	
<b>2G</b>	1/4" BSPP	02-175139
<b>3G</b>	3/8" BSPP	02-175140
<b>6T</b>	SAE 6	02-175137
<b>8T</b>	SAE 8	02-175138

See section J for housings.

**8 Voltage rating**

<b>00</b> - No coil	<b>24A</b> - 24VAC
<b>12D</b> - 12VDC	<b>120A</b> - 120VAC
<b>24D</b> - 24VDC	<b>240A</b> - 240VAC
<b>36D</b> - 36VDC	<b>12B</b> - 12VDC/w diode*
	<b>24B</b> - 24VDC/w diode*

\*Optional arc suppression diode.

**9 Connector types**  
**Blank** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**10 Coil series**  
**H** - 10 series, 26 W  
 For coil dimensions see page C-6.

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

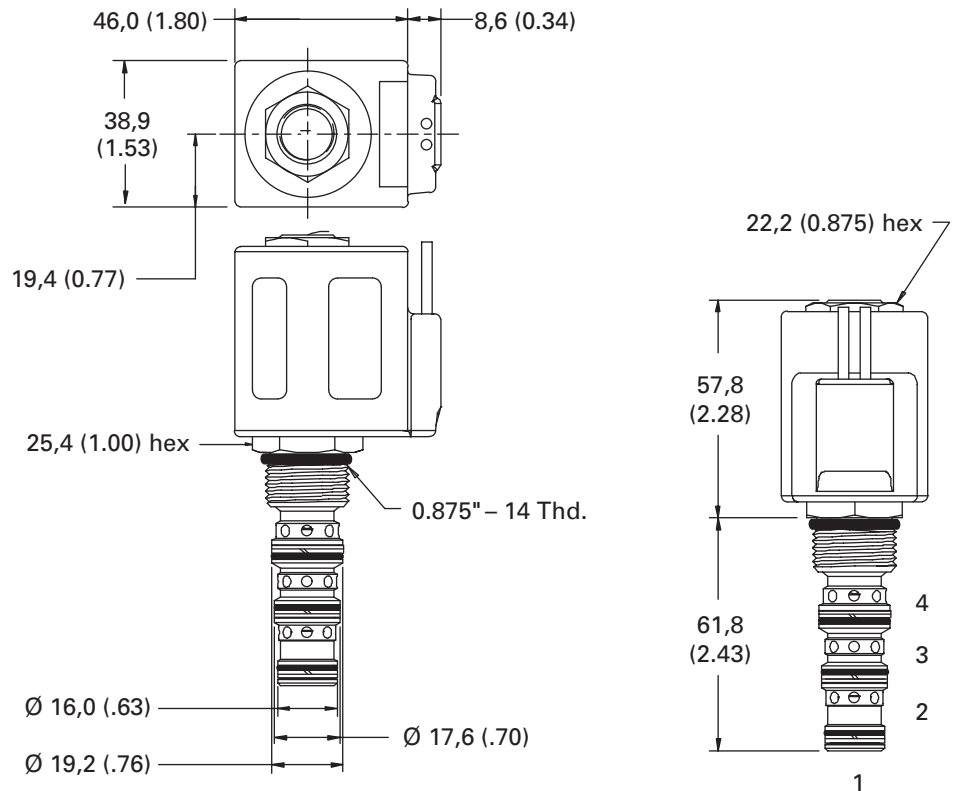
**Dimensions**

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

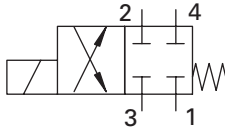
## Description

The SV2-10-4 is a 4-way, 2-position, direct acting, spool type screw-in cartridge solenoid valve.

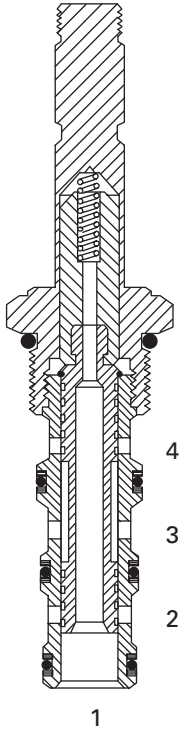
## Operation

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



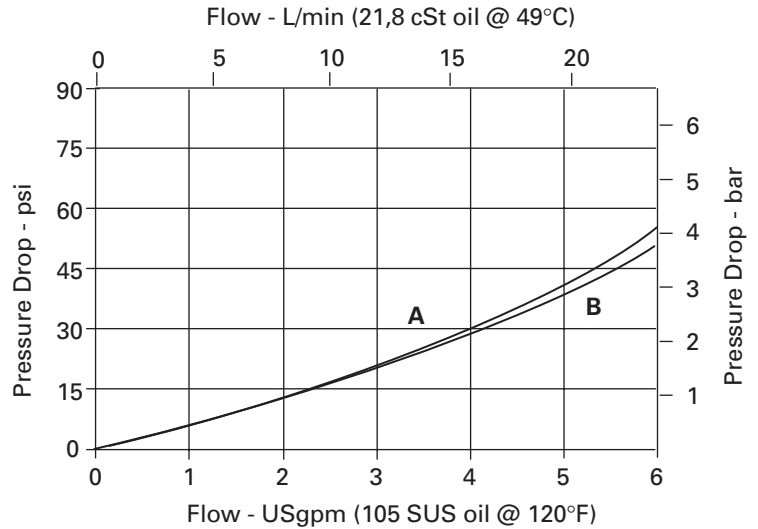
## RATINGS AND SPECIFICATIONS

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 <sup>3</sup> /min (10 in <sup>3</sup> /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	565805 (Buna-N), 889600 (Viton®) Viton is a registered trademark of E.I. DuPont

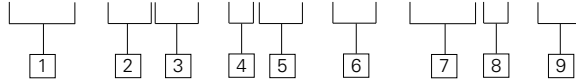
## Pressure Drop Curves

Cartridge only





**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-135.

**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  
P - 1/2" NPT conduit port w/leadwire  
Q - Spade terminals  
W - Leadwire  
N - Deutsch (DC only)  
Y - Amp JR (DC only)  
For coil dimensions see page C-5.

**7 Voltage rating**

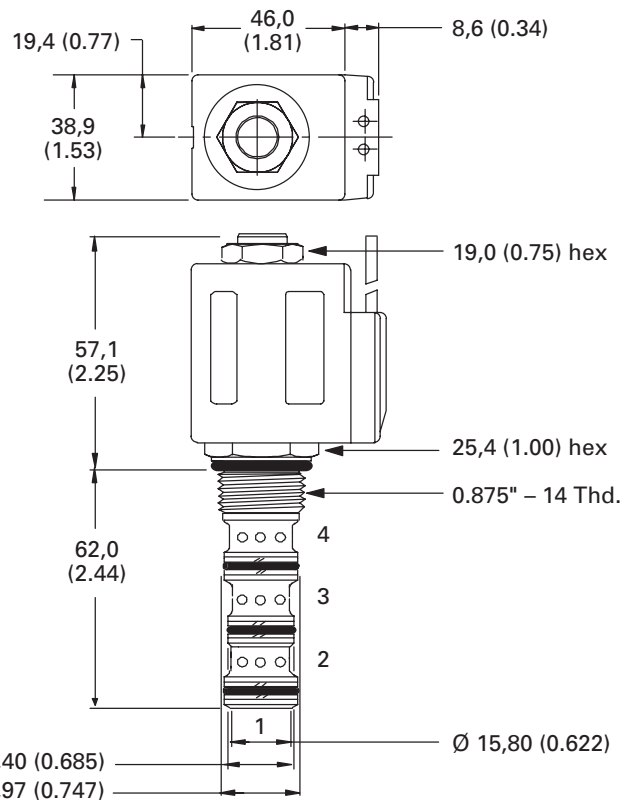
Blank	No coil	24A - 24VAC
M	12VDC	120A - 120VAC
R	24VDC	240A - 240VAC
	36VDC	12B - 12VDC/w diode*
		24B - 24VDC/w diode*

\*Optional arc suppression diode.

- 9 Special features**  
00 - None  
(Only required if valve has special features, omitted if "00.")
- Note  
Use 10 series, 20 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

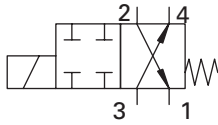
## Description

The SV3-10-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

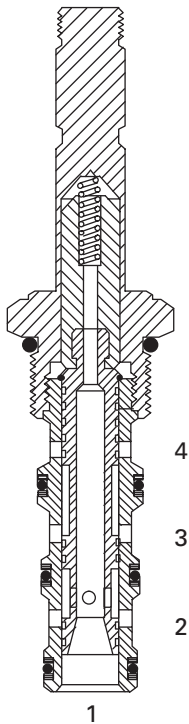
## Operation

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



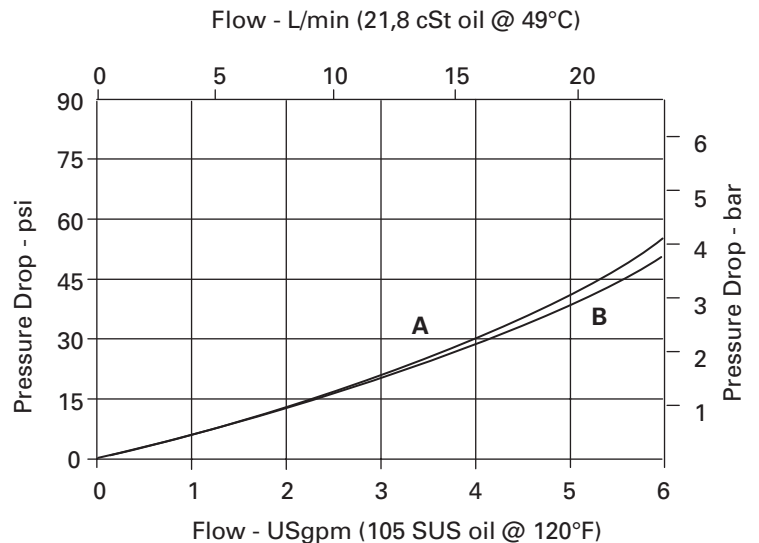
## RATINGS AND SPECIFICATIONS

*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 <sup>3</sup> /min (10 in <sup>3</sup> /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	565805 (Buna-N), 889600 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

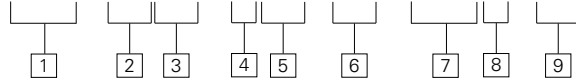
## Pressure Drop Curves

Cartridge only



**A** - Port 3 to port 4  
**B** - Port 1 to port 2

**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-135.

**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	120A - 120VAC
24D	24VDC	240A - 240VAC
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
  - P - 1/2" NPT conduit port w/leadwire
  - Q - Spade terminals
  - W - Leadwire
  - N - Deutsch (DC only)
  - Y - Amp JR (DC only)
- For coil dimensions see page C-5.
- 9 Special features**
- 00 - None

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

Note

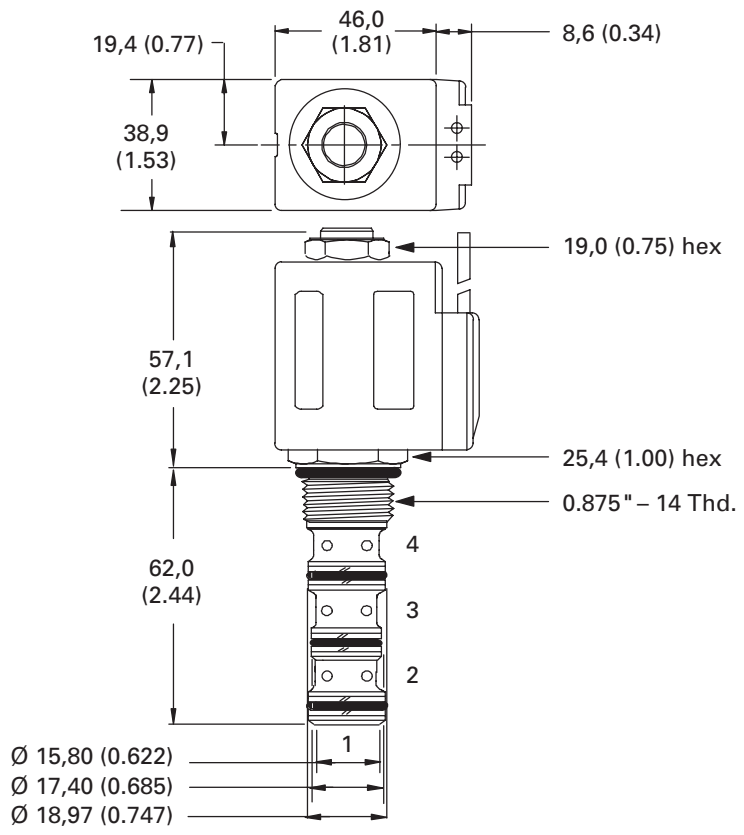
Use 10 series, 20 W coils with this solenoid valve.

**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.

# SV4-10-4/4M/4R

4-way, 2-position spool type solenoid valve

## Description

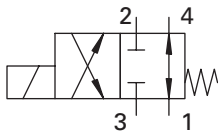
The SV4-10-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

## Operation

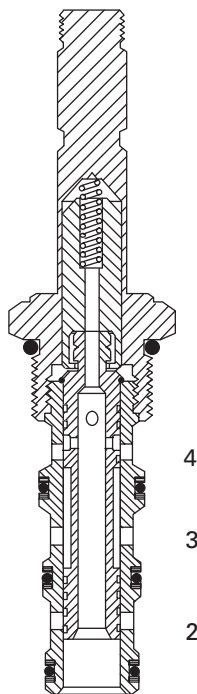
In the de-energized position, flow is allowed between port 1 and port 4 while port 2 and port 3 are blocked.

In the energized position port 3 is open to port 4 and port 2 is open to port 1.

## Functional Symbol



## Sectional View



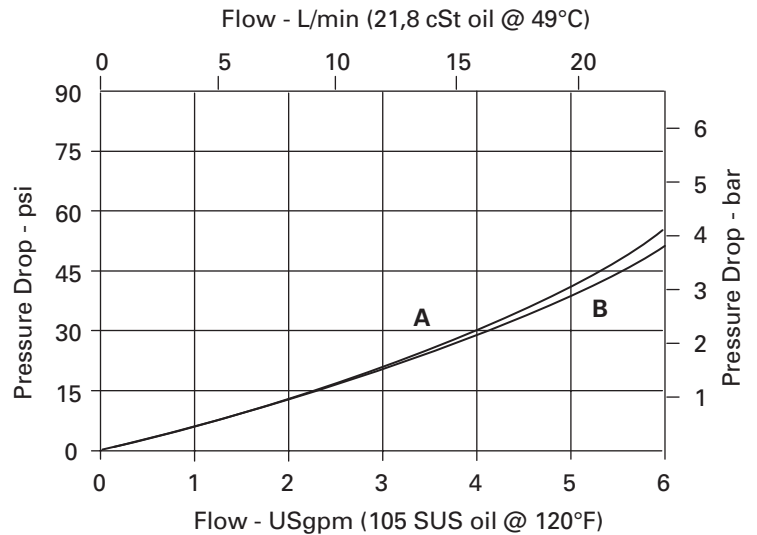
## RATINGS AND SPECIFICATIONS

*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 <sup>3</sup> /min (10 in <sup>3</sup> /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	565805 (Buna-N), 889600 (Viton®) Viton is a registered trademark of E.I. DuPont

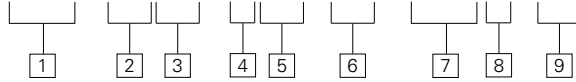
## Pressure Drop Curves

Cartridge only



**A** - Port 3 to port 4  
**B** - Port 1 to port 2

**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

**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
  - P - 1/2" NPT conduit port w/leadwire
  - Q - Spade terminals
  - W - Leadwire
  - N - Deutsch (DC only)
  - Y - Amp JR (DC only)
- For coil dimensions see page C-5.

- 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-135.

**7 Voltage rating**

00 - No coil	24A - 24VAC
12D - 12VDC	120A - 120VAC
24D - 24VDC	240A - 240VAC
36D - 36VDC	12B - 12VDC/w diode*
	24B - 24VDC/w diode*

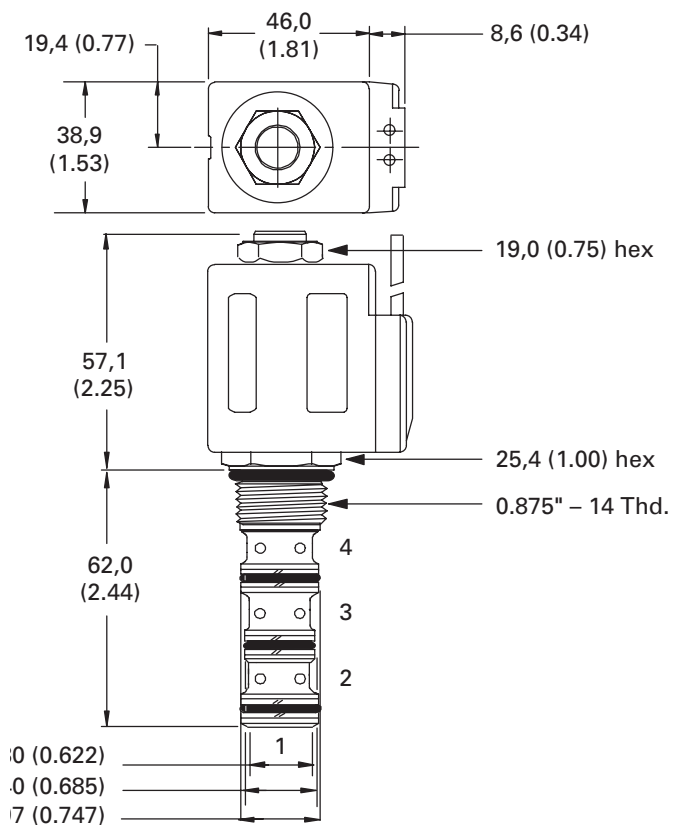
\*Optional arc suppression diode.

- 9 Special features**
- 00 - None
- (Only required if valve has special features, omitted if "00.")
- Note
- Use 10 series, 20 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

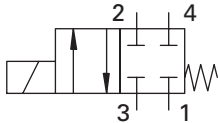
## Description

The SV5-10-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

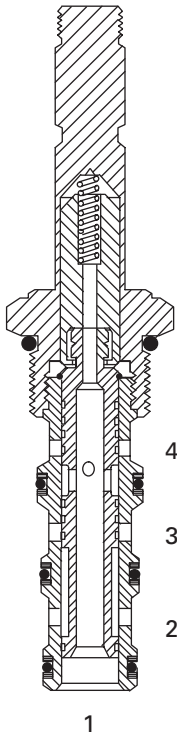
## Operation

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



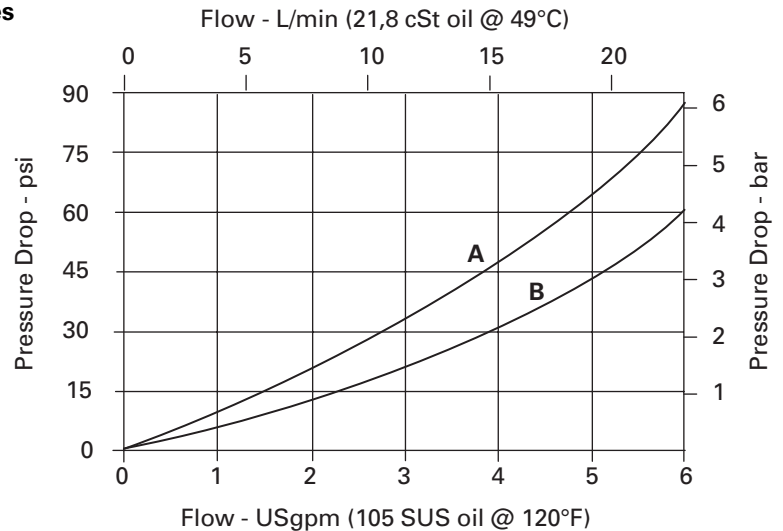
## RATINGS AND SPECIFICATIONS

*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 <sup>3</sup> /min (10 in <sup>3</sup> /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	565805 (Buna-N), 889600 (Viton®) Viton is a registered trademark of E.I. DuPont

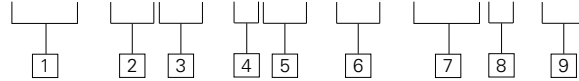
## Pressure Drop Curves

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-135.

**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  
P - 1/2" NPT conduit port w/leadwire  
Q - Spade terminals  
W - Leadwire  
N - Deutsch (DC only)  
Y - Amp JR (DC only)  
For coil dimensions see page C-5.

**7 Voltage rating**

00	No coil
12D	12VDC
24D	24VDC
36D	36VDC
24A	24VAC
120A	120VAC
240A	240VAC
12B	12VDC/w diode*
24B	24VDC/w diode*

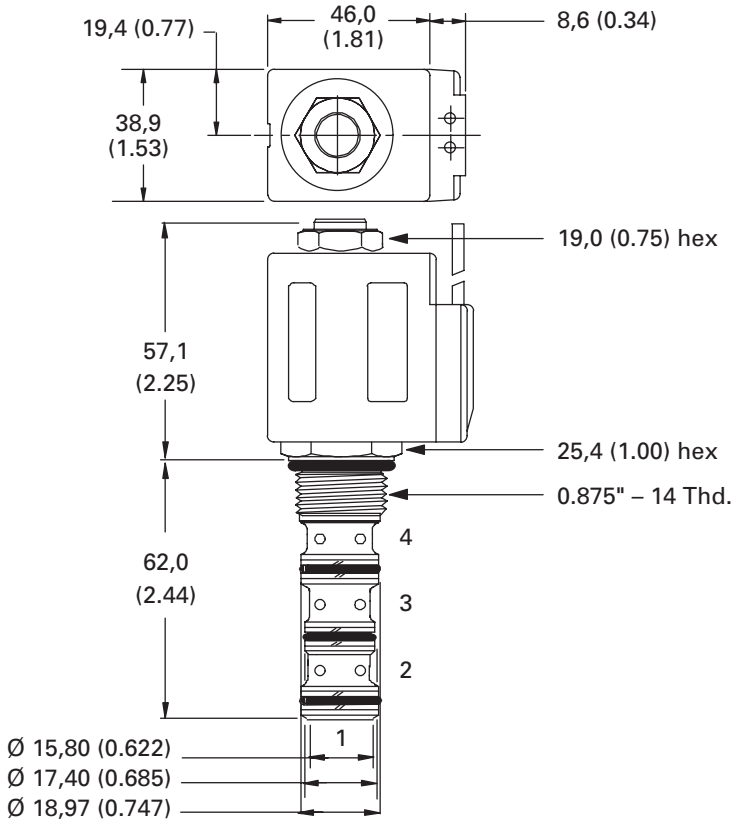
\*Optional arc suppression diode.

- 9 Special features**  
00 - None  
(Only required if valve has special features, omitted if "00.")
- Note  
Use 10 series, 20 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

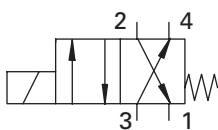
## Description

The SV7-10-4 is a 4-way, 2-position, direct acting, spool type, screw-in cartridge solenoid valve.

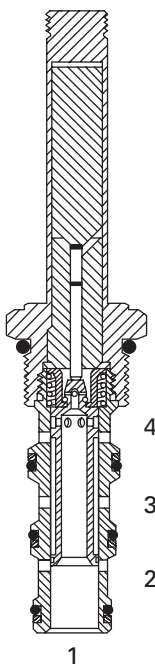
## Operation

In the de-energized position, port 3 is open to port 4 and port 2 is open to port 1.

## Functional Symbol



## Sectional View



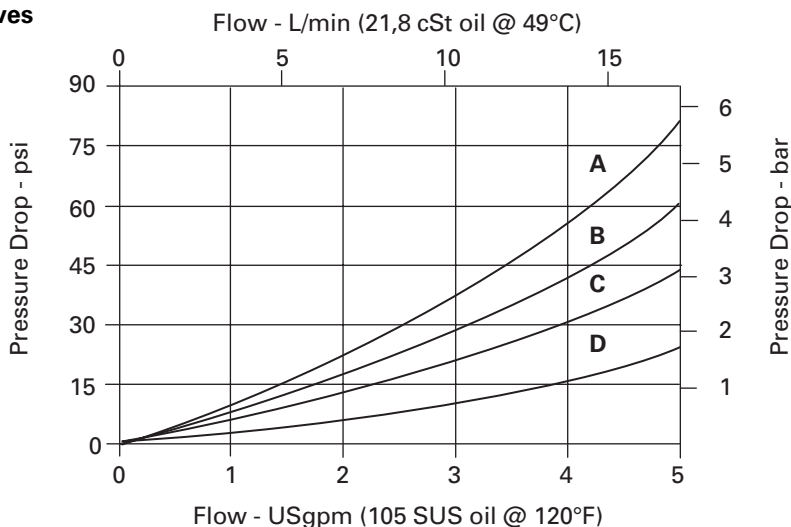
## RATINGS AND SPECIFICATIONS

*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 <sup>3</sup> /min (10 in <sup>3</sup> /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	565805 (Buna-N), 889600 (Viton®) <small>Viton is a registered trademark of E.I. DuPont</small>

## Pressure Drop Curves

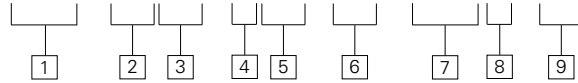
Cartridge only



- 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-134.

**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  
P - 1/2" NPT conduit port w/leadwire  
Q - Spade terminals  
W - Leadwire  
N - Deutsch (DC only)  
Y - Amp JR (DC only)  
For coil dimensions see page C-5.

**7 Voltage rating**

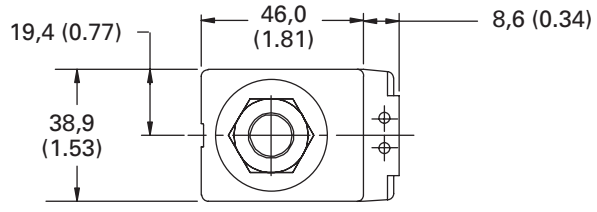
24A	- 24VAC
120A	- 120VAC
240A	- 240VAC
12B	- 12VDC/w diode*
24B	- 24VDC/w diode*
36D	- 36VDC

\*Optional arc suppression diode.

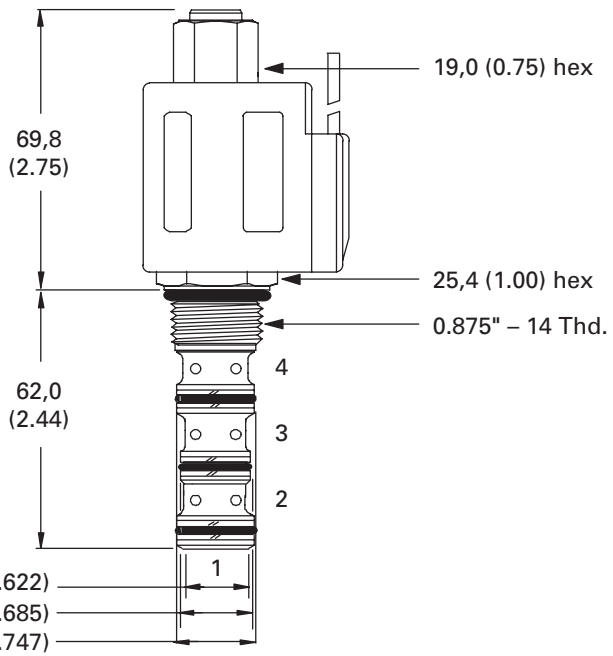
- 9 Special features**  
00 - None  
(Only required if valve has special features, omitted if "00.")
- Note  
Use 10 series, 20 W coils with this solenoid valve.

**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.

# 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.

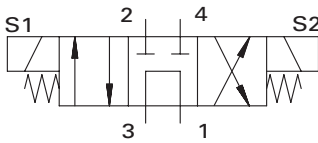
## Operation

In the de-energized position, this valve allows flow from port 3 to port 1 and blocks ports 2 and 4. When

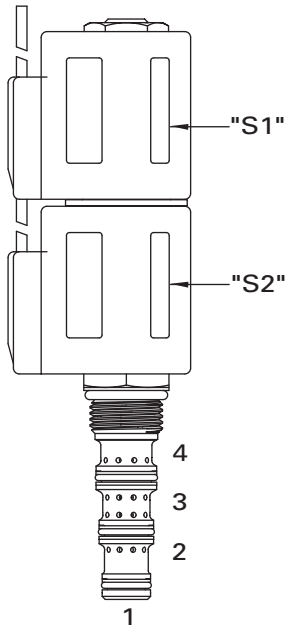
solenoid 1 (S1) is energized, flow is directed from port 3 to port 2 and from port 4 to port 1.

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)

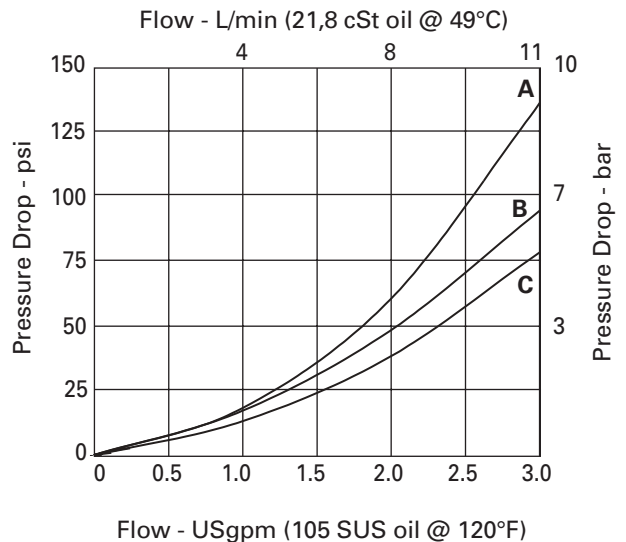
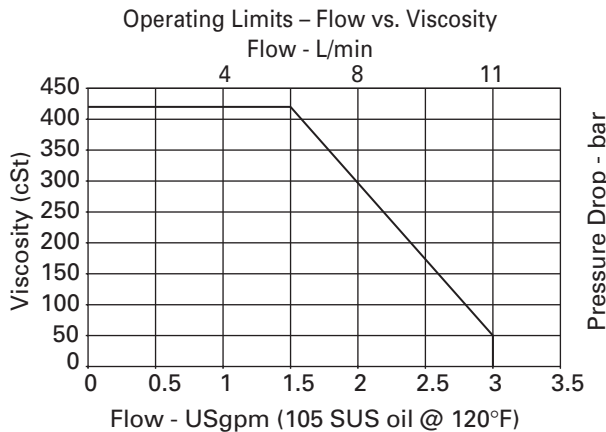
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Fatigue pressure	3,000 psi per NFPA/T2-6-1 R2-2000
Rated burst pressure	11,000 psi per NFPA/T2-6-1 R2-2000
Max flow	See operating limits below
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Coil power	20W
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 <sup>3</sup> /min (10 in <sup>3</sup> /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.

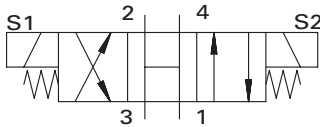
## Operation

In the de-energized position, all ports are open to each other. When solenoid 1 (S1) is energized, flow is

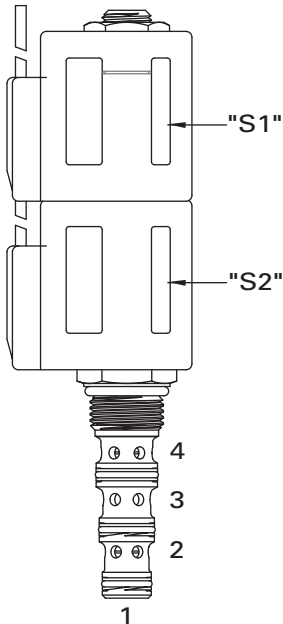
directed from port 3 to port 4 and from port 2 to port 1. When solenoid 2 (S2) is energized, flow is directed

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)

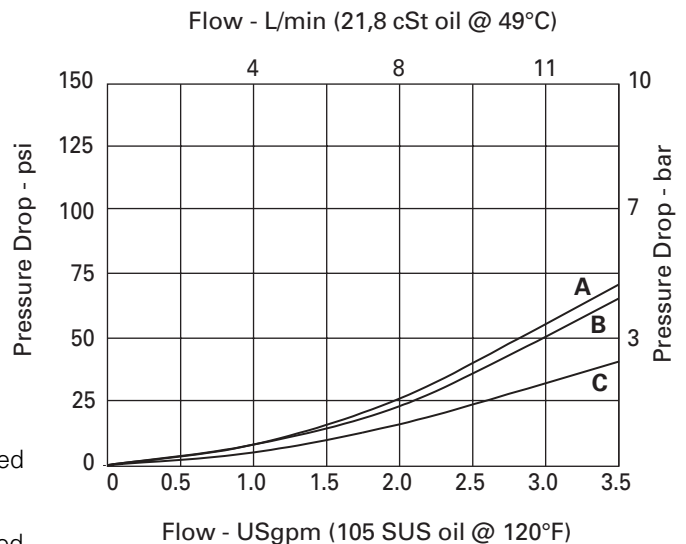
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Fatigue pressure	3,000 psi per NFPA/T2-6-1 R2-2000
Rated burst pressure	11,000 psi per NFPA/T2-6-1 R2-2000
Max flow	13.2 L/min (3.5 USgpm)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Coil power	20W
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®) Viton is a registered trademark of E.I. DuPont
Internal leakage	164 cm <sup>3</sup> /min (10 in <sup>3</sup> /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

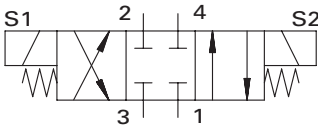
## Description

The SV9-8-E is a 4-way, 3-position, direct acting, spool type directional valve.

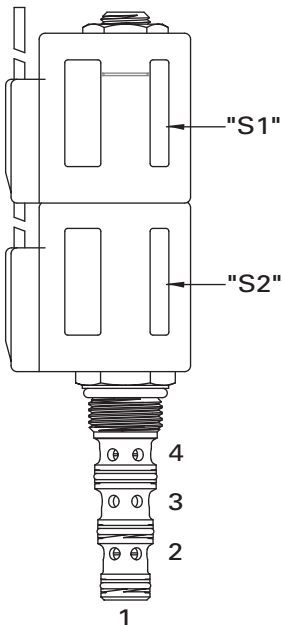
## Operation

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 from port 3 to port 2 and from port 4 to port 1.

## Functional Symbol



## Profile View



## RATINGS AND SPECIFICATIONS

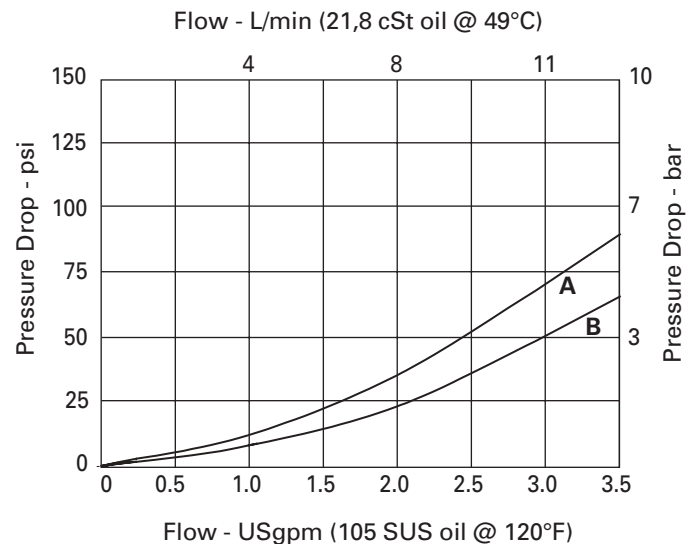
*Performance data is typical with fluid at 21,8 cST (105 SUS) and 49°C (120°F)*

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	20W
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®) ®Viton is a registered trademark of E.I. DuPont
Internal leakage	164 cm <sup>3</sup> /min (10 in <sup>3</sup> /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

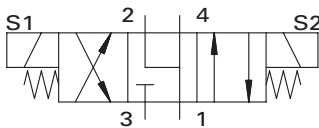
The SV9-8-F is a 4-way, 3-position, direct acting, spool type directional valve.

## Operation

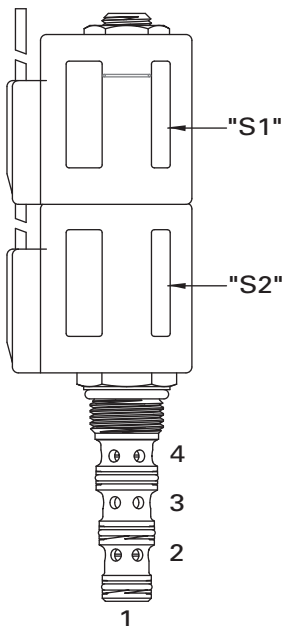
In the de-energized (center) position, port 1, port 2, and port 4 are open to each other while port 3 is blocked. When solenoid 1 (S1) is energized, flow is

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)*

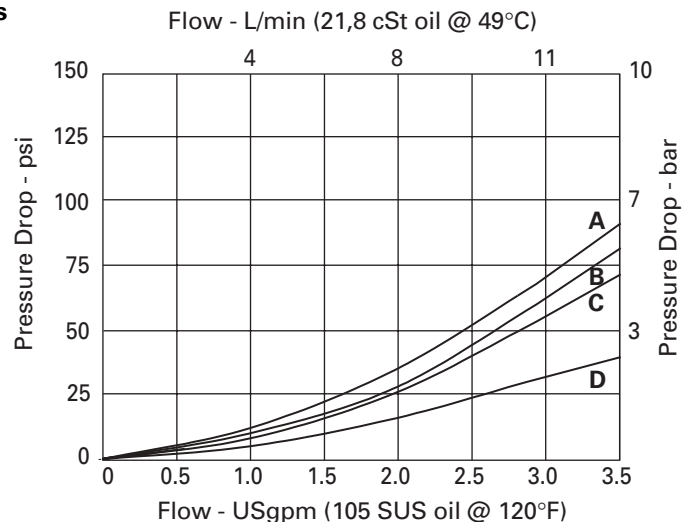
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Fatigue pressure	3,000 psi per NFPA/T2-6-1 R2-2000
Rated burst pressure	11,000 psi per NFPA/T2-6-1 R2-2000
Max flow	13.2 L/min (3.5 USgpm)
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Coil power	20W
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 <sup>3</sup> /min (10 in <sup>3</sup> /min) max. @ 210 bar (3000 psi)

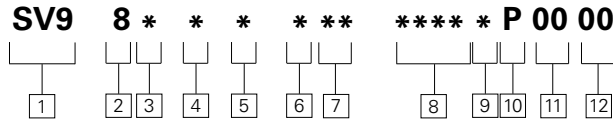
*Endurance tested to 1 million cycles at full rated flow and pressure.*

## 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



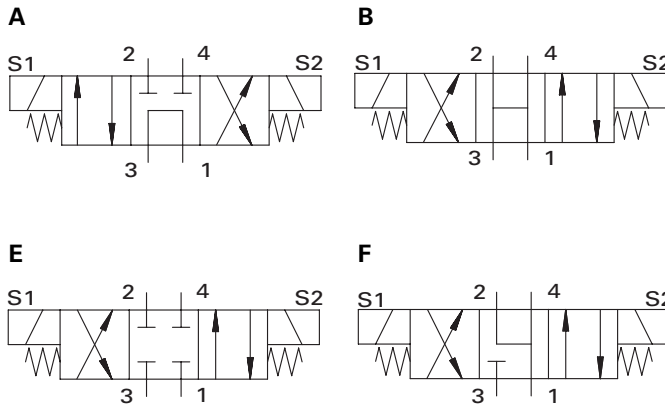


**1 Function**  
**SV9** - Solenoid valve

**2 Size**  
**8** - 8 size

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

**4 Spool center condition**



**8 Voltage rating†**  
**0000** - No coil  
**012D** - 12VDC  
**024D** - 4VDC  
**036D** - 36VDC  
**024A** - 24VAC  
**120A** - 120VAC  
**240A** - 240VAC  
**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 next page.

**6 Housing material**  
**0** - Cartridge only  
**A** - Aluminum  
**S** - Steel

**9 Connector types†**  
**0** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**7 Port Size†**

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum	Steel
<b>00</b>	Cartridge only		
<b>2G</b>	1/4" BSPP	02-160747	02-160753
<b>3G</b>	3/8" BSPP	02-160748	02-160754
<b>4T</b>	SAE 4	02-160749	02-160751
<b>6T</b>	SAE 6	02-160750	02-160752

See section J for housings.

**10 Coil series†**  
**0** - No Coil  
**P** - 8 series, 20 W

**11 Coil special features†**  
**00** - None

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

† These model digits are not stamped on the valve.

# SV9-8

## Dimensions

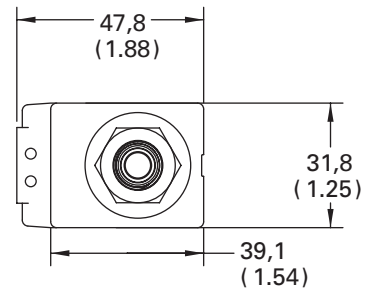
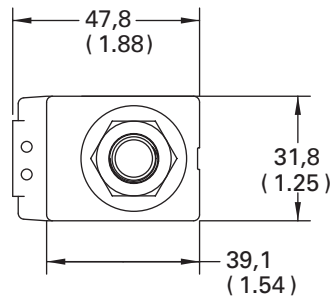


### Dimensions

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 on page C-4.

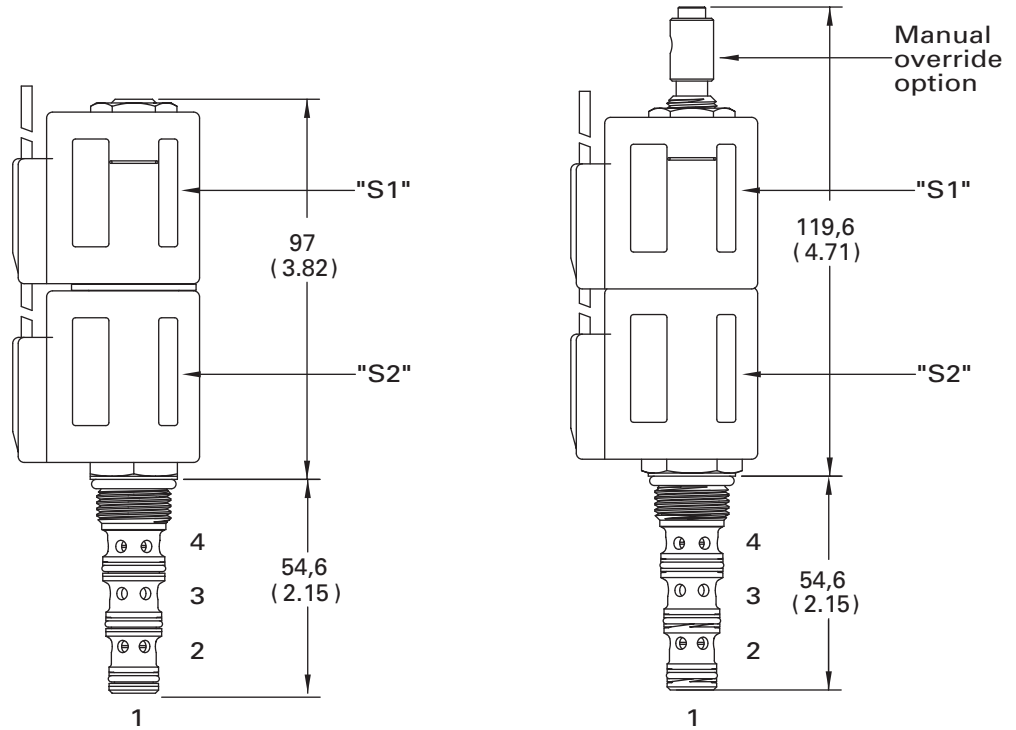


### Note

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 10 series, 20 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.

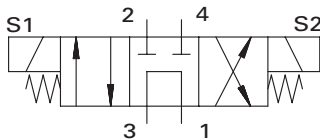
## Operation

In the de-energized position, this valve allows flow from port 3 to port 1 and blocks ports 2 and 4. When

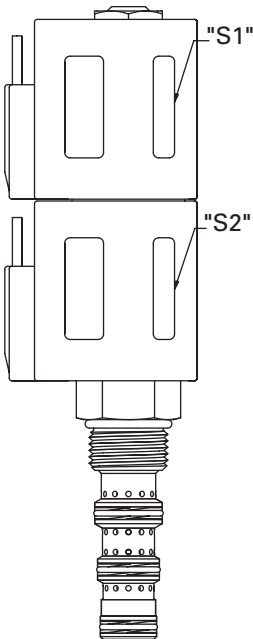
solenoid 1 (S1) is energized, flow is directed from port 3 to port 2 and from port 4 to port 1.

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)*

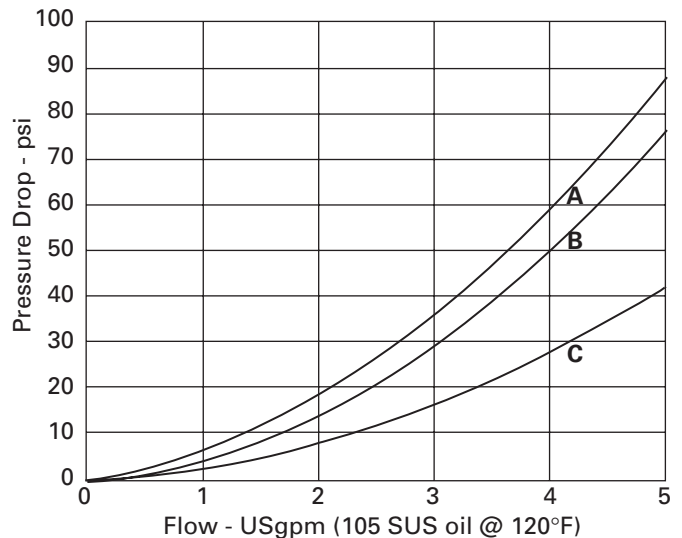
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Fatigue pressure	3,000 psi per NFPA/T2-6-1 R2-2000
Rated burst pressure	(626 bar) 9090 psi per NFPA/T2-6-1 R2-2000
Max flow	5 USgpm
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Coil power	20W
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 <sup>3</sup> /min (15 in <sup>3</sup> /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.

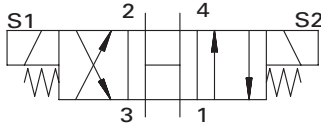
## Operation

In the de-energized position, all ports are open to each other. When solenoid 1 (S1) is energized, flow is

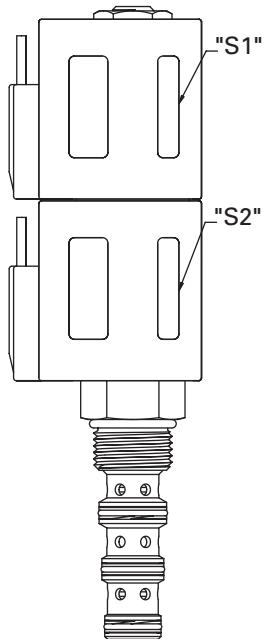
directed from port 3 to port 4 and from port 2 to port 1. When solenoid 2 (S2) is energized, flow is directed

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)*

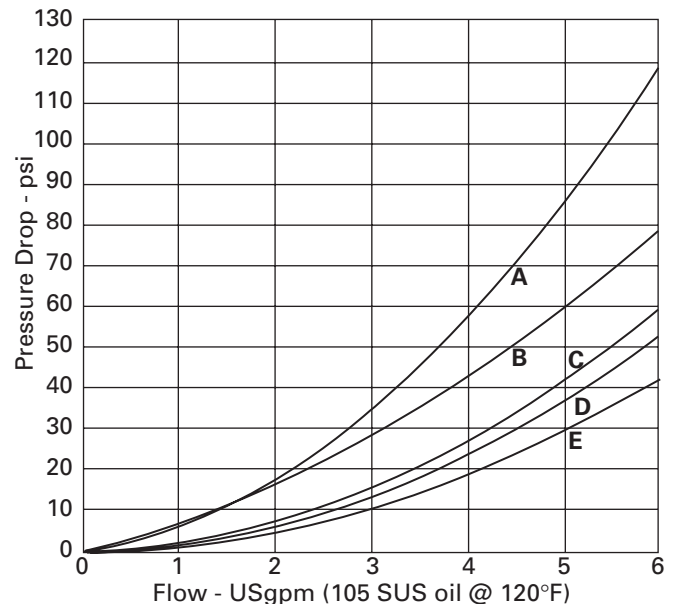
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Fatigue pressure	3,000 psi per NFPA/T2-6-1 R2-2000
Rated burst pressure	(626 bar) 9090 psi per NFPA/T2-6-1 R2-2000
Max flow	6 USgpm
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Coil power	20W
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 <sup>3</sup> /min (15 in <sup>3</sup> /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

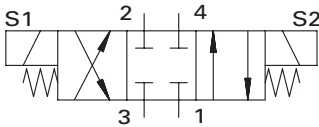
## Description

The SV9-10-E is a 4-way, 3-position, direct acting, spool type directional valve.

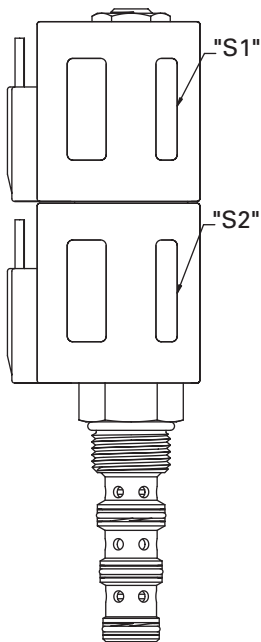
## Operation

In the de-energized (center) position, all ports are blocked. When solenoid 1 (S1) is energized, flow is directed from port 3 to port 2 and from port 4 to port 1. When solenoid 2 (S2) is energized, flow is directed from port 3 to port 1 and from port 4 to port 2.

## Functional Symbol



## Profile View



## RATINGS AND SPECIFICATIONS

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

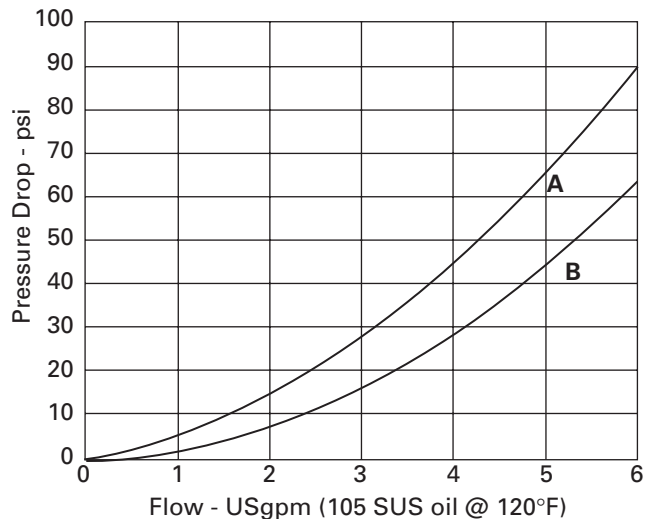
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Fatigue pressure	3,000 psi per NFPA/T2-6-1 R2-2000
Rated burst pressure	(626 bar) 9090 psi per NFPA/T2-6-1 R2-2000
Max flow	6 USsgpm
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Coil power	20W
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 <sup>3</sup> /min (15 in <sup>3</sup> /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

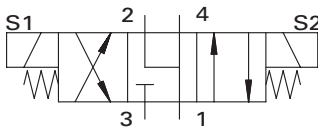
The SV9-10-F is a 4-way, 3-position, direct acting, spool type directional valve.

## Operation

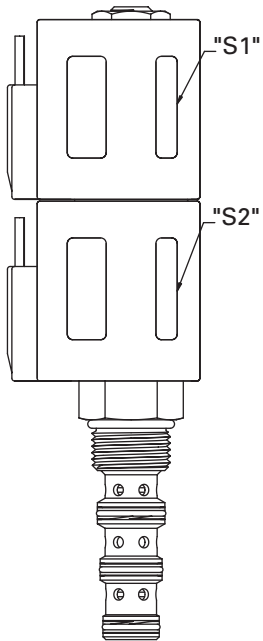
In the de-energized (center) position, port 1, port 2, and port 4 are open to each other while port 3 is blocked. When solenoid 1 (S1) is energized, flow is

directed from port 3 to port 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)*

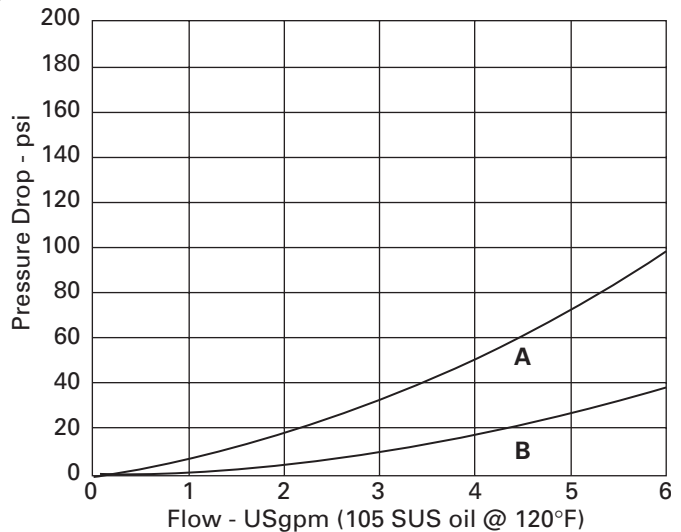
Typical application pressure (all ports)	210 bar (3000 psi)
Cartridge fatigue pressure (infinite life)	210 bar (3000 psi)
Fatigue pressure	3,000 psi per NFPA/T2-6-1 R2-2000
Rated burst pressure	(626 bar) 9090 psi per NFPA/T2-6-1 R2-2000
Max flow	6 USgpm
Temperature range	-40° to 120°C (-40° to 248°F)
Coil duty	Continuous from 85% to 110% of nominal voltage
Coil power	20W
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®) ®Viton is a registered trademark of E.I. DuPont
Internal leakage	246 cm <sup>3</sup> /min (15 in <sup>3</sup> /min) max. @ 210 bar (3000 psi)

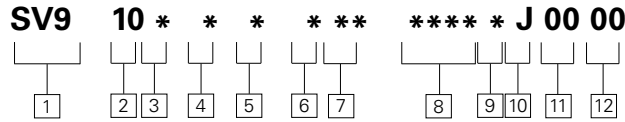
*Endurance tested to 1 million cycles at full rated flow and pressure.*

## 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



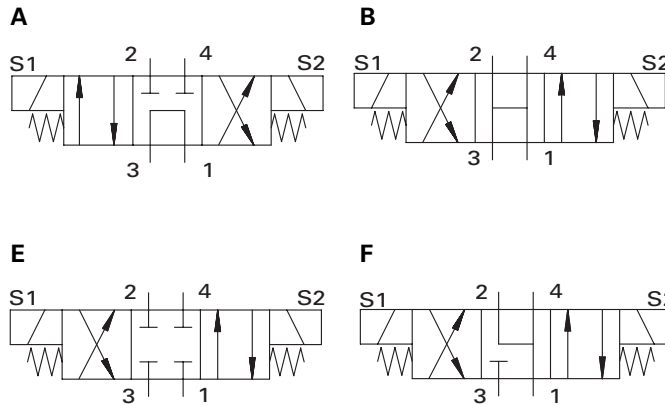


**1 Function**  
**SV9** - Solenoid valve

**2 Size**  
**10** - 10 size

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

**4 Spool center condition**



**8 Voltage rating†**  
**0000** - No coil  
**012D** - 12VDC  
**024D** - 24VDC  
**036D** - 36VDC  
**024A** - 24VAC  
**120A** - 120VAC  
**240A** - 240VAC  
**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 next page.

**6 Housing material**  
**0** - Cartridge only  
**A** - Aluminum  
**S** - Steel

**9 Connector types†**  
**0** - No coil  
**G** - ISO 4400 DIN 43650  
**P** - 1/2" NPT conduit port w/leadwire  
**Q** - Spade terminals  
**W** - Leadwire  
**N** - Deutsch (DC only)  
**Y** - Amp JR (DC only)

**7 Port Size†**

CODE	PORT SIZE	HOUSING NUMBER	
		Aluminum Light duty	Aluminum Fatigue rated
<b>00</b>	Cartridge only		
<b>3B</b>	3/8" BSPP	02-179705	
<b>2G</b>	1/4" BSPP		876709
<b>3G</b>	3/8" BSPP		876715
<b>6H</b>	SAE 4		876708
<b>8H</b>	SAE 6		876713
<b>6T</b>	SAE 6	566161	

See section J for housings.

† These model digits are not stamped on the valve.

**10 Coil series†**  
**0** - No Coil  
**J** - 10 series, 20 W

**11 Coil special features†**  
**00** - None

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

# 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 on page C-4.

### Note

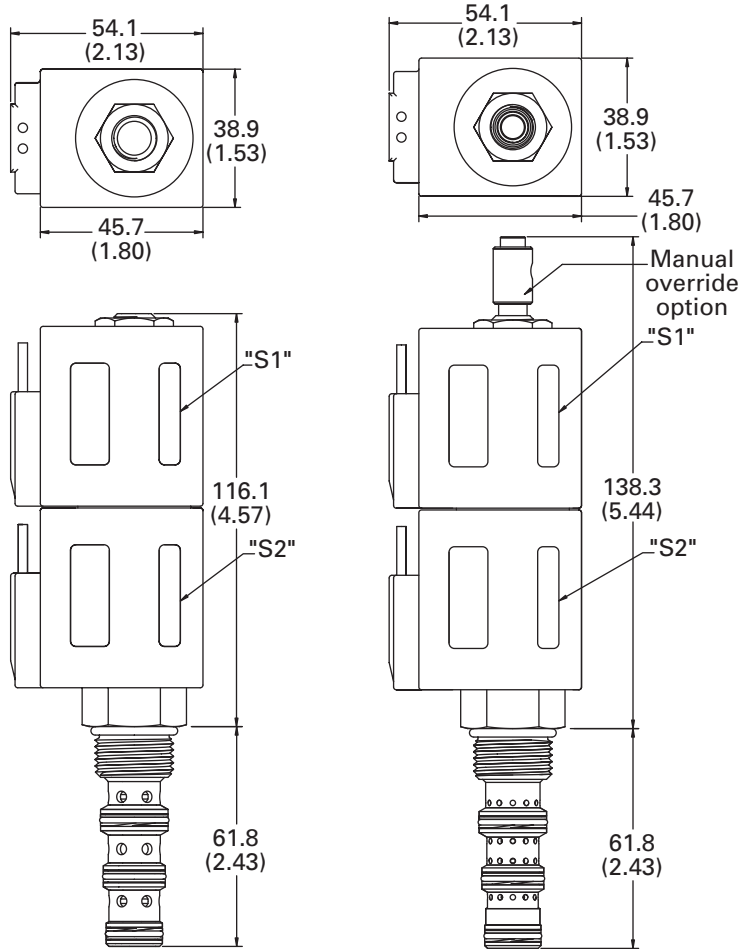
When solenoid valve is ordered as cartridge only, coil nut is included.

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 10 series, 20 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.

# 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

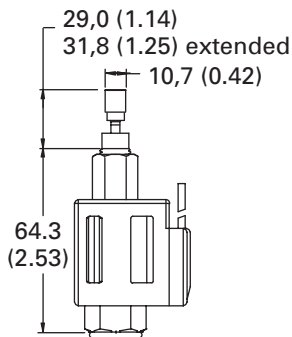
#### To override:

1. Turn the override button clockwise until it stops.

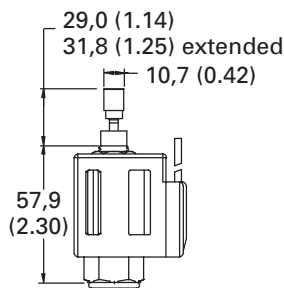
2. The override button will remain activated until the override button is turned counterclockwise.

#### To release:

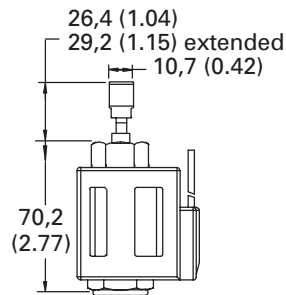
1. Turn the override button counterclockwise until it stops.



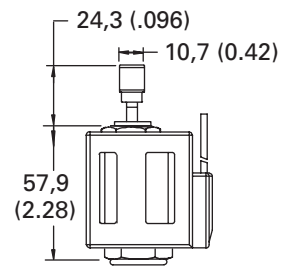
8-Series – 210 bar valves



8-Series – 350 bar valves



10, 12, 16, 20-Series – 210 bar valves



10, 12, 16, 20-Series – 350 bar valves

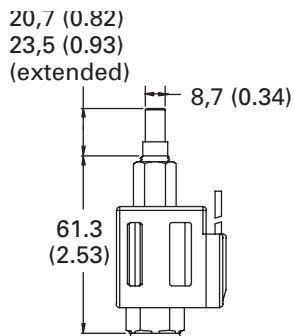
### Manual override "P" push type

#### To override:

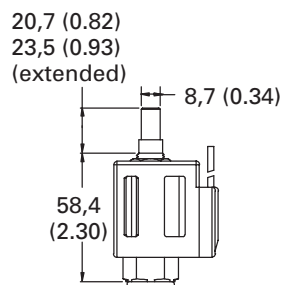
1. Push the override button to stop and hold.

#### To release:

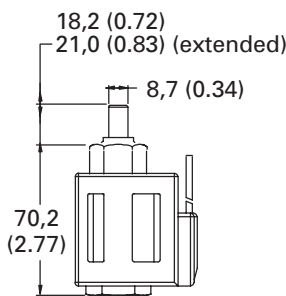
1. Remove pressure from the override button.



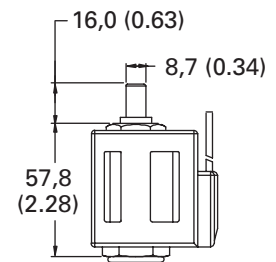
8-Series – 210 bar valves



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**

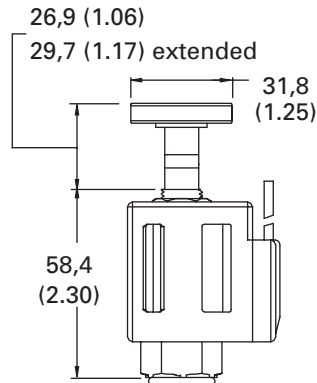
### Manual override "M" pull type

#### To override:

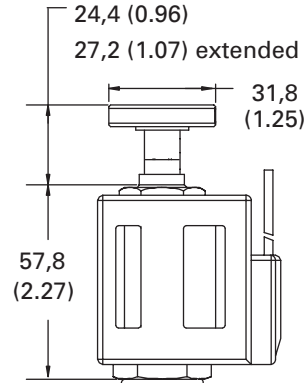
1. Pull up knob until the override tooth is completely out of the detent base.
2. Turn the knob clockwise until the override tooth is resting securely on top of the detent base slot.

#### 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.

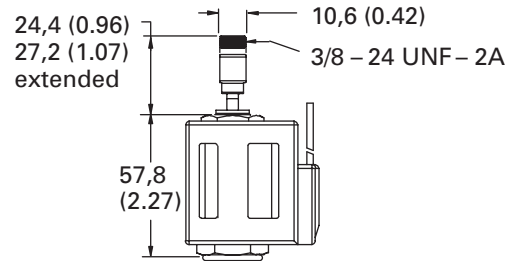


**8-Series – 210 bar and 350 bar values**



**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	

Алматы (7273)495-231  
Ангарск (3955)60-70-56  
Архангельск (8182)63-90-72  
Астрахань (8512)99-46-04  
Барнаул (3852)73-04-60  
Белгород (4722)40-23-64  
Благовещенск (4162)22-76-07  
Брянск (4832)59-03-52  
Владивосток (423)249-28-31  
Владикавказ (8672)28-90-48  
Владимир (4922)49-43-18  
Волгоград (844)278-03-48  
Вологда (8172)26-41-59  
Воронеж (473)204-51-73  
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06  
Ижевск (3412)26-03-58  
Иркутск (395)279-98-46  
Казань (843)206-01-48  
Калининград (4012)72-03-81  
Калуга (4842)92-23-67  
Кемерово (3842)65-04-62  
Киров (8332)68-02-04  
Коломна (4966)23-41-49  
Кострома (4942)77-07-48  
Краснодар (861)203-40-90  
Красноярск (391)204-63-61  
Курск (4712)77-13-04  
Курган (3522)50-90-47  
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13  
Москва (495)268-04-70  
Мурманск (8152)59-64-93  
Набережные Челны (8552)20-53-41  
Нижний Новгород (831)429-08-12  
Новокузнецк (3843)20-46-81  
Ноябрьск (3496)41-32-12  
Новосибирск (383)227-86-73  
Омск (3812)21-46-40  
Орел (4862)44-53-42  
Оренбург (3532)37-68-04  
Пенза (8412)22-31-16  
Петрозаводск (8142)55-98-37  
Псков (8112)59-10-37  
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15  
Рязань (4912)46-61-64  
Самара (846)206-03-16  
Санкт-Петербург (812)309-46-40  
Саратов (845)249-38-78  
Севастополь (8692)22-31-93  
Саранск (8342)22-96-24  
Симферополь (3652)67-13-56  
Смоленск (4812)29-41-54  
Сочи (862)225-72-31  
Ставрополь (8652)20-65-13  
Сургут (3462)77-98-35  
Сыктывкар (8212)25-95-17  
Тамбов (4752)50-40-97  
Тверь (4822)63-31-35

Тольятти (8482)63-91-07  
Томск (3822)98-41-53  
Тула (4872)33-79-87  
Тюмень (3452)66-21-18  
Ульяновск (8422)24-23-59  
Улан-Удэ (3012)59-97-51  
Уфа (347)229-48-12  
Хабаровск (4212)92-98-04  
Чебоксары (8352)28-53-07  
Челябинск (351)202-03-61  
Череповец (8202)49-02-64  
Чита (3022)38-34-83  
Якутск (4112)23-90-97  
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

<https://vickers.nt-rt.ru> || [vsh@nt-rt.ru](mailto:vsh@nt-rt.ru)