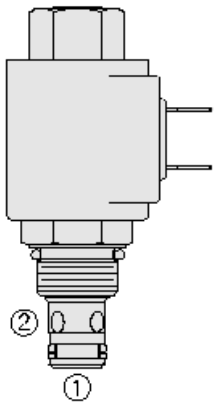
## Overview



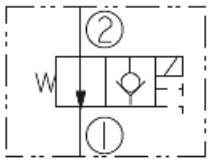

### Description

A solenoid-operated, 2 way, normally open, poppet type, screw-in hydraulic cartridge valve designed for low leakage in load-holding applications. When de-energized, the SV08-21 allows flow from 2 to 1. Flow from 1 to 2 is severely restricted. When energized, the valves poppet closes on its seat, blocking flow from 2 to 1. The cartridge will allow 1 to 2 flow after overcoming the solenoid force.

### Features

- Continuous-duty rated coil. Hardened seat for long life and low leakage. Optional coil voltages and terminations. Cartridges are voltage interchangeable. Unitized, molded coil design. Manual override option. Optional waterproof E-Coils rated up to IP69K. Industry common cavity. Compact size.

### Symbol




## Ratings

### Flow Ratings

| | |
|---|---|
| Flow rating | See performance chart |
| Maximum internal leakage | 5 drops/min **- Note:** Maximum at 207 bar (3000 psi) |

### Pressure Ratings

| | |
|---|---|
| Pressure rating | 207 bar (3000 psi) |

### Temperature Ratings

| | |
|---|---|
| Operating fluid temperature | -40 to 120 °C |

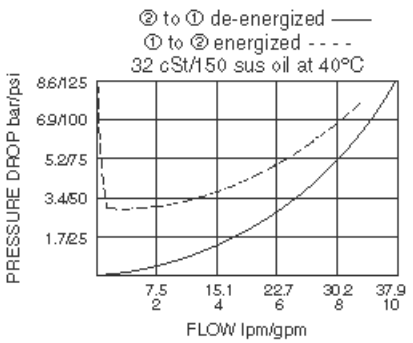
## Properties

| | |
|---|---|
| Materials | Steel with hardened work surface zinc plated exposed. Buna N o-ring and Teflon back-up rings |

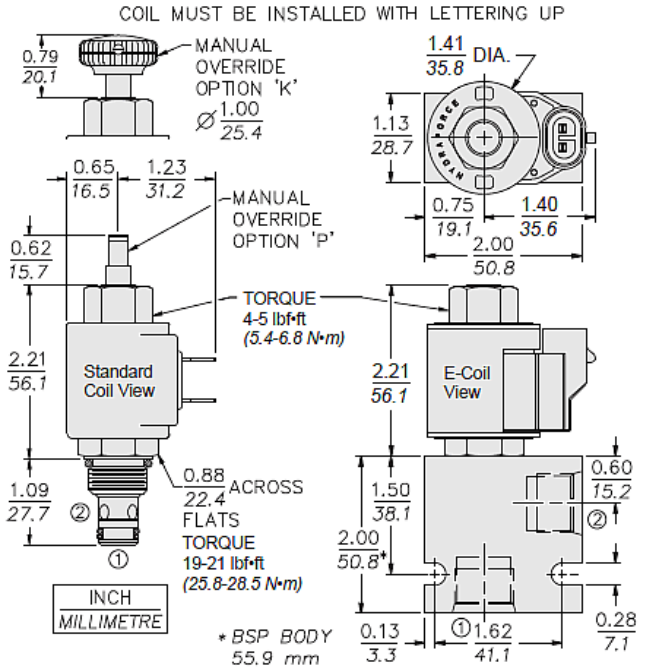
## Electrical Parameters

| | |
|---|---|
| Pull in voltage | 85% of nominal at 40 °C (104 °F) |
| Drop out voltage | 5% of nominal |

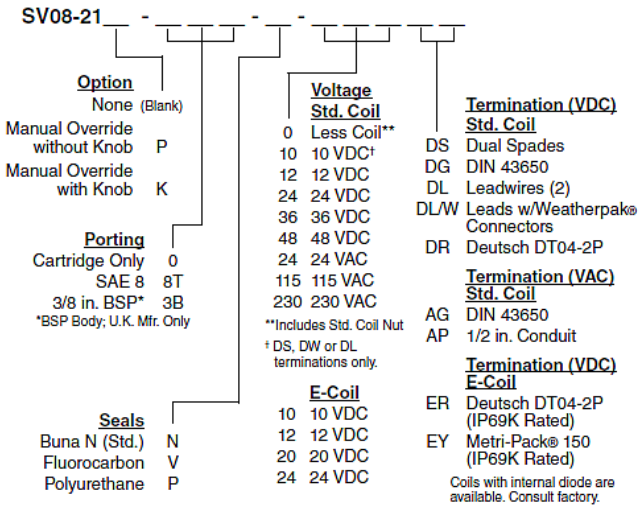
## Performance



## Dimensions




## Order Code




### Model Options

**SV08-21EG-H-J-L**

**E Manual Override**

| CODE | DESCRIPTION |
|---|---|
| BLANK | NONE |
| HP | Momentary Push Override, Button with Protective Nut |
| K | Momentary Push Override, Knob |
| P | Momentary Push Override, Button |

**G Screen**

| CODE | DESCRIPTION |
|---|---|
| BLANK | NONE |
| S | 100 Mesh Screen |

**H Line Body**

| CODE | DESCRIPTION |
|---|---|
| 0 | No Body |
| 4T | Aluminum SAE 4 |
| 6T | Aluminum SAE 6 |
| 8T | Aluminum SAE 8 |
| 6TD | Ductile Iron SAE 6 |
| 8TD | Ductile Iron SAE 8 |
| 2B | Aluminum BSPP 1/4" (2) |
| 3B | Aluminum BSPP 3/8" (3) |
| 3BD | Ductile Iron BSPP 3/8" (3) |

### J Seal

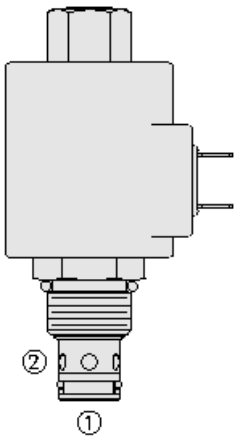
| CODE | DESCRIPTION |
|---|---|
| N | Buna-N |
| V | Fluorocarbon |
| P | Polyurethane |
| U | PPDI Urethane |

### L Coil

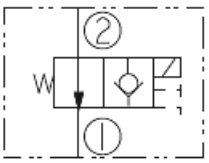
| CODE | DESCRIPTION |
|---|---|
| 0 | No Coil |
| 10DL | 10 VDC, D-Coil, Dual Lead Wires |
| 10DR/D | 10 VDC, D-Coil, Deutsch with Diode |
| 10DS | 10 VDC, D-Coil, Dual Spade |
| 10EL | 10 VDC, E-Coil, Dual Lead Wires, 18 inches long |
| 10EL/36 | 10 VDC, E-Coil, Dual Lead Wires, 36 inches long |
| 10ER | 10 VDC, E-Coil, Deutsch |
| 10ER/Z | 10 VDC, E-Coil, Deutsch with Zener Diode |
| 12DG | 12 VDC, D-Coil, DIN 43650 |
| 12DL | 12 VDC, D-Coil, Dual Lead Wires, 18 inches long |
| 12DL/36 | 12 VDC, D-Coil, Dual Lead Wires, 36 inches long |
| 12DL/W | 12 VDC, D-Coil, Dual Lead Wires with Weatherpak |
| 12DL/W/D | 12 VDC, D-Coil, Dual Lead Wires with Weatherpak with Diode |
| 12DR | 12 VDC, D-Coil, Deutsch |
| 12DR/D | 12 VDC, D-Coil, Deutsch with Diode |
| 12DR/Z | 12 VDC, D-Coil, Deutsch with Zener Diode |
| 12DS | 12 VDC, D-Coil, Dual Spade |
| 12EG | 12 VDC, E-Coil, DIN 43650 |
| 12EG/Z | 12 VDC, E-Coil, DIN 43650 with Zener Diode |
| 12EJ | 12 VDC, E-Coil, AMP Jr. |
| 12EJ/Z | 12 VDC, E-Coil, AMP Jr. with Zener Diode |
| 12EL | 12 VDC, E-Coil, Dual Lead Wires, 18 inches long |
| 12EL/36 | 12 VDC, E-Coil, Dual Lead Wires, 36 inches long |
| 12EL/Z | 12 VDC, E-Coil, Dual Lead Wires with Zener Diode |
| 12ER | 12 VDC, E-Coil, Deutsch |

| CODE | DESCRIPTION |
|---|---|
| 12ER/Z | 12 VDC, E-Coil, Deutsch with Zener Diode |
| 12EY | 12 VDC, E-Coil, Metri-Pack 150 |
| 12EY/Z | 12 VDC, E-Coil, Metri-Pack 150 with Zener Diode |
| 20DG | 20 VDC, D-Coil, DIN 43650 |
| 20DS | 20 VDC, D-Coil, Dual Spade |
| 20ER | 20 VDC, E-Coil, Deutsch |
| 20ER/Z | 20 VDC, E-Coil, Deutsch with Zener Diode |
| 24AG | 24 VDC, D-Coil, DIN 43650 |
| 24AP | 24 VDC, D-Coil, 1/2" Conduit and Dual Lead Wires |
| 24DG | 24 VDC, D-Coil, DIN 43650 |
| 24DL | 24 VDC, D-Coil, Dual Lead Wires, 18 inches long |
| 24DL/36 | 24 VDC, D-Coil, Dual Lead Wires, 36 inches long |
| 24DL/W | 24 VDC, D-Coil, Dual Lead Wires with Weatherpak |
| 24DR | 24 VDC, D-Coil, Deutsch |
| 24DR/D | 24 VDC, D-Coil, Deutsch with Diode |
| 24DR/Z | 24 VDC, D-Coil, Deutsch with Zener Diode |
| 24DS | 24 VDC, D-Coil, Dual Spade |
| 24EG | 24 VDC, E-Coil, DIN 43650 |
| 24EG/Z | 24 VDC, E-Coil, DIN 43650 with Zener Diode |
| 24EJ | 24 VDC, E-Coil, AMP Jr. |
| 24EL/D | 24 VDC, E-Coil, Dual Lead Wires with Diode |
| 24ER | 24 VDC, E-Coil, Deutsch |
| 24ER/Z | 24 VDC, E-Coil, Deutsch with Zener Diode |
| 24EY | 24 VDC, E-Coil, Metri-Pack 150 |
| 24EY/Z | 24 VDC, E-Coil, Metri-Pack 150 with Zener Diode |
| 36DG | 36 VDC, D-Coil, DIN 43650 |
| 36DS | 36 VDC, D-Coil, Dual Spade |
| 115AG | 115 VAC, D-Coil, DIN 43650 |
| 115AP | 115 VAC, D-Coil, 1/2" Conduit and Dual Lead Wires |
| 230AG | 230 VAC, D-Coil, DIN 43650 |
| 230AP | 230 VAC, D-Coil, 1/2" Conduit and Dual Lead Wires |

## Overview




### Symbol




### Description

A solenoid-operated, 2 way, piloted, poppet-type, normally open, screw in hydraulic cartridge valve designed for low leakage in load-holding applications.

### Operation

When de-energized, the SV10-21 allows flow from port 2 to port 1. Flow from port 1 to port 2 is severely restricted in this mode. When energized, the valves poppet closes on its seat, blocking flow in the port 2 to port 1 direction. In this mode the cartridge will allow port 1 to port 2 flow after overcoming the solenoid force (requires 50 to 150 psi [3.4 to 10.3 bar]).

### Features

- Continuous-duty rated coil.
- Hardened seat for long life and low leakage.
- Optional coil voltages and terminations.
- Efficient wet-armature construction.
- Cartridges are voltage interchangeable.
- Unitized, molded coil design.
- Manual override option.
- Optional waterproof E-Coils rated up to IP69K.
- Industry common cavity.

## Ratings

### Pressure Ratings

| | | |
|---|---|---|
| Pressure rating | 207 bar (3000 psi) | |
| Proof pressure | 344 bar (5000 psi) | |
| Burst pressure | 779 bar (11300 psi) | **- Note:** (sv10-20) |

### Flow Ratings

| | | |
|---|---|---|
| Flow rating | 102 lpm (27 gpm) | **- Note:** Based on |
| | 34.4 bar (500 psi) | **- Note:** See performance graph |
| Maximum internal leakage | 3 drops/min | **- Note:** At 207 bar (3000 psi) |

### Temperature Ratings

| | | |
|---|---|---|
| Operating fluid temperature | -40 to 100 °C (-40 to 212 °F) | **- Note:** With buna N seals |
| | -26 to 204 °C (-15 to 400 °F) | **- Note:** With fluorocarbon seals |
| | -54 to 107 °C (-65 to 225 °F) | **- Note:** With polyurethane seals |
| Storage temperature | -40 to 70 °C (-40 to 160 °F) | |
| Ambient temperature | -40 to 70 °C (-40 to 160 °F) | |

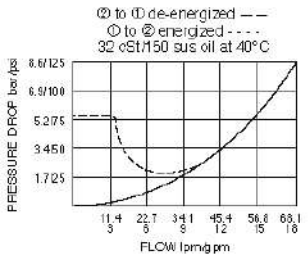
## Operating Parameters

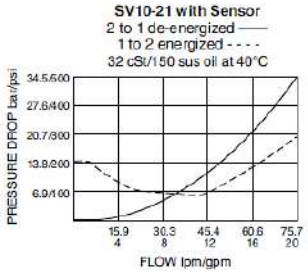
| | |
|---|---|
| Fluids | Mineral based or synthetic hydraulic fluid with lubricating properties |
| Fluid viscosity range | 7.4 to 420 cSt |
| Maximum operating contamination level | 20/18/14 per ISO 4406 |

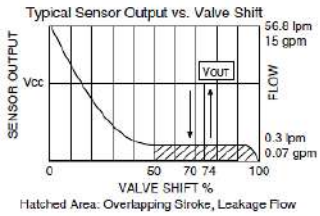
## Properties

| | | |
|---|---|---|
| Unit weight | 0.16 kg (0.35 lb) | **- Note:** Cartridge only |
| | 0.46 kg (1.02 lb) | **- Note:** Cartridge with e-coil |
| Internal wetted surface area | 210 cm² (32.5 in²) | |
| Materials | continuous from 85% to 115% of nominal voltage | |

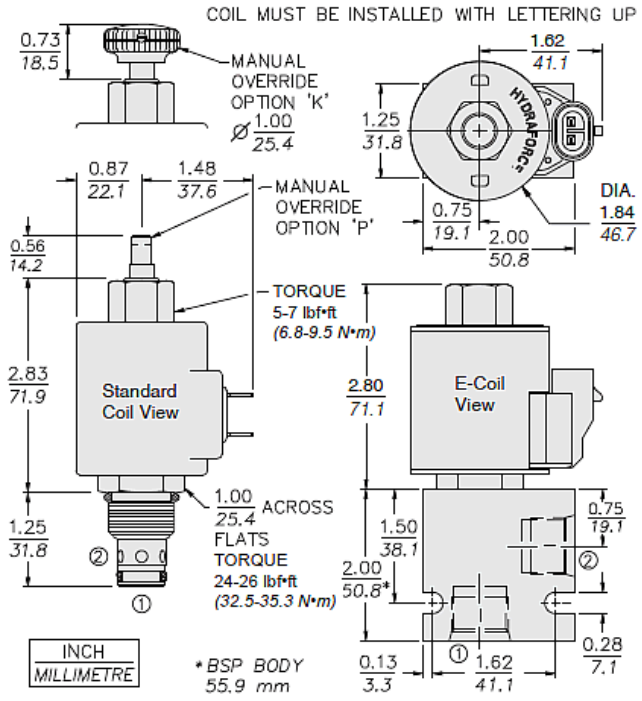
## Performance




## Dimensions



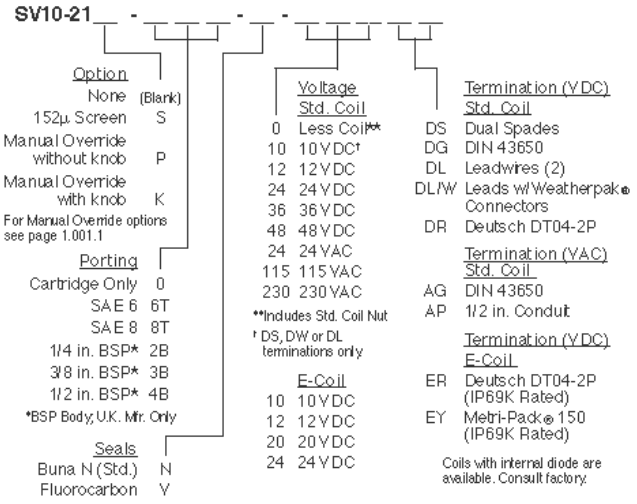

## Installation Specifications

| | |
|---|---|
| Cavity | VC10-2 |
| Cartridge installation torque | 32.5 to 35.3 N-m (24 to 26 ft-lb) |
| Coil nut torque | 6.8 to 9.5 N-m (5 to 7 ft-lb) |
| Orientation restriction | None |

## Accessories

| | | |
|---|---|---|
| Seal kit | SK10-2X-T | **- Note:** (x = seal option) |

## Order Code




### Model Options

**SV10-21EG-H-J-L**

**E Manual Override**

| CODE | DESCRIPTION |
|---|---|
| BLANK | NONE |
| HP | Momentary Push Override, Button with Protective Nut |
| K | Momentary Push Override, Knob |
| P | Momentary Push Override, Button |

**G Screen**

| CODE | DESCRIPTION |
|---|---|
| BLANK | NONE |
| S | 100 Mesh Screen |

**H Line Body**

| CODE | DESCRIPTION |
|---|---|
| 0 | No Body |
| 6T | Aluminum SAE 6 |
| 8T | Aluminum SAE 8 |
| 6TD | Ductile Iron SAE 6 |
| 8TD | Ductile Iron SAE 8 |
| 2B | Aluminum BSPP 1/4" (2) |
| 3B | Aluminum BSPP 3/8" (3) |
| 4B | Aluminum BSPP 1/2" (4) |
| 4BD | Ductile Iron BSPP 1/2" (4) |

**J Seal**

| CODE | DESCRIPTION |
|---|---|
| N | Buna-N |
| V | Fluorocarbon |
| P | Polyurethane |
| U | PPDI Urethane |

**L Coil**

| CODE | DESCRIPTION |
|---|---|
| 0 | No Coil |
| 10DG | 10 VDC, D-Coil, DIN 43650 |
| 10DL | 10 VDC, D-Coil, Dual Lead Wires |
| 10DR/D | 10 VDC, D-Coil, Deutsch with Diode |
| 10DS | 10 VDC, D-Coil, Dual Spade |
| 10EL | 10 VDC, E-Coil, Dual Lead Wires |
| 10ER | 10 VDC, E-Coil, Deutsch |
| 10ER/Z | 10 VDC, E-Coil, Deutsch with Zener Diode |
| 12DG | 12 VDC, D-Coil, DIN 43650 |
| 12DL | 12 VDC, D-Coil, Dual Lead Wires, 18 inches long |
| 12DL/36 | 12 VDC, D-Coil, Dual Lead Wires, 36 inches long |
| 12DL/W | 12 VDC, D-Coil, Dual Lead Wires with Weatherpak |
| 12DL/W/D | 12 VDC, D-Coil, Dual Lead Wires with Weatherpak with Diode |
| 12DR | 12 VDC, D-Coil, Deutsch |
| 12DR/D | 12 VDC, D-Coil, Deutsch with Diode |
| 12DR/Z | 12 VDC, D-Coil, Deutsch with Zener Diode |
| 12DS | 12 VDC, D-Coil, Dual Spade |
| 12EG | 12 VDC, E-Coil, DIN 43650 |
| 12EJ | 12 VDC, E-Coil, AMP Jr. |
| 12EL | 12 VDC, E-Coil, Dual Lead Wires, 18 inches long |
| 12EL/36 | 12 VDC, E-Coil, Dual Lead Wires, 36 inches long |
| 12EL/W/Z | 12 VDC, E-Coil, Dual Lead Wires with WeatherPak and Zener Diode |
| 12EL/Z | 12 VDC, E-Coil, Dual Lead Wires with Zener Diode |
| 12ER | 12 VDC, E-Coil, Deutsch |
| 12ER/Z | 12 VDC, E-Coil, Deutsch with Zener Diode |
| 12EY | 12 VDC, E-Coil, Metri-Pack 150 |
| 12EY/Z | 12 VDC, E-Coil, Metri-Pack 150 with Zener Diode |
| 20DR/D | 20 VDC, D-Coil, Deutsch with Diode |
| 20DS | 20 VDC, D-Coil, Dual Spade |
| 20ER | 20 VDC, E-Coil, Deutsch |
| 24AG | 24 VDC, D-Coil, DIN 43650 |
| 24AP | 24 VDC, D-Coil, 1/2" Conduit and Dual Lead Wires |
| 24DG | 24 VDC, D-Coil, DIN 43650 |
| 24DL | 24 VDC, D-Coil, Dual Lead Wires |
| 24DL/W | 24 VDC, D-Coil, Dual Lead Wires with Weatherpak |
| 24DL/W/D | 24 VDC, D-Coil, Dual Lead Wires with Weatherpak with Diode |
| 24DP | 24 VDC, D-Coil, 1/2" Conduit and Dual Lead Wires |
| 24DR | 24 VDC, D-Coil, Deutsch |
| 24DR/D | 24 VDC, D-Coil, Deutsch with Diode |
| 24DS | 24 VDC, D-Coil, Dual Spade |
| 24EG | 24 VDC, E-Coil, DIN 43650 |
| 24EJ | 24 VDC, E-Coil, AMP Jr. |
| 24EL | 24 VDC, E-Coil, Dual Lead Wires, 18 inches long |

| CODE | DESCRIPTION |
|---|---|
| 24EL/36 | 24 VDC, E-Coil, Dual Lead Wires, 36 inches long |
| 24EL/W/Z | 24 VDC, E-Coil, Dual Lead Wires with WeatherPak and Zener Diode |
| 24ER | 24 VDC, E-Coil, Deutsch |
| 24ER/Z | 24 VDC, E-Coil, Deutsch with Zener Diode |
| 24EY | 24 VDC, E-Coil, Metri-Pack 150 |
| 24EY/Z | 24 VDC, E-Coil, Metri-Pack 150 with Zener Diode |
| 36DS | 36 VDC, D-Coil, Dual Spade |
| 115AG | 115 VAC, D-Coil, DIN 43650 |
| 115AP | 115 VAC, D-Coil, 1/2" Conduit and Dual Lead Wires |
| 230AG | 230 VAC, D-Coil, DIN 43650 |
| 230AP | 230 VAC, D-Coil, 1/2" Conduit and Dual Lead Wires |