

# Diesel-Fuel Shutoff Valves



## SV-Series

- Solenoid Operated Fuel Shutoff Valve
- Diesel Engines
- Diesel Driven Pumps and Compressors
- High Pressure Models
- Select from 12 or 24 VDC Models

### Description

The SV-series valve is a normally closed valve that opens when current is supplied from the battery through a magnetic switch. Temperature, level, or pressure SWITCHGAGE® instruments installed on the engine and pump or compressor, trip the magnetic switch, breaking the circuit from the battery which closes the valve and stops the engine.

The SV-12 valve operates on 12VDC, has a 1/4 NPT inlet and outlet, and a full 3/16 in. (5 mm) orifice. 24 VDC (SV-24) is optional. The SV valves open against 30 psi. (207 kPa) [2.07 bar] inlet pressure.

### Greater Flow Rate Valve

Special series SV valve is available with a 1/4 in. (6 mm) orifice which opens against maximum pressure of 15 psi (103 kPa) [1.03 bar]. This valve is recommended where greater flow is required, and only static head or low transfer pump pressures are encountered.

### High Pressure Valves

SV-HP series valves open against diesel fuel transfer pump pressure up to 60 psi (414 kPa) [4.14 bar]. Models are available for 12 or 24 DC systems. The orifice is 1/4 in. (6 mm), using the same inlet/outlet and options as standard SV.

### Specifications

**Electrical Rating:** 12 VDC, 10 watts

**Orifice:** 3/16 in. (5 mm) diameter (optional 1/4 in. [6 mm] diameter). See chart above, right.

**Body Connections:** 1/4 NPT inlet/outlet

**Maximum Opening Pressure:**

3/16 in. (5 mm) orifice: 30 psi (207 kPa) [2.07 bar]  
 1/4 in. (6 mm) orifice: 15 psi (103 kPa) [1.03 bar]

### SV-HP (High Pressure model)

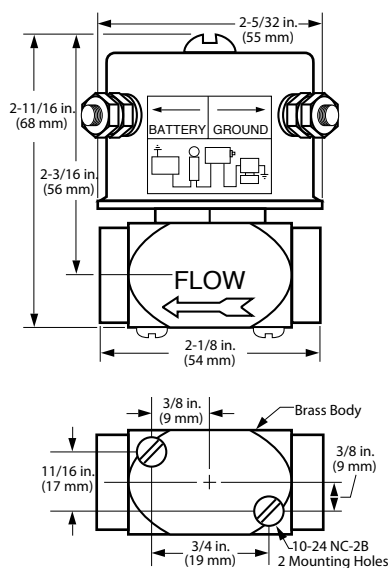
**Orifice:** 1/4 in. (6 mm) diameter. See chart below.

**Maximum Opening Pressure:**

60 psi (414 kPa) [4.14 bar].

Differential Pressure	3/16 Orifice					1/4 Orifice					
	1	2	5	10	20	30	1	2	5	10	15
Gallons per Minute	.48	.68	1.1	1.5	2.2	2.6	.72	1.05	1.65	2.35	2.70
Liters per Minute	2.01	2.85	4.62	6.3	9.24	10.92	3.02	4.41	6.93	9.87	11.34

### Dimensions



**Shipping Weight:** 1 lb. 6 oz. (0.68 kg)

**Shipping Dimension:** 3 x 2-3/4 Sx 2-3/4 in. (76 x 70 x 70 mm)

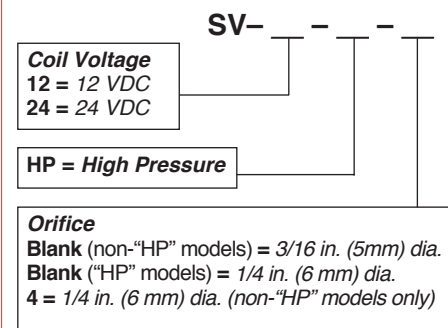
### Warranty

A limited warranty on materials and workmanship is given with this FW Murphy product. A copy of the warranty may be viewed or printed by going to [www.fwmurphy.com/support/warranty.htm](http://www.fwmurphy.com/support/warranty.htm)

### How to Order

See the diagram below, example: **SV-12-HP**

**CAUTION:** Do NOT use the SV valves with distributor type injection pumps. For use with DIESEL ONLY.



### SV Repair Parts

Callouts diagram shown on page 2

Callout	Part Description	Part Number
A	Screw	80-04-1412
B	Coil Replacement Kit	
	12 volt kit	55-01-0141
	24 volt kit	55-01-0145
C	Bonnet Seal	55-05-0091
D	Core Tube Assembly	55-01-0124
E	Core Assembly	55-01-0125
	HP Models	55-01-0127
F	Copper Seal Gasket	55-05-0338
G	Valve Body: <b>3/16 Orifice</b>	
	1/4 NPT x 1/4 NPT (std.)	55-05-0194
G	Valve Body: <b>1/4 Orifice</b>	
	1/4 NPT x 1/4 NPT	55-05-0193



## Things You Should Know About SV-Series Valves

The SV-Series fuel shutoff valve is intended for use with diesel engines having externally accessible fuel injection pumps. The volume of fuel required for the engine to operate must be able to pass through the 3/16 in. (5 mm) or 1/4 in. (6 mm) orifice of the valve. You must be able to attach the fuel valve directly onto or in close proximity to the fuel injection pump in order to close off fuel flow to the pump. SV-series is **NOT** intended for use with engines having "unit" injectors or distributor type injection pumps. Use **only** with diesel.

### Installation and Service Suggestions

1. Make sure the valve is the same voltage as the battery. Under continuous duty, the coil will normally be hot, however, incorrect voltage can cause smoking and burned coils.
2. The valve will not operate if the flow arrow on the side of the valve does not indicate the correct direction of flow.
3. Do not apply pipe dope to female valve threads. Dope inside the valve will foul the seat and prevent proper seal.
4. Install the valve as close as possible to the injection pump.

## Troubleshooting the SV-Series Valves

**Check Control Circuit:** To determine if the electrical system is energizing the solenoid, listen for a metallic click signifying the solenoid is operating. Absence of the click indicates loss of power supply. Check for blown or loose fuses, for an open circuit or a grounded coil, for broken lead wires or open splice connections.

**Coil Burnout:** Check for open-circuit coil. Replace coil if necessary.

**High or Low Voltage:** Check voltage across the coil with a voltmeter. Voltage must be in 85% to 110% of nameplate rating.

**Incorrect Pressure:** Check fuel line pressure. Pressure on the valve must be within the specific range of the SV in use.

**Fuel Leak Through Valve:** Disassemble the valve and clean parts. Replace any parts that are worn or damaged (see other side for repair parts).

**Slow Shutdown:** Due to the internal fuel capacity of some injection pumps, engine shutdown will not occur until that fuel is used up.

**Note:** If engine continues to run after the valve closes, install a check valve such as CKV2336 in return line.

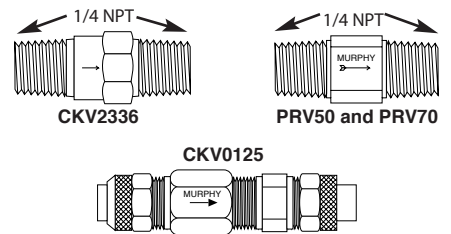
## Auxiliary Fuel Valves

### Fuel Return Line Check Valve

The CKV series is an in-line, one-way valve for the prevention of fuel siphoning from the diesel return line by an injection pump. In engine shutdown systems using a Murphy SV valve, the CKV is necessary to ensure a rapid shut down of the engine by fuel starvation of the injection system. For details see bulletin CKV-7867B.

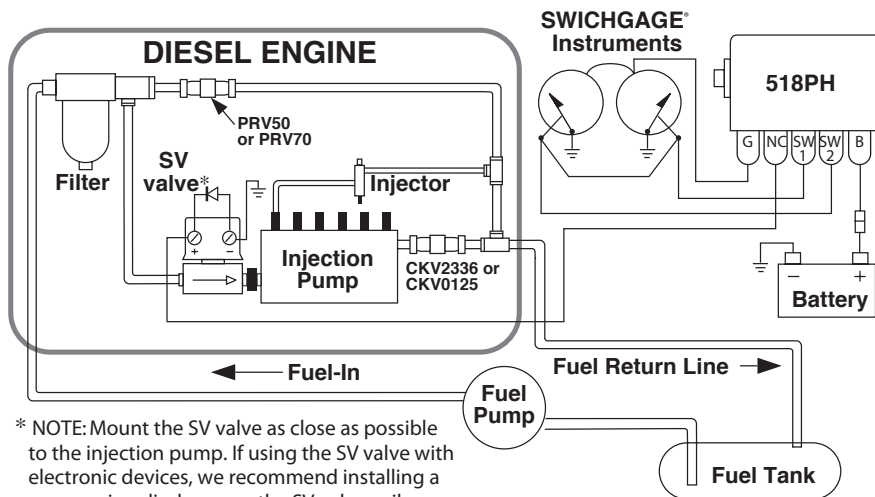
### Fuel Line Pressure Relief Valve

The PRV50 is an in-line, one-way valve for the prevention of overpressure damage to fuel filters and their housings. This pressure relief valve operates in conjunction with a Murphy SV series shutdown valve; after the SV closes, a rapid high pressure build-up caused by the fuel pump can occur. The PRV, mounted in a fuel return line after the filter, will open to relieve pressure buildup.



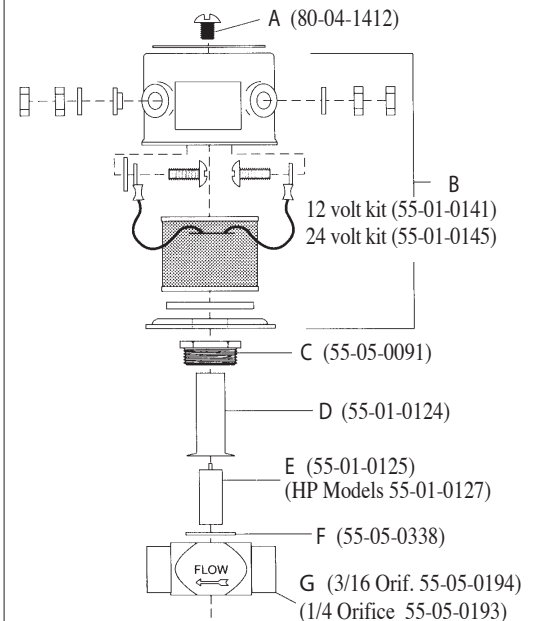
1/4 in. (6 mm) Poly Tube, Flareless Connection

## Typical SV Valve Installation



\* NOTE: Mount the SV valve as close as possible to the injection pump. If using the SV valve with electronic devices, we recommend installing a suppression diode across the SV valve coil.

## Service Parts Callouts



CALL MURCAL TO PLACE YOUR ORDER



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