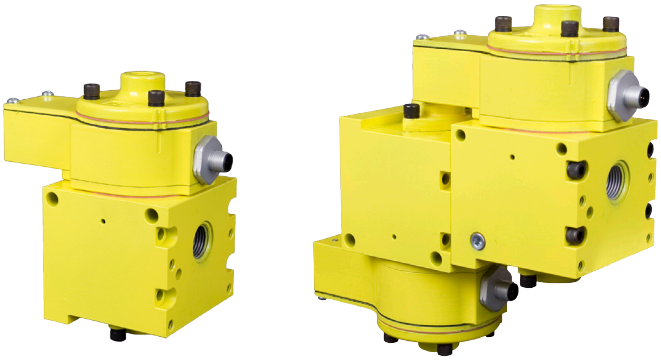
SV27 Pilot Operated Check Series Sensing Valves
Frequently Asked Questions & Troubleshooting



Basic Size 3/4 & 1¼ Valves

Valve operation:

The SV27 Pilot Operated Check Series valve consists of a standard poppet valve in which the piston has an extended rod and cam mechanism that actuates a positively driven force guided mechanical limit switch. The arrangement is such that when at rest the internal dynamic forces of the valve and spring hold the valve internals in the at rest position and the switch in its' at rest position. The switch has Normally Open and Normally Closed contacts. Pins 1 and 2 are used for Normally Open while pins 3 and 4 are used for Normally Closed. While at rest the Normally Open contacts should have continuity.
Once actuated by either a solenoid signal and/or external pilot supply, the piston drives the valve to its actuated condition while the cam drives the switch to its actuated condition. Once shifted, the Normally Open contacts are broken and the Normally Closed contacts should have continuity.
Once the actuation signal(s) are removed the internal dynamics of the valve and the spring will return the valve internals to their at rest condition. With the cam returning to its at rest condition, the spring can return the switch to its at rest condition breaking the Normally Closed contacts and making the Normally Open contacts.

The potential applications include:

Pilot Operated Check valve applications
Redundant Pilot Operated Check applications

For SV27 Valves Frequently Asked Questions please see Sensing Valves, Form FAQ280.

Normal Function and Troubleshooting:

1) Valve in the at rest condition as indicated by:
   a. Air pressure is trapped between the valve and the cylinder;
   b. Normally Open contacts have continuity, Normally Closed contacts do not
2) Valve in the actuated condition as indicated by:
   a. Air can flow freely through the valve in either direction;
   b. Normally Closed contacts have continuity, Normally Open contacts do not
3) Valve should be at rest and air is trapped but the switch is not correct
   a. The valve appears to be in the correct state
   b. Normally Closed contacts having continuity indicates the switch did not return to the at rest condition and must be examined, cleaned, or replaced
   c. Neither Normally Open or Normally Closed contacts have continuity indicates the switch did not return to the at rest condition be examine, cleaned, or replaced
4) Valve should be at rest but air is leaking out of the cylinder
   a. If Normally Closed is connected the valve is at least partially shifted. Ensure the pilot signal(s) have been removed. If the pilot signal(s) are removed, the valve is stuck in the open position which could be due to wear or contamination.
   b. If Normally Open is connected there is an internal breakage. This breakage could be of the switch mechanism or of the poppet assembly causing the valve not to seal properly or the leakage could be related to the cylinder seals or fittings.

2/2 Valves							
Proposed State		Valve Condition			Switch Condition		Troubleshooting
At Rest	Actuated	Air supply blocked	Air flowing downstream	Air leaking downstream	Normally Open	Normally Closed	
X		X			X		Correct condition.
X		X				X	Switch is stuck in the shifted position.
X			X		X		Valve is partially shifted or indicates switch or internal poppet breakage.
X			X			X	Valve is at least partially shifted, ensure pilot signal(s) are removed. May indicate internal failure or the switch or poppet assembly.
X				X	X		Indicates poppet damage and leakage, or cylinder/fitting leakage.
X				X		X	Valve is at least partially shifted, ensure pilot signal(s) are removed. May indicate internal failure or the switch or poppet assembly.
	X	X			X		Valve has not shifted, ensure proper pilot signal(s) and air supply.
	X	X				X	Valve has not shifted but switch is stuck in the shifted position.
	X		X		X		Valve is fully shifted, switch or switch mechanism has mechanically failed.
	X		X			X	Correct condition.
	X			X	X		Valve is at least partially shifted. May indicate internal failure of the switch or poppet assembly.
	X			X		X	Valve is at least partially shifted. Indicates internal failure of the poppet assembly.

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