

CARTEN®

High Performance Valves & Flow Solutions

SPDS Series

Ultra-High Purity Diaphragm Valves



For High Purity Gas and Chemical Distribution Systems

High Purity High Performance Diaphragm Valves

Product Applications



This SPDS (diaphragm Design) is intended for bulk gas distribution where containment, cleanliness and purity are of the utmost importance. Applications for this valve include:

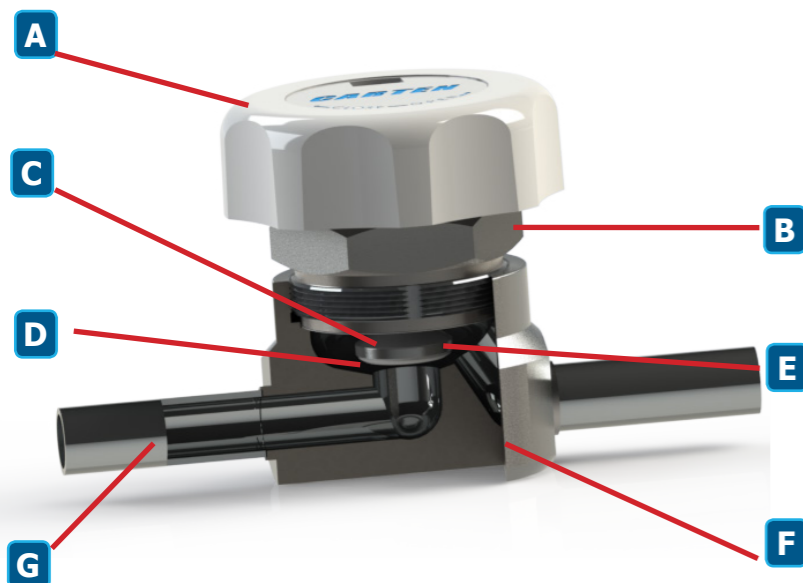
- High-purity gas system control valves
- High-purity gas control for point-of-use service
- Superior containment and cleanliness for your most critical valve applications
- Suitable for inert and most toxic gases

Product Features

- Diaphragm Design for Ultra-High Purity and Long Cycle Life
- High-Purity Stainless/PCTFE Construction
- Elgiloy Tied-Diaphragm for Maximum Flow & High Life Cycle - 1/2", 3/4" and 1"
- Springless, Packless Design for High Purity
- No Internal Particle Shedding Components
- Electropolished Wetted Surfaces to 10 Ra Max (Optional surface finishes available)
- Maximum Leak Rate of 1×10^{-9} scc/s He for Diaphragm Seal and PCTFE Seat Insert*
- Available with Purge Connections and Integral Purge Valves
- Available as multi-port T-Valves (SPDST Range), TEE Block
- Available as pneumatically-actuated
- Assembled and Tested in CLASS 10 Cleanroom
- Valve Bodies and Tube Stubs are Serialized for Material Certification
- Inboard and Across the Seat Leak Tested with 100% Helium
- Cleaned For High-Purity Gas Service
- Purged and Final Packaged in CLASS 1 Cleanroom. Double-Bag Packaging with N Gas Environment Supplied from Liquid Source

*Excluding Permeation of PCTFE

Material of Construction



Item	Part
A	ABS
B	Bonnet Stainless Steel
C	Elgiloy Diaphragms (Tied-Diaphragms)
D	Seat PCTFE
E	Seat Holder 316L St. St.
F	Body Barstock 316L St. St.
G	Tube Ends 316L St. St.

SPDS Series Technical Specifications

Maximum Operating Pressure	SPDS Series	Vacuum to 375 psi. (25.85 BAR)			
Maximum Operating Temperature	PCTFE Seat VespeI® Seat	-30°C (-22°F) to 82°C (180°F) 302°F (150°C)			
Helium Leak Test	Inboard	$<1 \times 10^{-9}$ scc/s He (1×10^{-10} Pa-M ³ /s)	Inch Model		Cv
	Across the Seat		Description	Line Size (Body) Size	
Outboard Pressure Test	$<1 \times 10^{-9}$ scc/s He (1×10^{-10} Pa-M ³ /s)				
Cleanliness and Packaging	Assembled and tested in Class 10 Cleanroom. Purged and Final Packaged in Class 10 Cleanroom. Double-bag packaging with Ultra-High Purity N ₂ gas environment.		SPDS 250	.250 (.250)	0.41
			SPDS 375	.375 (.250)	0.64
Standard Finish	Electropolished to 10 Ra µin Max (0.25 µm) on all wetted surfaces		SPDS 500	.500 (.500)	2.80
			SPDS 755	.750 (.500)	3.15
Options	Optional surface finishes available. Testing: particle, moisture, O ₂ , SEM, ESCA and AES on request. Purge connections and Purge valves are available as requested. Face seal, twin ferrule compression fittings available up to 1" lines.		SPDS 750	.750 (.750)	3.90
			SPDS 1075	1.000 (.750)	3.90
			SPDS 751	.750 (1.000)	7.00
			SPDS 1000	1.000 (1.000)	9.00

* VespeI is a registered trademark of DuPont Company.



Order Information

SPDS - 750 - 065 - 065* - PV15 - WT

1	2	3	4	5	7
Series	Description (Line Size)	Inlet Connection	Outlet Connection	Purge Type	Handwheel Colours**
SPDS	250 (1/4")	1/2" TE = 049	1/2" TE = 049	PC1 - 1/4" Downstream Purge	Manual Handle - Blue Colour -BL
	375 (3/8")	3/4" TE = 049	3/4" TE = 049	PC2 - 1/4" Up and Downstream Purge	Manual Handle - Black Colour - BR
	500 (1/2")	3/4" TE = 065	3/4" TE = 065	PC3 - 1/4" Upstream Purge	Manual Handle - Gold Colour - GL
	755 (3/4")	1" TE = 065	1" TE = 065	PV1- 1/4" Downstream Valve	Manual Handle - Green Colour -GR
	750 (3/4")	1/2" FSM FM		PV2 - 1/4" Up and Downstream Valve	Manual Handle - Grey Colour - GY
	1075 (1")	1/2" FSM MS		PV3 - 1/4" Upstream Valve	Manual Handle - Purple Colour - PR
	751 (3/4")	3/4" FSM FM		PC15 - 1/2" Downstream Purge	Manual Handle - Red Colour - RD
	1000 (1")	3/4" FSM MS		PC25 1/2" - Up and Downstream Purge	Manual Handle - Silver Colour - SL
		1" FSM FM		PC35 - 1/2" Upstream Purge	Manual Handle - White Colour - WT
		1" FSM MS		PV15 - 1/2" Downstream Valve	Manual Handle - Yellow Colour - YL
				PV25 - 1/2" Up and Downstream Valve	VespeI Seat -V
				PV35 - 1/2" Upstream Valve	

*Leave this section blank if the outlet connection is the same as the inlet connection

** Unless otherwise specified, a standard white handwheel is provided with the SPDS Series

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