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FLOW SOLUTIONS - **WE GO BEYOND**

INTRODUCING CARTEN'S UPC, DPC SERIES

ULTRA-HIGH PURITY TEE BLOCK DIAPHRAGM VALVES



SALES@CARTENCONTROLS.COM

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UPC / DPC Series

Ultra-High Purity TEE Block Diaphragm Valves

Utilises all SPDS parts and advantages of our diaphragm valve for semiconductor applications, combined with the low dead space design

Key Features

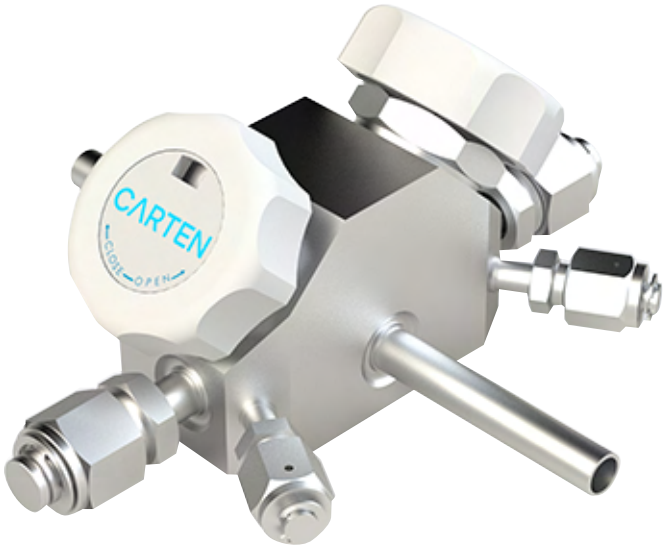
Available in line sizes up to 4" main / 1.5" branch	Metal-to-metal external seals	Minimal dead space	Standard & bespoke multiport / block options

Typical Applications

Lateral ***inline*** points-of-connection (POC), ultra-high-purity gas control for point-of-use service, zero dead space bulk gas tee-off, UHP gas sampling, and critical application containment functionality.

Key Specifications

Materials of Construction	Cleanliness	Specifications	Options
316L stainless body	Manufactured in ISO Class 4 Cleanroom	100% leak tested using mass spectrometer to $1x10^{-9}$ scc/s under vacuum and $1x10^{-6}$ scc/s under pressure	Manual or pneumatic, LOTO failsafe configurations
Elgiloy Diaphragm	Zero particles @0.1µm in static conditions	<10Ra micro-inch surface roughness	PFA / PI seat high temperature (up to 150C)
Barstock-only source	<10ppb O2/H20 outgassing	Manual 375 PSI Max - Pneumatic 250 PSI Max	Multiple block orientations and configurations (DPV etc)
PCTFE standard seat (minimal volume)	Cleaned using DI water & oven-baked	2.5 - 9.0 Cv (flow coefficient)	



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UPC / DPC Series Technical Specifications

Maximum Operating Pressure	**SPDS Series**	Vacuum to 375 psi. (25.85 BAR)
Maximum Operating Temperature	**PCTFE Seat (Standard)** **Vespel® Seat**	–30°C (-22°F) to 82°C (180°F) 302°F (150°C)
Construction Material	**Wetted Areas**	316l SS, Elgiloy, PCTFE
	Non-Wetted Areas	316L / 303 SS, ABS

Inch Model		**Cv**
Description	**Size**	
UPC / DPC	All sizes	2.96
UPV / DPV	All sizes	3.10
UPCL / DPCL	.750	5.00
UPCL / DPCL	1.000	6.00
UPCL / DPCL	.1.500	8.00

Helium Leak Test Performed with 100% Helium	Inboard Across the Seat Outboard Pressure Test	$<1 \times 10^{-9}$ scc/s He $<1 \times 10^{-9}$ scc/s He $<1 \times 10^{-6}$ scc/s He
Cleanliness and Packaging	Assembled and tested in ISO Class 4 Cleanroom. Purged and Final Packaged in ISO Class 4 Cleanroom. Double-bag packaging with Ultra-High Purity N^2 gas environment. Cleaned using DI water & Oven backed.	
Standard Finish	Electropolished to 10 Ra µin Max (0.25 µm) on all wetted surfaces	
Options	Optional surface finishes available. Testing: Particle, moisture, O2 on request. Purge connections and Purge valves available (Downstream only). Metric tube stubs. VIM/VAR st.st. optional body End connections, Face seal, Compression available up to 1".	

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Order Information

Sample: UPC500 - 049 - 1/2" FSM FM - PC1

UPC Series Manual Valve with a 1/2" Tube End Connection x 1/2" Female Connection and a 1/4" Downstream Purge Connection

Series	Size	Inlet (Thru) Connection	Outlet (Branch) Connection[1, 4]	Purge Type[5]	Handle Colour[2]	Actuator Designator[3]	Actuator Accessories[3]
UPC – Manual Multi Turn Version	500 (1/2")	½" TE = 049	3/8" TE = 375-035	Blank - No Purge	Blank (Blue Handwheel Supplied)	NC - Normally Closed	PS (Proximity Sensor)
UPCL – High Flow Manual Multi Turn Version	750 (3/4")	¾" TE = 065	½" TE = 500-049	PC1 - 1/4" Downstream Purge Connection	Red (Red Handwheel Supplied)	NO - Normally Open	PSEx (Explosion Proof Proximity Sensor)
DPC – Manual Multi Turn Version	1000 (1")	1" TE = 065	¼" FSM M	PV1 - 1/4" Downstream Purge Valve	Yellow (Yellow Handwheel Supplied)		
DPCL - High Flow Manual Multi Turn Version	1500 (1.5")	1.5" TE = 065	¼" FSM M(C)		Green (Green Handwheel Supplied)		
	2000 (2")	2" TE = 065	¼" FSM FM		Orange(Orange Handwheel Supplied)		
	3000 (3")	3" TE = 065	1/4" C/LOK		Black (Black Handwheel Supplied)		
	4000 (4")	4" TE = 083	3/8" FSM M(S)		Blue (Blue Handwheel Supplied)		
			3/8" FSM M(S)(C)		Pink (Pink Handwheel Supplied)		
			3/8" FSM FM		Brown (Brown Handwheel Supplied)		
			3/8" C/LOK		Gold (Gold Handwheel Supplied)		
			1/2" FSM M(S)		Grey (Grey Handwheel Supplied)		
			1/2" FSM M(S)(C)		Silver (Silver Handwheel Supplied)		
			1/2" FSM FM		Purple (Purple Handwheel Supplied)		
			1/2" C/LOK				
			¾" TE = 750-065				
			3/4" FSM M(S)				
			3/4" FSM M(S)(C)				
			3/4" FSM FM				
			3/4" C/LOK				
			1" TE = 1000-065				
			1" FSM M(S)				
			1" FSM M(S)(C)				
			1" FSM FM				
			1" C/LOK				
			1.5" TE=1500-065				

FSM = Face Seal Metal - VCR® type connections
100% compatiable with VCR® brand

[1] **Only Specify the Oulet connection when different from the Inlet connection**

[2] **Manual Version only** [3] **Actuated Version only** [4] **Bottom Branch Outlet Available**

[5] **PC = FSM Male Capped**
PV = Diaphragm Valve With FSM Male Capped

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