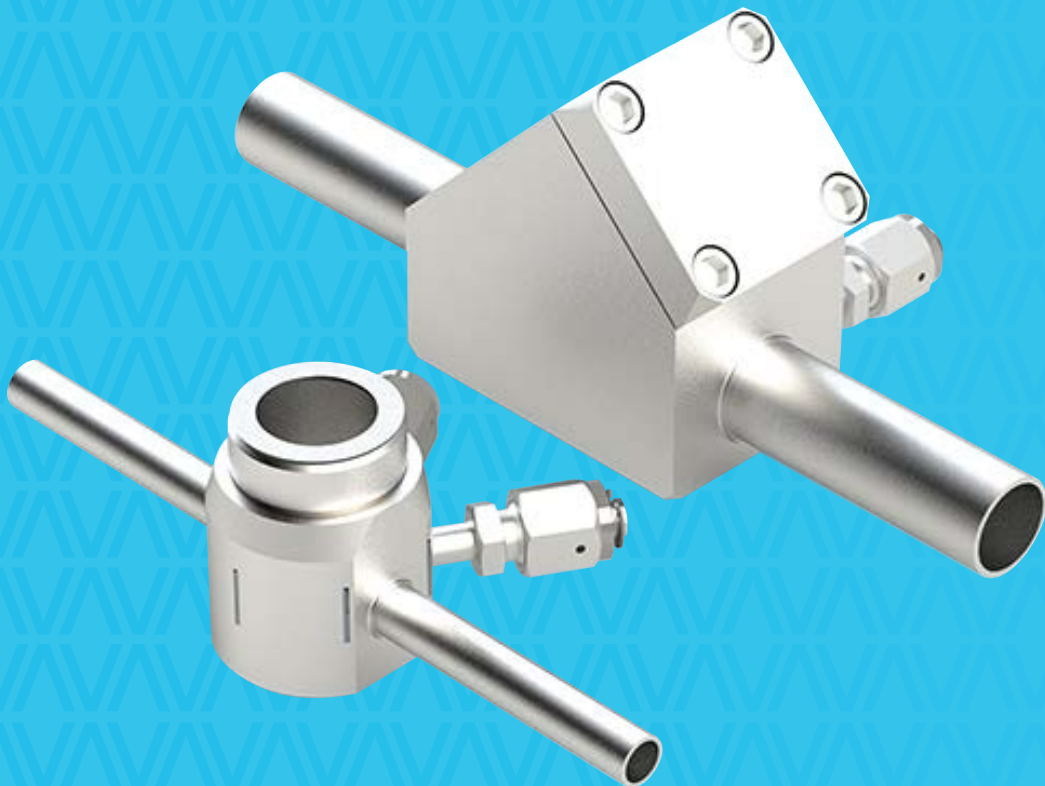


CARTEN

FLOW SOLUTIONS - **WE GO BEYOND**

INTRODUCING CARTEN'S CB, CVV SERIES ULTRA-HIGH PURITY CHECK VALVES



CB, CVV Series

Ultra-High Purity Check Valves

The UHP **inline** check valve for semiconductor applications with metal-to-metal external seals preventing backflow and contamination risk, while ensuring the high levels of containment, purity, and cleanliness required over a full FAB life cycle.

Key Features

Available in line sizes up to 4"

Metal-to-metal external seals

Low cracking pressure to open

Typical Applications

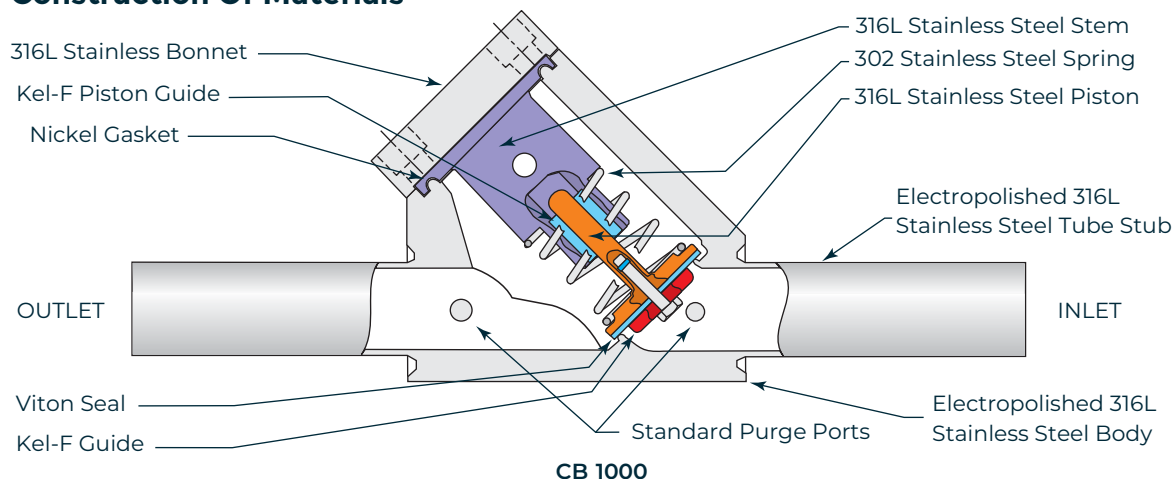
Bulk gas distribution (BGD), isolation and reverse flow prevention functionality for face interface boxes (FIBS) and interface plates (IP) required for tool hook-up, valve manifold boxes (VMB's), and critical application containment functionality.

Key Specifications

Materials of Construction	Cleanliness	Specifications	Options
316L stainless body and stem	Manufactured in ISO Class 4 Cleanroom	250 PSI Max operating pressure	Standard and high-flow spring
302 stainless spring	Zero particles @0.1µm in static conditions	<10Ra micro-inch surface roughness	Integrated purge connections for install
Barstock-only source	<10ppb O2/H2O outgassing	1.93 (CVV series) – 165.5 Cv (flow coefficient)	
VITON standard seat (minimal volume) with KEL-F guide	Cleaned using DI water & oven baked	100% leak tested using mass spectrometer to 1×10^{-9} scc/s under vacuum and 1×10^{-6} scc/s under pressure	



Construction Of Materials



CVV and CB Series Technical Specifications

Construction of Material	Wetted Areas		SS 316L, SS 302, Viton, 18-8 SS, PCTFE, Nickel		
	Non-Wetted Areas		316L		
Maximum Operating Pressure	CB/CVV Series		Vacuum to 250 PSI (17 BAR)		
Maximum Operating Temperature	VITON Seal		0 °C to +121 °C (32°F ~ 250°F)		
Description	Line (Body) Size Inch		C _v *	Cracking Pressure	Pressure to Full Open
CVV 500	.500 (.500)		1.93	1.65 psig	4.3 psig
CB 751	.750 (1.000)		10.96	1.6 psig	12 psig
CB 1000	1.000 (1.000)		15.21	1.6 psig	12 psig
CB 1501	1.500 (1.000)		16.73	1.6 psig	12 psig
CB 1502	1.500 (2.000)		42.43	0.6 psig	6 psig
CB 2000	2.000 (2.000)		51.26	0.6 psig	6 psig
CB 3004	3.000 (4.000)		158.8	0.1 psig	2 psig
CB4000	4.000 (4.000)		165.5	0.1 psig	2 psig
Helium Leak Test Performed with 100% Helium		Inboard Outboard Pressure Test		1 x 10 ⁻⁹ scc/s He 1 x 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. VIM/VAR SS optional body. End connections, Face seal, compression available up to 1".				

* Full open without spring

Specifications are subject to change without notice.

Order Information

Sample: CB2000 - 065 - PV2

CB Series Check Valve with a 2" tube end Connection and 1/4" Upstream and Downstream Purge Valve

Series	Size	Inlet Connection	Outlet Connection ¹	Purge Type ²
CB – Check Valve	751 (3/4")	3/4" TE = 065	3/4" TE = 065	Blank - No Purge
	1000 (1")	3/4" FSM M(S)	3/4" FSM M(S)	PC1 - 1/4" Downstream Purge Connection
	1500 (1.5")	3/4" FSM FM	3/4" FSM FM	PC2 - 1/4" Upstream and Downstream Purge Connection
	2000 (2")	3/4" C/LOK	3/4" C/LOK	PC3 - 1/4" Upstream Purge Connection
	3000 (3")	1" TE = 065	1" TE = 065	PV1 - 1/4" Downstream Purge Valve
	4000 (4")	1" FSM M(S)	1" FSM M(S)	PV2 - 1/4" Upstream and Downstream Purge Valve
		1" FSM FM	1" FSM FM	PV3 - 1/4" Upstream Purge Valve
		1.5" TE = 065	1.5" TE = 065	
		1" C/LOK	1" C/LOK	
		2" TE = 065	2" TE = 065	
		4" TE = 083	4" TE = 083	

Order Information

Sample: CVV500 - 1/2" FSM M(S) - PC3

CVV Series Check Valve with 1/2" FSM Male Swivel Connections and a 1/4" Upstream Purge Connection

Series	Size	Inlet Connection	Outlet Connection ¹	Purge Type ²
CVV – Check Valve	500 (1/2")	1/2" TE = 049	1/2" TE = 049	No Purge
		1/2" FSM M(S)	1/2" FSM M(S)	PC1 - 1/4" Downstream Purge Connection
		1/2" FSM FM	1/2" FSM FM	PC2 - 1/4" Up and Downstream Purge Connection
		1/2" C/LOK	1/2" C/LOK	PC3 - 1/4" Upstream Purge Connection
				PV1 - 1/4" Downstream Purge Valve
				PV2 - 1/4" Upstream and Downstream Purge Valve
				PV3 - 1/4" Upstream Purge Valve

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

¹ Only Specify the Outlet connection when different from the Inlet connection

² PC = FSM Male Capped

PV = Diaphragm Valve with FSM Capped

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