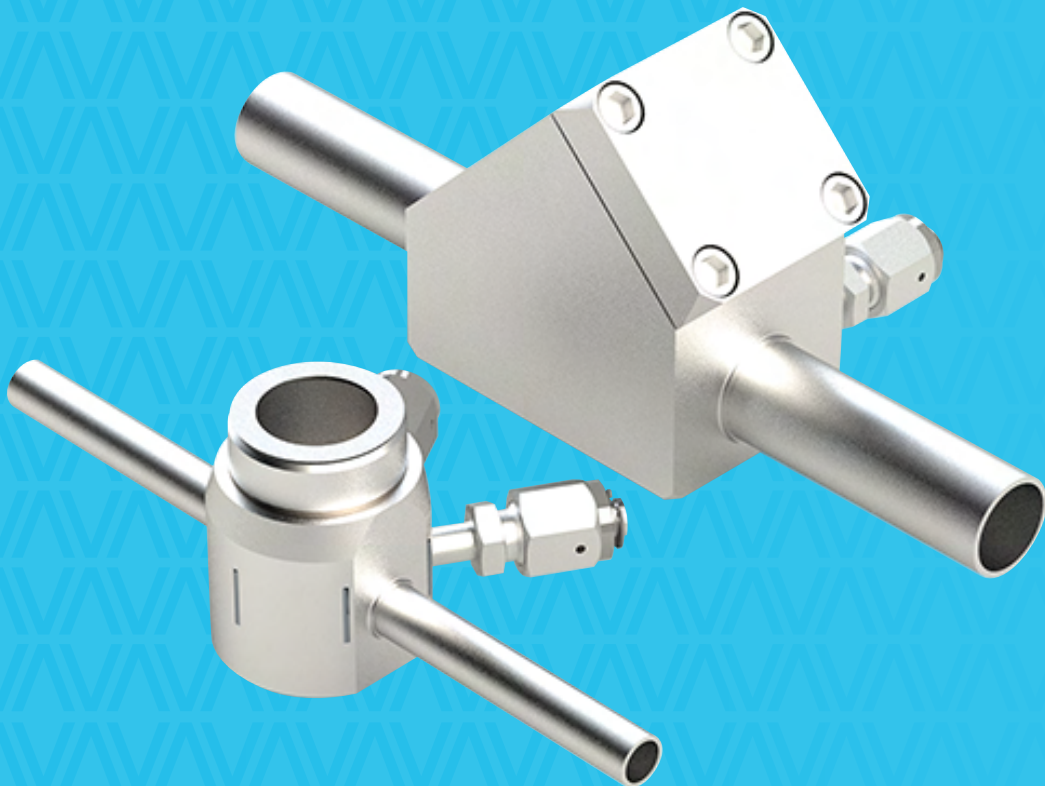


CARTEN

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 only 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 6"

Metal-to-metal external seals

Non-particle generating internal components

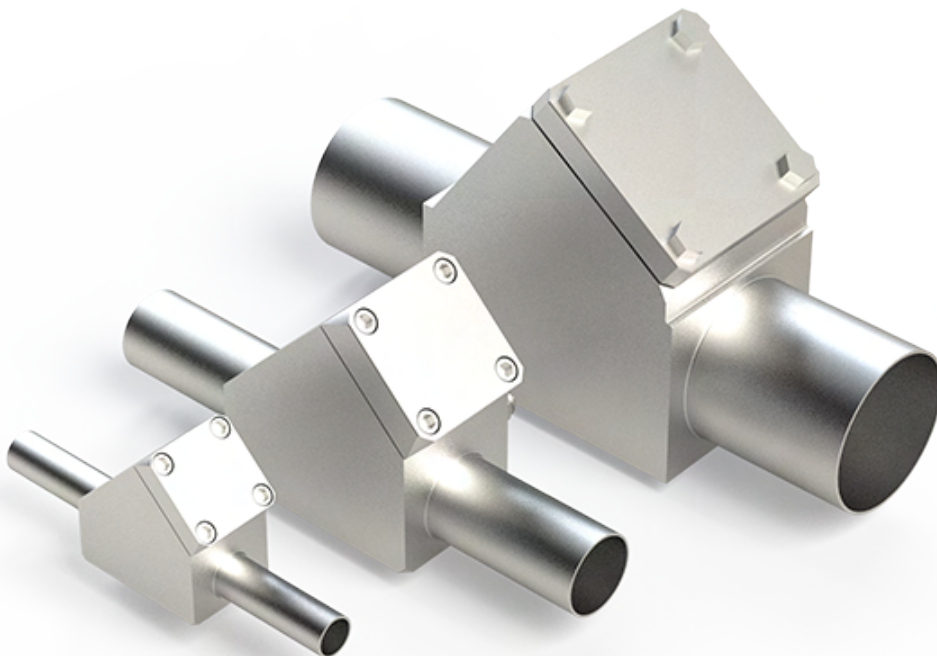
Low cracking pressure to open

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	Manufactured in Class 10 Cleanroom	Leak tested using Mass spectrometer $<1 \times 10^{-9}$ mbar.l/s	Standard and high-flow sprint
316L stainless stem and spring	Zero particles @0.1 μ m	<10Ra micro-inch surface roughness	Integrated purge connections for install
Barstock-only source	<10ppb O ₂ /H ₂ O outgassing	Reverse flow and pressure tested 100% production control	Multiple seat material options
PCTFE standard seat (minimal volume)	Cleaned using 18.2M Ω .cm DI water	250p.s.i. operating pressure	1.93 (GB series) - 165.5 Cv (flow coefficient)

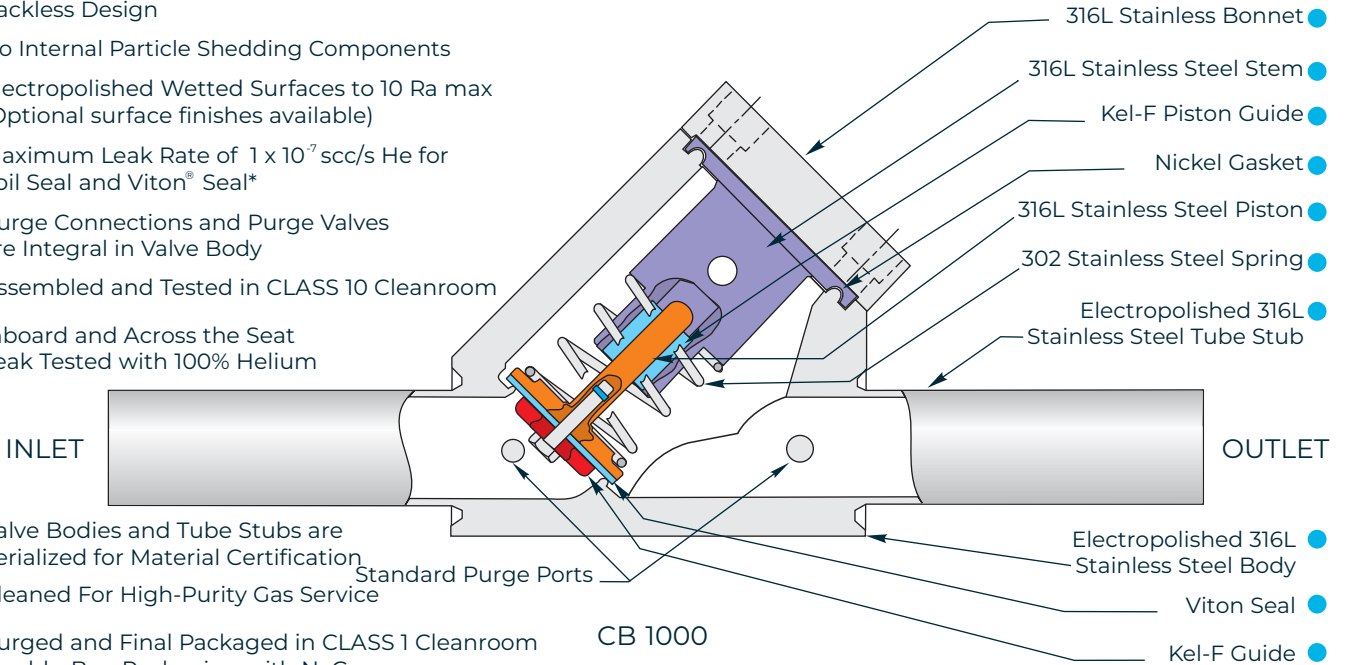


▶ PRODUCT FEATURES

- ▶ Designed for Ultra-High Purity
- ▶ High-Purity Stainless Gas Containment
- ▶ Packless Design
- ▶ No Internal Particle Shedding Components
- ▶ Electropolished Wetted Surfaces to 10 Ra max (Optional surface finishes available)
- ▶ Maximum Leak Rate of 1×10^{-7} scc/s He for Foil Seal and Viton® Seal*
- ▶ Purge Connections and Purge Valves are Integral in Valve Body
- ▶ Assembled and Tested in CLASS 10 Cleanroom
- ▶ Inboard and Across the Seat Leak Tested with 100% Helium

CONSTRUCTION MATERIALS ●

- ▶ Valve Bodies and Tube Stubs are Serialized for Material Certification
- ▶ Cleaned For High-Purity Gas Service
- ▶ Purged and Final Packaged in CLASS 1 Cleanroom
- ▶ Double-Bag Packaging with N₂ Gas Environment Supplied from a Liquid Source



*Excluding Permeation of Viton

CVV and CB Series - Technical Data

CONSTRUCTION MATERIAL	Wetted Areas	316L Stainless Steel, Nickel, Viton, CTFE		
	Non-Wetted Areas	316L, Nickel Plated Brass (CVV500)		
MAXIMUM OPERATING PRESSURE	CB Series	Vacuum to 250 psi (17 BAR)		
MAXIMUM OPERATING PRESSURE	CB Series	250°F (121°C)		
FLOW COEFFICIENT (C _v)*	MODEL	C _v	CP	PFO
CRACKING PRESSURE (CP)	CVV 500	1.93	1.65 psig	4.3 psig
	CB 751	10.96	1.6 psig	12 psig
PRESSURE TO FULL OPEN (PFO)	CB 1000	15.21	1.6 psig	12 psig
	CB 1501	16.73	1.6 psig	12 psig
*Full open without spring	CB 1502	42.43	0.6 psig	6 psig
	CB 2000	51.26	0.6 psig	6 psig
	CB 3004	158.8	0.1 psig	2 psig
	CB 4000	165.5	0.1 psig	2 psig

HELIUM LEAK TEST	Inboard / across the seat	1x10 ⁻⁷ scc/s He max.
		1x10 ⁻⁶ scc/s He max.
	Helium test performed with 100% helium	
CLEANLINESS	Assembled and tested in CLASS 10 cleanroom. Purged and Final packaged in CLASS 1 cleanroom. Double-bag packaging (2 mil nylon inner bag, 6 mil polyethylene outer bag) with N ₂ gas environment supplied from a liquid source.	
STANDARD FINISH	Electropolished to 10 Ra (0.25 Ra m) on all wetted surfaces	
OPTIONS	Surface finish - 5 Ra Particle / Moisture testing SEM and ESCA testing, Auger analysis Single purge valve connection Tube extension length or fittings Material: VAR; VIM / VAR	

Specifications are subject to change without notice.
Viton is a registered trademark of the Dupont Company

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
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
	2000 (2")	3/4" FSM FM	3/4" FSM FM	PC2 - 1/4" Upstream and Downstream Purge Connection
	4000 (4")	3/4" C/LOK	3/4" C/LOK	PC3 - 1/4" Upstream Purge Connection
		1" TE = 065	1" TE = 065	PV1 - 1/4" Downstream Purge Valve
		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" 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
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

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

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