

CB/CVV SERIES

Ultra-High Purity Bar Stock Stainless Steel
Check Valves



CB/CVV SERIES

CB/CVV Series Product Applications

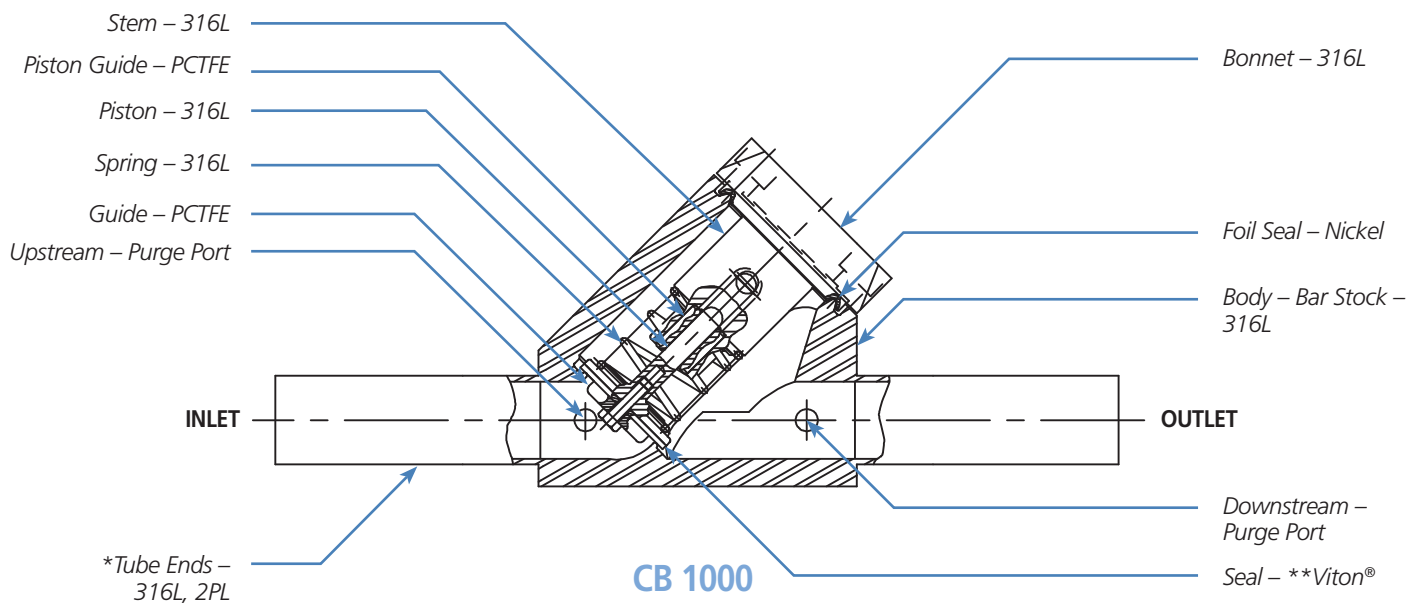
This check valve series is intended for bulk gas distribution service where containment, cleanliness and purity are of the utmost importance, and makes this range an excellent consideration for:

- High-purity gas distribution system control
- Prevention of undesired reverse flow in high-purity systems
- Superior containment and cleanliness for your most critical valve applications
- Use with inert and most toxic gases
- Most suitable for isolation applications

CB/CVV Series Product Features

- Check Valve, Packless Compact Design
- Ultra-High Purity Bar Stock Stainless Steel/PCTFE Valve Construction
- 10 Ra Max – Electropolished Surface Finish – Std (Optional Surface Finishes Available)
- Purge Connections and Purge Valves are Integrated in Valve Body
- Valve Body and Tube Stubs are Serialized for Material Certification

CB Construction Materials



*See Ordering Code for other available – Valve FSM - M/F Connection Ends – sizes 500/750/1000.

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CB/CVV SERIES

CB and CVV Series Technical Data

MATERIAL OF CONSTRUCTION	Wetted Areas	316L Stainless Steel, PCTFE, Nickel, *Viton®		
	Non-Wetted Areas	316L Stainless Steel, Nickel Plated Brass (CVV 500)		
MAXIMUM OPERATING PRESSURE	CVV Series	Vacuum-375 psig (25.8 bar)	CB Series	Vacuum-250 psig (17.2 bar)
MAXIMUM OPERATING TEMPERATURE	*Viton® Seat – Std	-15°F (-5°C) to 250°F (121°C)		

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VALVE MODELS	BODY DATA	TECHNICAL DATA			WEIGHT	
Valve Sizes	Tube/Body (Seat-Orifice) Sizes	(Cv)	CP	PFO	LBS	(KG)
CVV 255	Ø.250 / .500 (Ø.437 in. (Ø11.1mm)-Orifice)	1.93	1.65 psig	4.3 psig	2.0	(0.91)
CVV 500	Ø.500 / .500 (Ø.437 in. (Ø11.1mm)-Orifice)	1.93	1.65 psig	4.3 psig	2.0	(0.91)
CVV755	Ø.750 / .500 (Ø.437 in. (Ø11.1mm)-Orifice)	2.00	1.65 psig	5.0 psig	2.1	(0.95)
CB 751	Ø.750 / 1.000 (Ø1.06 in. (Ø27.0mm)-Orifice)	10.96	1.60 psig	12.0 psig	5.0	(2.72)
CB 1000	Ø1.000 / 1.000 (Ø1.06 in. (Ø27.0mm)-Orifice)	15.21	1.60 psig	12.0 psig	6.0	(2.72)
CB 1501	Ø1.500 / 1.000 (Ø1.06 in. (Ø27.0mm)-Orifice)	16.73	1.60 psig	12.0 psig	7.0	(3.18)
CB 1502	Ø1.500 / 2.000 (Ø2.12 in. (Ø53.8mm)-Orifice)	42.43	0.60 psig	6.0 psig	19.0	(8.62)
CB 2000	Ø2.000 / 2.000 (Ø2.12 in. (Ø53.8mm)-Orifice)	51.26	0.60 psig	6.0 psig	19.0	(8.62)
CB 3002	Ø3.000 / 2.000 (Ø2.12 in. (Ø53.8mm)-Orifice)	78.00	0.60 psig	6.0 psig	21.0	(9.53)
CB 3004	Ø3.000 / 4.000 (Ø3.50 in. (Ø88.9mm)-Orifice)	158.80	0.10 psig	2.0 psig	42.0	(19.05)
CB 4000	Ø4.000 / 4.000 (Ø3.50 in. (Ø88.9mm)-Orifice)	165.50	0.10 psig	2.0 psig	40.0	(18.14)
CB 6004	Ø6.000 / 4.000 (Ø3.50 in. (Ø88.9mm)-Orifice)	185.00	0.10 psig	1.0 psig	49.0	(22.23)

(Cv) Flow Coefficient / (CP) Cracking Pressure / (PFO) Pressure to Full Open

HELIUM LEAK TEST	Inboard Across the Seat Outboard Pressure Test	$\leq 1 \times 10^{-9}$ std.cc (atm) He / sec $\leq 1 \times 10^{-9}$ std.cc (atm) He / sec $\leq 1 \times 10^{-6}$ std.cc (atm) He / sec
CLEANLINESS AND PACKAGING	Assembled and tested in Class 100 Cleanroom. Purged and Final Packaged in Class 1 Cleanroom. Double-bag Packaging (2 mil nylon inner bag, 6 mil polyethylene outer bag) with Ultra-High Purity N ₂ gas environment.	
STANDARD FINISH	10 Ra Max – Electropolished Surface Finish – Std (Optional surface finishes available)	
NOTES AND OPTIONS	Testing: Particle, Moisture, O ₂ , SEM, ESCA, and AES Purge Connections – Valve Type/Location – Sizes .250 / .500 Valve Connection Ends – Inlet/Outlet Sizes .500/.750/1.000 Valve Body Mounting Holes Std. Options: 1) CVV 500 – 10-32 UNF-2B 2) CB 1000 – .250-20 UNC-2B 3) CB 2000 – .375-16 UNC-2B 4) CB 4000 – .375-16 UNC-2B Valve Body Flanged Ends – Rotatable JIS Sizes (15A to 100A) Available – Consult Sales	

Specifications are subject to change without notice.

CB/CVV SERIES



CB and CVV Series Technical Dimensions

SERIES/SIZE (INCH)	A	B	C	D	E
CVV 255	Ø.250 (6.35mm)	0.035 (0.89mm)	0.72 (18.1mm)	4.04 (102.6mm)	9.87 (250.7mm)
CVV 500	Ø.500 (12.7mm)	0.049 (1.24mm)	0.72 (18.1mm)	3.04 (77.2mm)	7.87 (199.9mm)
CVV 755	Ø.750 (19.1mm)	0.065 (1.65mm)	0.72 (18.1mm)	2.98 (75.7mm)	7.75 (196.9mm)
CB 751	Ø.750 (19.1mm)	0.065 (1.65mm)	0.75 (19.1mm)	4.06 (103.3mm)	11.61 (294.9mm)
CB 1000	Ø1.000 (25.4mm)	0.065 (1.65mm)	0.75 (19.1mm)	3.04 (77.2mm)	9.61 (244.1mm)
CB 1501	Ø1.500 (38.1mm)	0.065 (1.65mm)	0.75 (19.1mm)	5.01 (127.3mm)	13.51 (343.2mm)
CB 1502	Ø1.500 (38.1mm)	0.065 (1.65mm)	1.25 (31.7mm)	5.01 (127.3mm)	15.48 (393.2mm)
CB 2000	Ø2.000 (50.8mm)	0.065 (1.65mm)	1.25 (31.7mm)	4.06 (103.1mm)	13.58 (344.9mm)
CB 3002	Ø3.000 (76.2mm)	0.065 (1.65mm)	1.25 (31.7mm)	7.91 (200.9mm)	21.28 (540.5mm)
CB 3004	Ø3.000 (76.2mm)	0.065 (1.65mm)	2.13 (54.1mm)	8.04 (204.2mm)	23.47 (596.1mm)
CB 4000	Ø4.000 (101.6mm)	0.083 (2.1mm)	2.13 (54.1mm)	4.20 (106.7mm)	15.79 (401.1mm)
CB 6004	Ø6.000 (152.4mm)	0.109 (2.7mm)	2.13 (54.1mm)	11.78 (299.2mm)	30.95 (786.1mm)

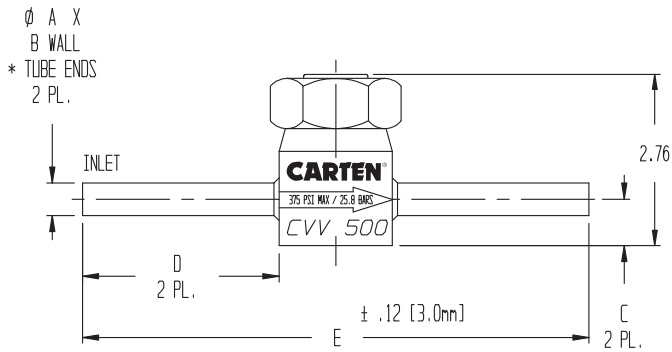
NOTE 1: All tolerances are ± 0.06 in. (± 1.52 mm) unless otherwise stated.

NOTE 2: Dimensional drawings shown are for reference only. Please contact CARTEN® for customer drawings.

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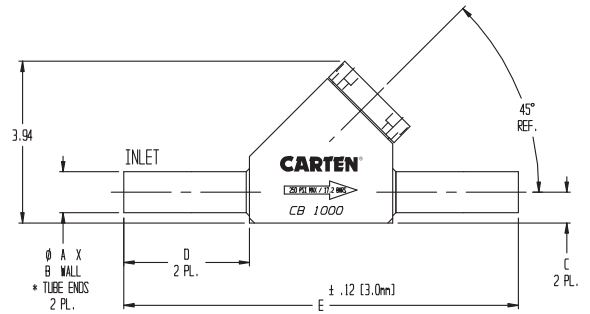
CB and CVV Series Typical Valve Dimensions (1/4" to 6")

CVV 500 BODY
255 / 500 / 755



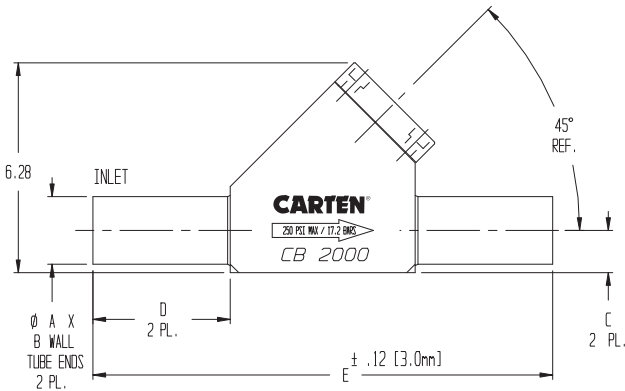
* See Ordering Code for other available FSM - MF connection ends.

CB 1000 BODY
751 / 1000 / 1501

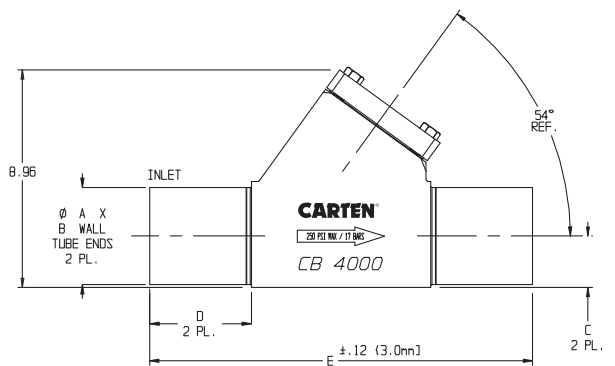


* See Ordering Code for other available FSM - MF connection ends.

CB 2000 BODY
1502 / 2000 / 3002



CB 4000 BODY
3004 / 4000 / 6004



CB/CVV SERIES

CB and CVV Series Ordering Code

CB – **1000** – **10** – **PC2** – **FSM-MR** – **R**

SERIES	TYPE
CB	Manual
CVV	Manual

CODE	SURFACE FINISH
10	10 Ra Max - Std EP
20	20 Ra Max - EP

CODE	TYPE
FSM-MR	Fixed Male-RH

FSM – Face Seal Metal Purge
(Right Hand)

VALVE SIZES	TUBE/(BODY) INCH – SIZES	
CVV 255	Ø.250	(.500)
CVV 500	Ø.500	
CVV 755	Ø.750	
CB 751	Ø.750	(1.000)
CB 1000	Ø1.000	
CB 1501	Ø1.500	
CB 1502	Ø1.500	(2.000)
CB 2000	Ø2.000	
CB 3002	Ø3.000	
CB 3004	Ø3.000	(4.000)
CB 4000	Ø4.000	
CB 6004	Ø6.000	

CODE	SIZE/LOCATION	TYPE
LV	Not Required	None
PC1	1/4" Downstream	Purge
PC2	1/4" Up & Downstream	Purge
PC3	1/4" Upstream	Purge
PV1	1/4" Downstream	Valve
PV2	1/4" Up & Downstream	Valve
PV3	1/4" Upstream	Valve
PC15	1/2" Downstream	Purge
PC25	1/2" Up & Downstream	Purge
PC35	1/2" Upstream	Purge
PV15	1/2" Downstream	Valve
PV25	1/2" Up & Downstream	Valve
PV35	1/2" Upstream	Valve

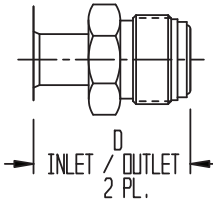
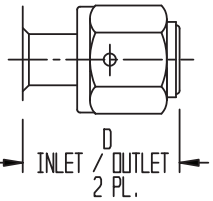
CODE	OPTIONS
R	Rotatable Flange

1/2" size connection type not available on all sizes.
Please contact CARTEN® for availability.

JIS sizes (15A to 100A) available – consult sales.

OPTIONAL VALVE FSM - M/F CONNECTION ENDS

Available on CB/CVV Series .250" - 1" Body Sizes

CONNECTION END SIZES .250 / .500 / .750 / 1.000	Connection Size	Dimension "D"	
		FSM-M-2X	FSM-F-3X
	.250	1.32 (33.5mm)	1.32 (33.5mm)
		.500	1.54 (39.1mm)
	.750		2.04 (51.8mm)
	1.000	2.38 (60.5mm)	2.38 (60.5mm)

Safe Product Selection

When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

Carten Fujikin, Inc.
604 West Johnson Avenue
Cheshire, Connecticut CT 06410 USA
Tel: +1 203-699-2100
Fax: +1 203-699-2179
Email: sales@cartenus.com
Website: www.cartenus.com

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CARTEN®
High Performance Valves & Process Flow Solutions

Carten Controls, Ltd.
Unit 609, Waterford Industrial Park
Waterford, X91 AX05 Ireland
Tel: +353 (0)51 355436
Fax: +353 (0)51 378054
Email: sales@cartencontrols.com
Website: www.cartencontrols.com

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with Headquarters in Osaka, Japan.