



ULTRA HIGH PURITY **WELDED CHECK VALVES**

VCC Series

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UNILOK 

Features

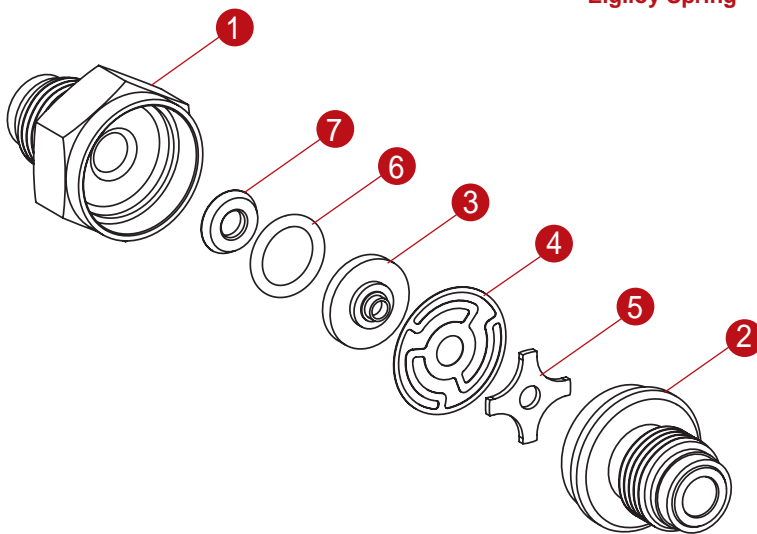
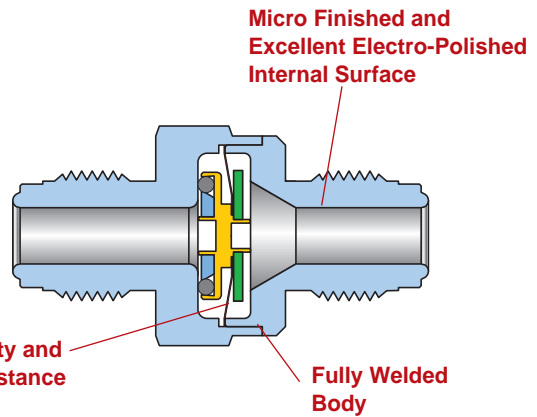
Fully welded and compact designed body with minimal dead space

Body material comply with SEMI F-20, "Specification 316LSS Materials for UHP (Ultra High Purity) Grade Semiconductor Manufacturing Applications"

Elgiloy® spring material with strong durability as well as corrosion resistance for long cycle life

Noise free operation

Broaden choice of end connection



Materials of Construction

No.	Description	Materials
1	Inlet Body	316LSS
2	Outlet Body	316LSS
3	Poppet	316LSS
4	Spring	Elgiloy
5	Poppet Stop	316LSS
6	O-ring	Viton
7	O-ring Stopper	316LSS

Pressure - Temperature Rating

Body Material		316LSS			
Temperature		Working Pressure			
°C	°F	psig	bar		
-54 to	38	100	3000	206	
	93		2530	174	
	148		2270	156	
	204		2065	142	
	-65 to	400			

Internal Surface Finish Levels

Designator	Surface Finish(μm)	
	Average	Maximum
BA	< 0.4	< 1.6
EP	< 0.125	< 0.4

Helium Leak Test

Every VCC series valves are inboard helium leak tested to a rate of 1×10^{-9} std.cm³/s at all seals.

Particle Contribution Test

According to ASTM F1394-92.

Moisture Contribution Test

According to SEMA-90120397B-STD.

Cleaning

All components are precisely cleaned with 18MΩ deionized water after the passivation procedure in accordance with our own UHP cleaning process
Reference specification : SEMI E49.6.

How To Order

Uni-Lok VCC series valves are ordered by part number as shown as below.

Assembling

According to SEMI E49.6.

Packaging

Each component is double bagged to ensure component cleanliness and to protect them from environmental contamination.

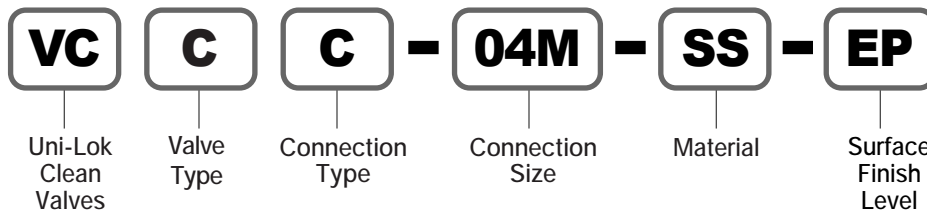
Referenced specification : SEMI E49.1.

Important Notification

Proper installation, materials compatibility, operation and maintenance of these valves are the responsibility of the user. The total system design must be taken into consideration to ensure optimal performance and safety.

Overall process of testing, cleaning, assembling and packaging for every VCC series valves are performed in a certified clean room.

Example : The following part number, **VCCC-04M-SS-EP** is designated for Clean Check Valve, both 1/4" Male UCR, 316LSS, EP.



Valve Type	
C	Welded Check Valve

Connection Type	
U	Uni-Lok Tube Fitting
C-*M	Male UCR
C-*F	Female UCR
WB-*T	Butt Weld -Tube

UCR - Metal Face Seal

Connection Size				
Fractional(Inch) Tube O.D. Designation				
Tube O.D.	inch	1/4	3/8	1/2
	mm	6.35	9.52	12.70
Designator		04	06	08

UCR Size Designator		
UCR Size	1/4	1/2
Designator	04	08

Material	
DM	316LSS - Double Melting
SM	316LSS - Single Melting
SS	316LSS

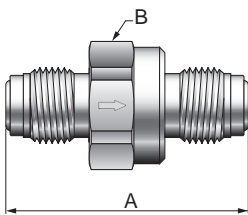
Surface Finish Level	
BA	BA
EP	EP - Electro Polished

VCC series

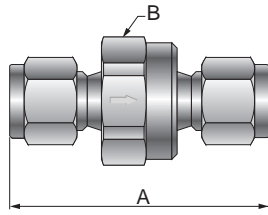
(Fully Welded Check Valve)

Specification

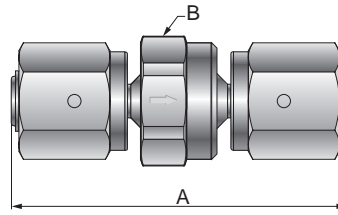
Size	1/4"	3/8", 1/2"
Cv Value	0.55	0.70
Max. Working Pressure	3000 psig (206 bar)	
Max. Working Pressure	3000 psig (206 bar)	
Normal Cracking Pressure	< 2 psig (0.14 bar)	
Reseal Pressure	up to 5~10 psig (0.34~0.69 bar)	
Max. Working Temperature	-10~80° C (-23~176° F)	
External Leakage Allowance - He (Holding Time - Min 1 min)	≤ 1x10 ⁻⁹ atm.cc/s	



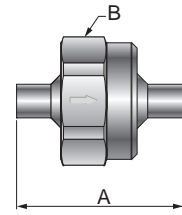
Male UCR



Female UCR



Uni-Lok Tube Fitting



Tube Butt Weld

Ordering Information & Dimensions

Part Number	End Connection		Dimensions (mm)	
	Inlet	Outlet	A	B
VCC	U-04T-	1/4" Uni-Lok	49.8	22.2
	C-04M-	1/4" Male UCR	45.8	22.2
	C-08M-	1/2" Male UCR	52.3	26.9
	C-04F-	1/4" Female UCR	61.7	22.2
	C-08F-	1/2" Female UCR	61.7	26.9
	WB-04T-	1/4" Tube Butt Weld	31.5	22.2
	WB-06T-	3/8" Tube Butt Weld	31.5	22.2
	WB-08T-	1/2" Tube Butt Weld	31.5	26.9

Dimensions are for reference only and are subject to change without prior notice.



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