

**UHP**

**Welded Check Valve  
VCCB**



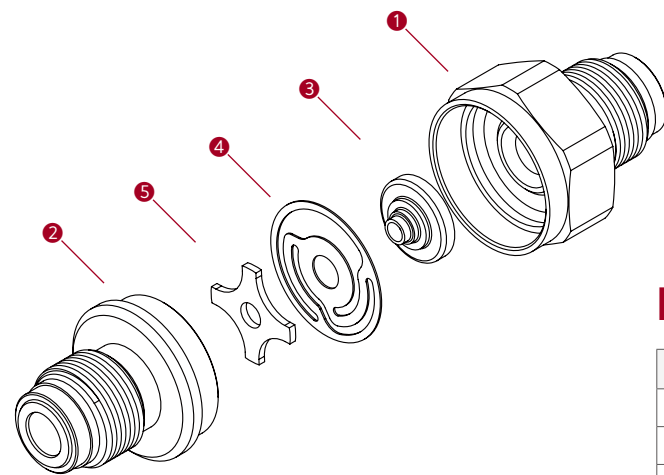
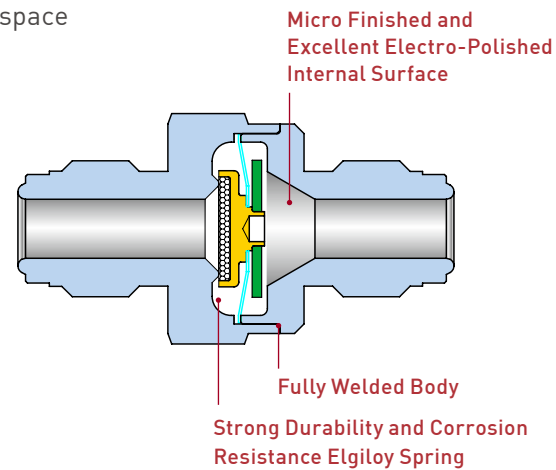
# Welded Check Valve VCCB

## CONTENTS

<b>Features</b> .....	<b>358</b>	<b>Cleaning &amp; Packaging</b> .....	<b>359</b>
<b>Materials of Construction</b> .....	<b>358</b>	<b>Important Notification</b> .....	<b>359</b>
<b>Pressure-Temperature Rating</b> .....	<b>358</b>	<b>How To Order</b> .....	<b>359</b>
<b>Internal Surface Finish Levels</b> .....	<b>358</b>	<b>Specification</b> .....	<b>360</b>
<b>Test</b> .....	<b>359</b>	<b>Ordering Information &amp; Dimensions</b> .....	<b>360</b>

## 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	Rubber Holder with FKM	316LSS with FKM
4	Spring	Elgiloy
5	Poppet Stop	316LSS

## Internal Surface Finish Levels

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

## Pressure - Temperature Rating

Body Material		316LSS			
Temperature		Working Pressure			
°C	°F	psig	bar		
-54 to	38	-65 to	100	3000	206
	93		200	2530	174
	148		300	2270	156
	204		400	2065	142

The maximum working pressure is 1000psig (68bar) at FFKM.

## Helium Leak Test

Every VCC series valves are inboard helium leak tested to a rate of 1x10<sup>-9</sup> std.cm<sup>3</sup>/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

UNILOK VCCB series valves are ordered by part number as shown below.

## Assembling

According to SEMI E49.6.

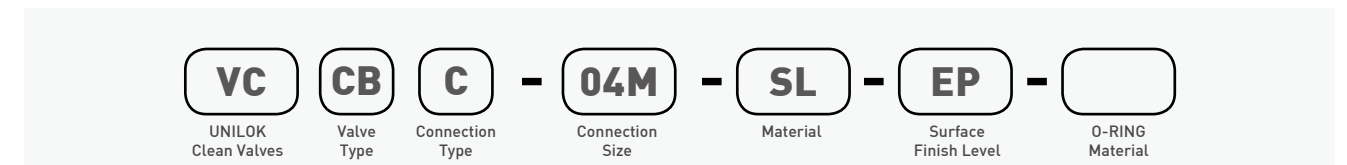
## Packaging

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 VCCB series valves are performed in a certified clean room.

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



Valve Type	
C	Welded Check Valve
CB	Bonded Check Valve

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

UCR - Metal Face Seal

Seal Material	
None	FKM
K	FFKM
E	Ethylene propylene

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		04T	06T	08T

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

Materials	
DM	316LSS-SEMI F20
SL	316LSS

Surface Finish Level	
BA	BA - Bright Annealing
EP	EP - Electro Polished

# VCCB series

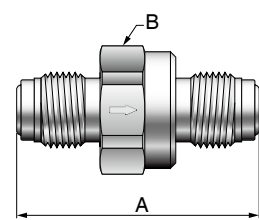
## (Fully Welded Check Valve)

### Specification

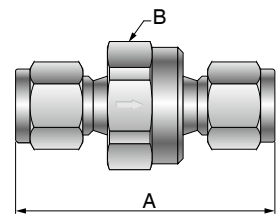
Size	1/4" UCR	1/4" Butt Weld	3/8", 1/2"
Cv Value	0.9	0.55	0.9
Max. Working Pressure	3000 psig (206 bar)		
Max. Working Temperature	-10~80°C (14~176°F)		
Nominal Cracking Pressure	≤ 2 psig (0.14 bar)		
Reseal Pressure	≤ 2 psig (0.14 bar)		
External Leakage Allowance - He (Holding Time - Min 1 min)	≤ 1x10 <sup>-9</sup> atm.cc/s		



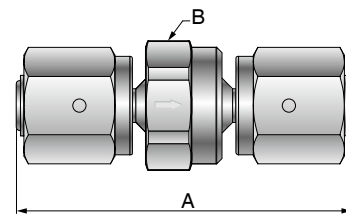
VCCB Series Check Valve not operated for a certain period of time, initial crack pressure may be higher than the nominal cracking pressure.



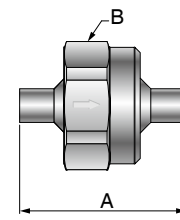
Male UCR



UNILOK Tube Fitting



Female UCR



Tube Butt Weld

### Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)	
	Inlet	Outlet	A	B
VCCB	U-04T-	1/4" UNILOK	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.