

**Diaphragm Valve
VCD**



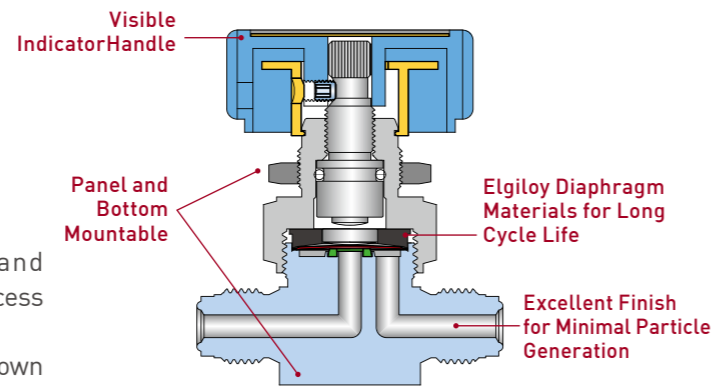
Diaphragm Valve VCD

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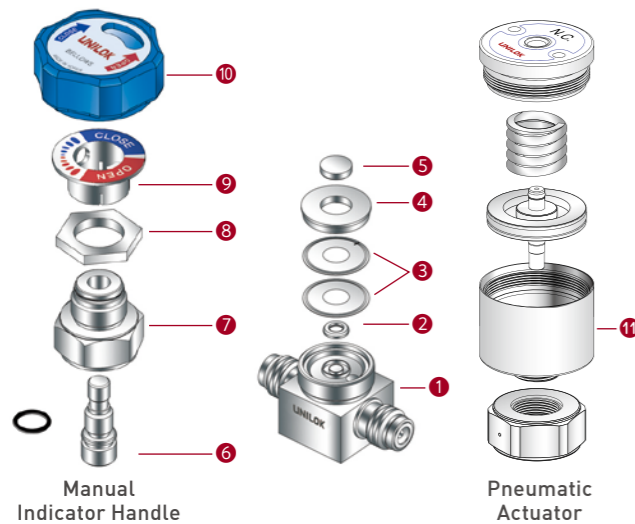
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Features

Compact designed body with minimal dead space
 Body materials comply with SEMI F-20, "Specification 316LSS Materials for UHP (Ultra High Purity) Grade Semiconductor Manufacturing Applications"
 Maximum flow capacity
 Minimal particle generation
 Minimal contributions of moisture, oxygen and hydrocarbon with UNILOK's own special cleaning process in a certified clean room
 Excellent finish level of wetted areas with UNILOK's own electro polish process
 Elgiloy® diaphragm material with strong durability as well as corrosion resistance for long cycle life
 PCTFE seat material with remarkable chemical and thermal resistance



Standard Type Low Pressure Diaphragm Valves



Materials of Construction

No.	Description	Materials	
		Manual	Pneumatic
1	Body	316LSS	316LSS
2	Seat	PCTFE	PCTFE
3	Diaphragm	Elgiloy	Elgiloy
4	Bushing	316SS	316SS
5	Button	316SS	316SS
6	Stem	316SS	-
7	Bonnet	316SS	-
8	Panel Nut	316SS	-
9	Indicator	Polyester	-
10	Handle	Aluminum	-
11	Actuator	-	Aluminum

Internal Surface Finish Levels

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

Helium Leak Test

Every VCD series valves are inboard helium leak tested to a rate of 1x10⁻⁹ cm³/sec at seat and all seals.

Particle Contribution Test

According to ASTM F1394-92.

Moisture Contribution Test

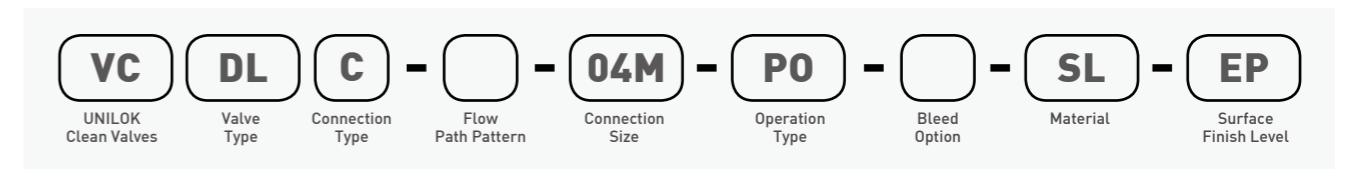
According to SEMA-90120397B-STD.

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 VCD series valves are ordered by part number as shown as below.



Valve Type	
DL	Standard Low Pressure
DH	Standard High Pressure
DS	Shut off
DDH	Directional High Pressure
DF	Forged Body
DHF	High Flow Low Pressure
DMHF	High Flow Medium Pressure
DHMF	High Flow High Pressure
DBL	Block Low Pressure
DBH	Block High Pressure

Connection Size					
Fractional(Inch) Tube O.D. Designation					
Tube O.D.	inch	1/4	3/8	1/2	3/4
	mm	6.35	9.52	12.70	19.05
Designator		04T	06T	08T	12T

Pipe Size Designation (NPT or ISO7/1-PT)			
Pipe Size	1/4	1/2	3/4
Designator	04	08	12

Operation Type	
None	Manual Indicator Handle
RI	Manual Round Indicator Handle
MD	Manual Directional Handle
MI	Manual Indicator + Directional Handle
PO	Pneumatic -Normal Open
PC	Pneumatic -Normal Close
POC	Block Type Pneumatic 1-N.O 2-N.C
PCO	Block Type Pneumatic 1-N.C 2-N.O

Bleed Option	
None	No Bleed
3	Constant Bleed Ø0.3
6	Constant Bleed Ø0.6

Materials	
DM	316LSS-SEMI F20
SL	316LSS

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

Flow Path Pattern Designator
 See the details in page 309.

UCR- Metal Face Seal

VCDL series

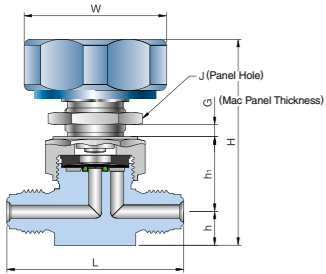
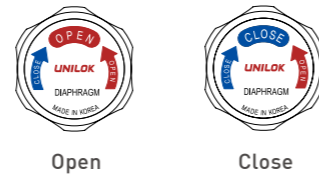
(Standard Type Low Pressure Diaphragm Valve - Manual Operation)

Specification

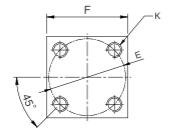
Size	1/4"	3/8", 1/2"	3/4"
Orifice Size	4.3	6.5	6.5
Cv Value	0.3	0.7	0.7
Max. Working Pressure	10 bar (145 psig)		
Max. Working Temperature	-10~80°C (14~176°F)		
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤ 1x10 ⁻⁹ atm.cc/s		
External Leakage Allowance - He (Holding Time - Min 1 min)	≤ 1x10 ⁻⁹ atm.cc/s		



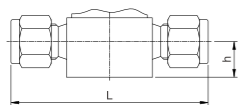
Handle Position



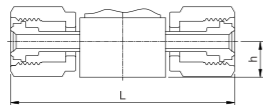
Male UCR



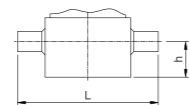
Bottom Mounting



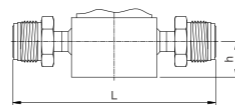
UNILOK Tube Fitting



Female UCR



Tube Butt Weld



Swivel Male UCR

Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)									
	Inlet	Outlet	L	h	h ₁	H	F	E	K	W(Ø)	G	J(Ø)
U-04T-	1/4" UNILOK		61.5	11.1	24.7	68.6	26.0	25.4	M5	47.0	5.0	21.0
U-06T-	3/8" UNILOK		74.8	16.0	31.8	80.5	37.0	28.0				
U-08T-	1/2" UNILOK		80.2	16.0	31.8	80.5	37.0	28.0				
U-12T-	3/4" UNILOK		107.2	22.0	35.3	91.0	37.0	28.0				
C-04M-	1/4" Male UCR		58.4	11.1	24.7	68.6	26.0	25.4				
C-08M-	1/2" Male UCR		73.6	16.0	31.8	80.5	37.0	28.0				
C-12M-	3/4" Male UCR		88.0	22.0	36.3	91.0	37.0	28.0				
C-04MR-	1/4" Swivel Male UCR		70.6	11.1	24.7	68.6	26.0	25.4				
C-04F-	1/4" Female UCR		70.6	11.1	24.7	68.6	26.0	25.4				
C-08F-	1/2" Female UCR		83.4	16.0	31.8	80.5	37.0	28.0				
WB-04T-	1/4" Tube Butt Weld		44.2	11.1	24.7	68.6	26.0	25.4				
WB-06T-	3/8" Tube Butt Weld		73.6	16.0	31.8	80.5	37.0	28.0				
WB-08T-	1/2" Tube Butt Weld		73.6	16.0	31.8	80.5	37.0	28.0				
WB-12T-	3/4" Tube Butt Weld		88.0	22.0	36.3	91.0	37.0	28.0				

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

VCDL series

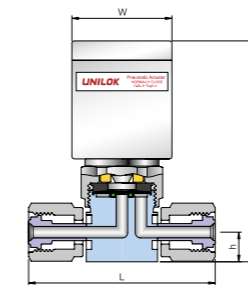
(Standard Type Low Pressure Diaphragm Valve - Pneumatic Actuating Operation)

Specification

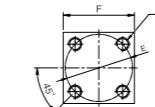
Size	1/4"	3/4"
Orifice Size	4.3	6.5
Cv Value	0.3	0.7
Max. Working Pressure	10 bar (145 psig)	
Max. Working Temperature	-10~80°C (14~176°F)	
Actuator Pressure Rating	4~7 bar (58~101 psig)	
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤ 1x10 ⁻⁹ atm.cc/s	
External Leakage Allowance - He (Holding Time - Min 1 min)	≤ 1x10 ⁻⁹ atm.cc/s	



Actuator Configuration



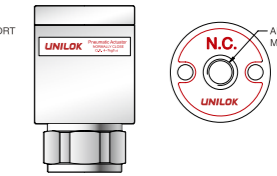
Female UCR



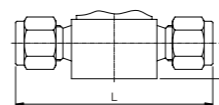
Bottom Mounting



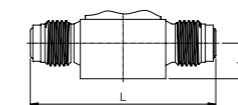
Normal Open



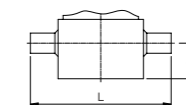
Normal Close



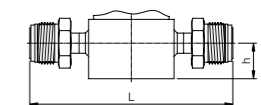
UNILOK Tube Fitting



Male UCR



Tube Butt Weld



Swivel Male UCR

Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)									
	Inlet	Outlet	L	h	H	W(Ø)	F	E	K			
U-04T-	1/4" UNILOK		61.5	11.1	83.5	37.8	26.0	25.4	M5			
U-06T-	3/8" UNILOK		74.8	16.0	94	53.0	37.0	28.0				
U-08T-	1/2" UNILOK		80.2	16.0	94	53.0	37.0	28.0				
C-04M-	1/4" Male UCR		58.4	11.1	83.5	37.8	26.0	25.4				
C-08M-	1/2" Male UCR		73.6	16.0	94	53.0	37.0	28.0				
C-04F-	1/4" Female UCR		70.5	11.1	83.5	37.8	26.0	25.4				
C-08F-	1/2" Female UCR		83.0	16.0	94	53.0	37.0	28.0				
WB-04T-	1/4" Tube Butt Weld		44.2	11.1	83.5	37.8	26.0	25.4				
WB-06T-	3/8" Tube Butt Weld		73.6	16.0	94	53.0	37.0	28.0				
WB-08T-	1/2" Tube Butt Weld		73.6	16.0	94	53.0	37.0	28.0				

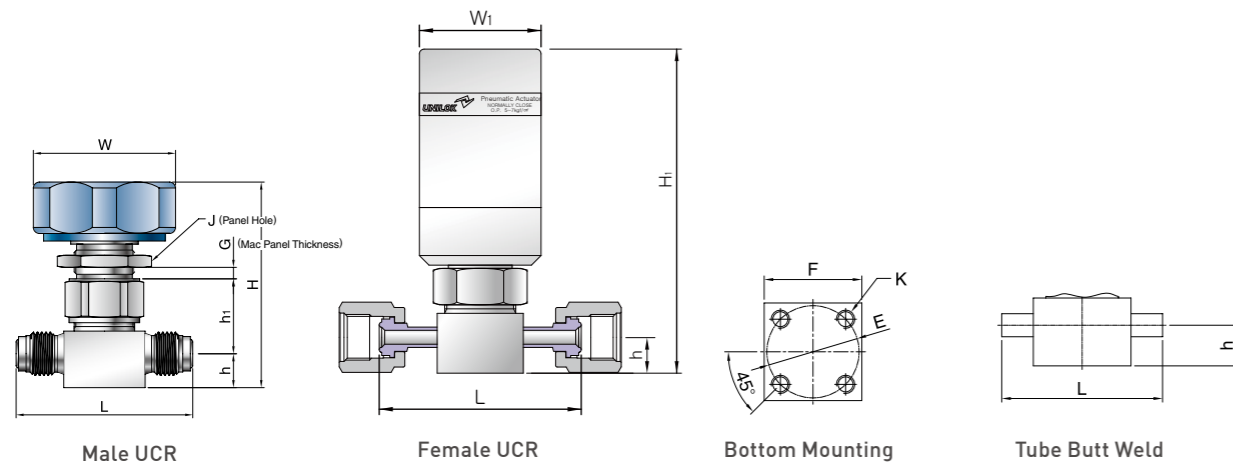
Dimensions are for reference only and are subject to change without prior notice.

VCDH series

(Standard Type High Pressure Diaphragm Valve - Manual Operation & Pneumatic Actuating Operation)

Specification

Size	1/4"
Orifice Size	2.5
Cv Value	0.1
Max. Working Pressure	206 bar (3000psig)
Max. Working Temperature	-10~40°C (14~104°F)
Actuator Pressure Rating	5~7 bar (73~101 psig)
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	$\leq 1 \times 10^{-9}$ atm.cc/s
External Leakage Allowance - He (Holding Time - Min 1 min)	$\leq 1 \times 10^{-9}$ atm.cc/s



Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)											
	Inlet	Outlet	L	h	h ₁	H	H ₁	F	E	K	W(∅)	W ₁ (∅)	G	J(∅)
VCDH	C-04T-	1/4" UNILOK	61.5	11.1	24.7	68.6	102.0	26.0	25.4	M5	47.0	38.0	5.0	21.0
	C-04M-	1/4" Male UCR	58.4											
	C-04F-	1/4" Female UCR	70.5											
	WB-04T-	1/4" Tube Butt Weld	44.3											

Handle Position and Actuator Configuration

Both are the same as VCDL series.

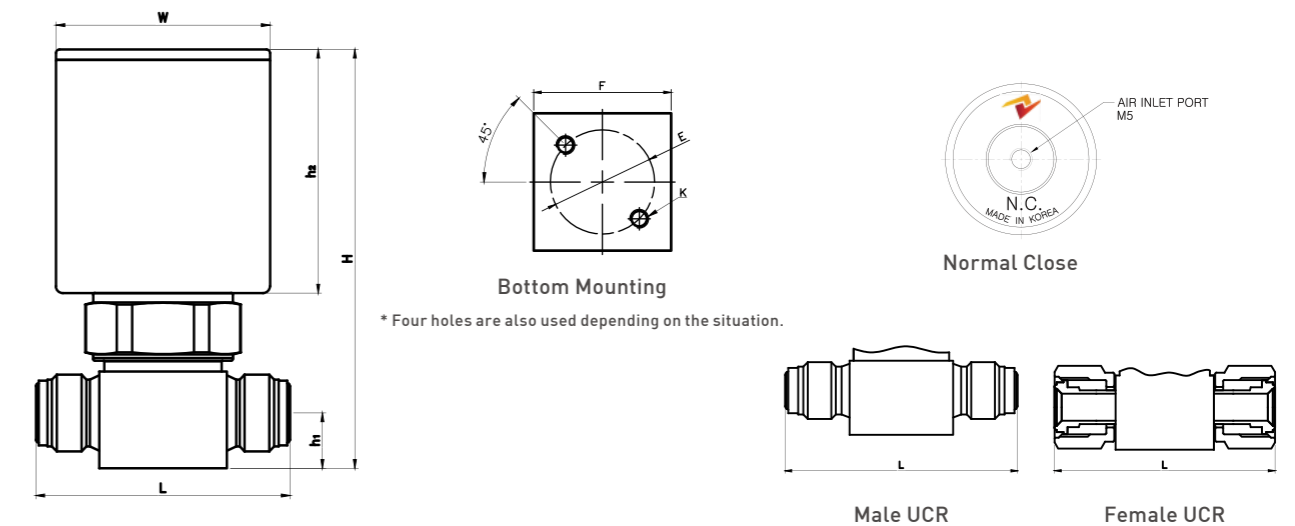
Dimensions are for reference only and are subject to change without prior notice.

VCDH series

(High Corrosion Type High Pressure Diaphragm Valve - Pneumatic Actuating Operation)

Specification

Size	1/4"	1/2"
Orifice Size	4.3	6.5
Cv Value	0.1	0.3
Max. Working Pressure	206bar	
Max. Working Temperature	-10~80°C (14~176°F)	
Actuator Pressure Rating	5~7bar(73~101psig)	
Internal leakage Allowance-He	$\leq 1 \times 10^{-9}$ atm.cc/s	
External leakage Allowance-He	$\leq 1 \times 10^{-9}$ atm.cc/s	



Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)											
	Inlet	Outlet	L	h	h ₁	H	H ₁	F	E	K	W(∅)	W ₁ (∅)	G	J(∅)
VCDH	C-04T-	1/4" UNILOK	62.0	11.1	24.7	68.6	102.0	26.0	20.4	M5	47.0	38.0	5.0	21.0
	C-04M-	1/4" Male UCR	58.4											
	C-04F-	1/4" Female UCR	70.6											
	WB-04T-	1/4" Tube Butt Weld	44.3											

VCDS series

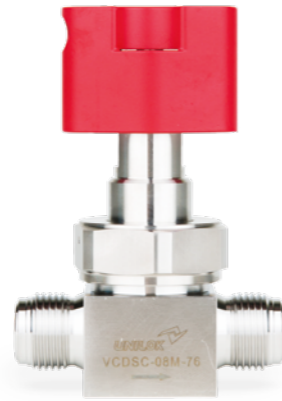
(Shut Off Type Low Pressure Diaphragm Valve - Manual Operation)

Specification

Size	1/4"	3/8", 1/2"
Orifice Size	4.3	6.5
Cv Value	0.3	0.7
Max. Working Pressure	10 bar (145 psig)	
Max. Working Temperature	-10~40°C (14~104°F)	
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤1x10 ⁻⁹ atm.cc/s	
External Leakage Allowance - He (Holding Time - Min 1 min)	≤1x10 ⁻⁹ atm.cc/s	

Handle Position

Quick and quarter turn handle actuation



Open



Close

Colored Handle

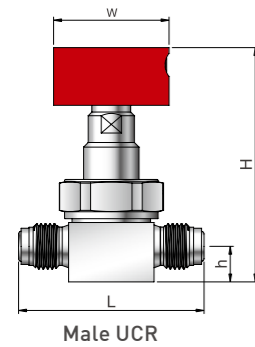
Colored handle are available for VCDS series valves. To order, add handle color designator next to connection size designator.



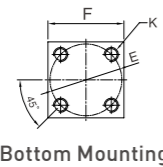
-MIR Red

-MIG Green

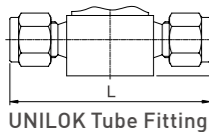
-MIW White



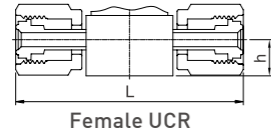
Male UCR



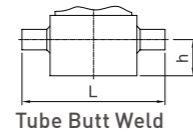
Bottom Mounting



UNILOK Tube Fitting



Female UCR



Tube Butt Weld

Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)						
	Inlet	Outlet	L	h	H	F	E	W(Ø)	K
VCDS	U-04T-	1/4" UNILOK	62.0	11.1	75.2	26.0	25.4	36.9	M5
	U-06T-	3/8" UNILOK	74.8	16.0	103.0	37.0	28.0	50.0	
	U-08T-	1/2" UNILOK	80.2	16.0	103.0	37.0	28.0	50.0	
	C-04M-	1/4" Male UCR	57.0	11.1	75.2	26.0	25.4	36.9	
	C-08M-	1/2" Male UCR	73.6	16.0	103.0	37.0	28.0	50.0	
	C-04F-	1/4" Female UCR	70.6	11.1	75.2	26.0	25.4	36.9	
	C-08F-	1/2" Female UCR	83.0	16.0	103.0	37.0	28.0	50.0	
	WB-04T-	1/4" Tube Butt Weld	44.2	11.1	75.2	26.0	25.4	36.9	
	WB-06T-	3/8" Tube Butt Weld	73.6	16.0	103.0	37.0	28.0	50.0	
WB-08T-	1/2" Tube Butt Weld	73.6	16.0	103.0	37.0	28.0	50.0		

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

VCDDH series

(Directional Type High Pressure Diaphragm Valve - Manual Operation)

Specification

Size	1/4"
Cv Value	0.1
Max. Working Pressure	207bar (3000psig)
Max. Working Temperature	-10~40°C (14~104°F)
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤1x10 ⁻⁹ atm.cc/s
External Leakage Allowance - He (Holding Time - Min 1 min)	≤1x10 ⁻⁹ atm.cc/s

Handle Position

Quick and quarter turn handle actuation



Open



Close

Colored Handle

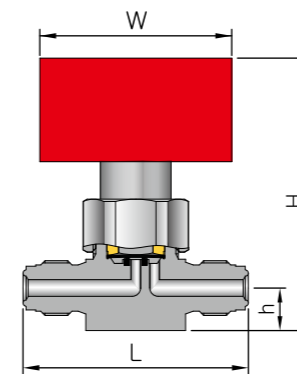
Colored handle are available for VCDDHC series valves. To order, add handle color designator next to connection size designator.



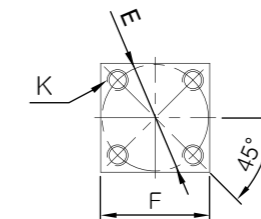
-MIR Red

-MIG Green

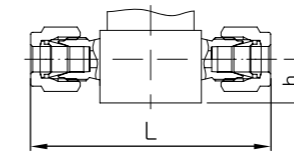
-MIW White



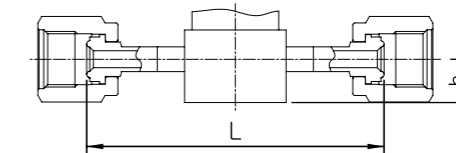
Male UCR



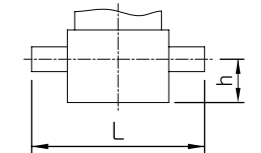
Bottom Mounting



UNILOK Tube Fitting



Female UCR



Tube Butt Weld

Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)						
	Inlet	Outlet	L	h	H	W	F	E(Ø)	K
VCDDH	U-04T	1/4" UNILOK	62.0	11.1	71.0	50.0	26.0	25.4	M5
	C-04M-	1/4" Male UCR	58.4	11.1	71.0	50.0	26.0	25.4	M5
	C-04F-	1/4" Female UCR	70.6	11.1	71.0	50.0	26.0	25.4	M5
	WB-04T-	1/4" Tube Butt Weld	44.2	11.1	71.0	50.0	26.0	25.4	M5

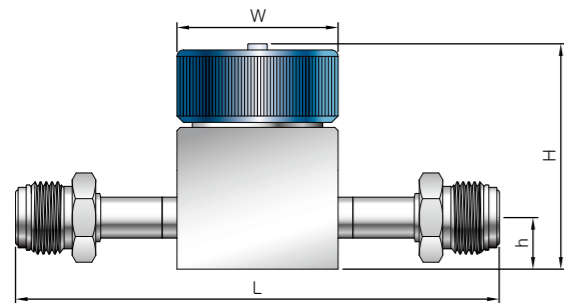
Dimensions are for reference only and are subject to change without prior notice.

VCDHF series

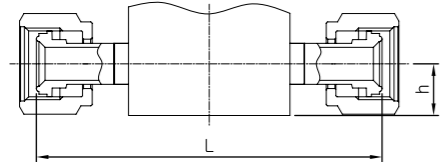
(High Flow Type Low Pressure Diaphragm Valve – Manual Operation)

Specification

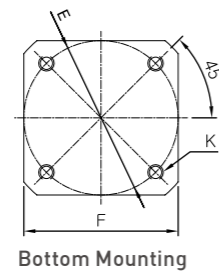
Size	1/2"	3/4"	1"
Cv Value	2.8	3.5	
Max. Working Pressure	18.6bar [270psig]		
Max. Working Temperature	-10~80°C [14~176°F]		
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	$\leq 1 \times 10^{-9}$ atm.cc/s		
External Leakage Allowance - He (Holding Time - Min 1 min)	$\leq 1 \times 10^{-9}$ atm.cc/s		



Male UCR

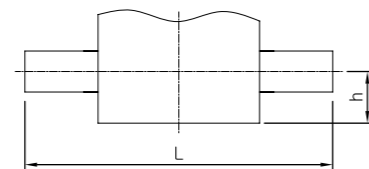
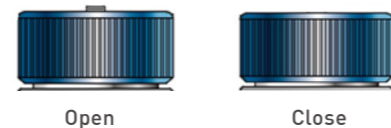


Female UCR



Bottom Mounting

Handle Position



Tube Butt Weld

Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)						
	Inlet	Outlet	L	h	H	W(Ø)	F	E(Ø)	K
VCDHF	C-08MR-	1/2" Swivel Male UCR	138.7	16.0	68.9	50.0	50.0	50.0	M5
	C-12MR-	3/4" Swivel Male UCR	157.0	17.5	74.4	50.0	50.0	50.0	M5
	C-16MR-	1" Swivel Male UCR	166.0	17.5	74.4	50.0	50.0	50.0	M5
	C-08F-	1/2" Female UCR	138.7	16.0	68.9	50.0	50.0	50.0	M5
	C-12F-	3/4" Female UCR	157.0	17.5	74.4	50.0	50.0	50.0	M5
	C-16F-	1" Female UCR	166.0	17.5	74.4	50.0	50.0	50.0	M5
	WB-08T-	1/2" Tube Butt Weld	150.0	16.0	68.9	50.0	50.0	50.0	M5
	WB-12T-	3/4" Tube Butt Weld	150.0	17.5	74.4	50.0	50.0	50.0	M5
WB-16T-	1" Tube Butt Weld	150.0	17.5	74.4	50.0	50.0	50.0	M5	

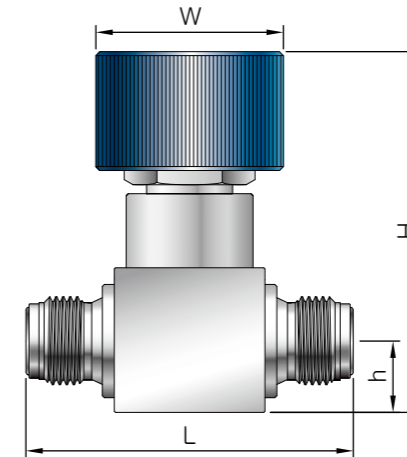
Dimensions are for reference only and are subject to change without prior notice.

VCDMHF / VCDHMF series

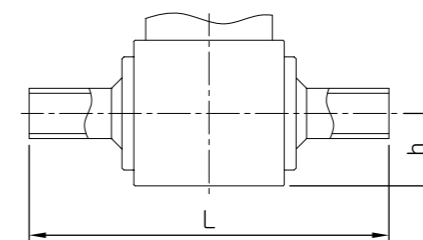
(High Flow Type High Pressure Diaphragm Valve – Manual Operation)

Specification

Size	1/2"	
Cv Value	1.3	0.8
Max. Working Pressure	103bar [1500psig]	207bar [3000psig]
Max. Working Temperature	-40~65°C [-40~150°F]	
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	$\leq 4 \times 10^{-9}$ atm.cc/s	
External Leakage Allowance - He (Holding Time - Min 1 min)	$\leq 1 \times 10^{-9}$ atm.cc	

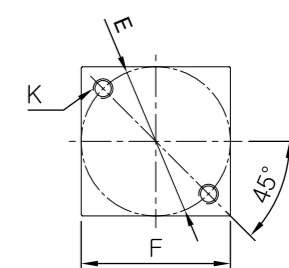


Male UCR



Tube Butt Weld

Handle Position



Bottom Mounting

Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)						
	Inlet	Outlet	L	h	H	W(Ø)	F	E(Ø)	K
VCDMHF	C-08M-	1/2" Male UCR	82.6	18.0	91.3	47.3	38.0	38.0	M5
	WB-08T-	1/2" Tube Butt Weld	90.9	18.0	91.3	47.3	38.0	38.0	M5
VCDHMF	C-08M-	1/2" Male UCR	82.6	18.3	92.4	47.3	38.0	38.0	M5
	WB-08T-	1/2" Tube Butt Weld	90.9	18.0	92.4	47.3	38.0	38.0	M5

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

VCDMHF / VCDHMF series

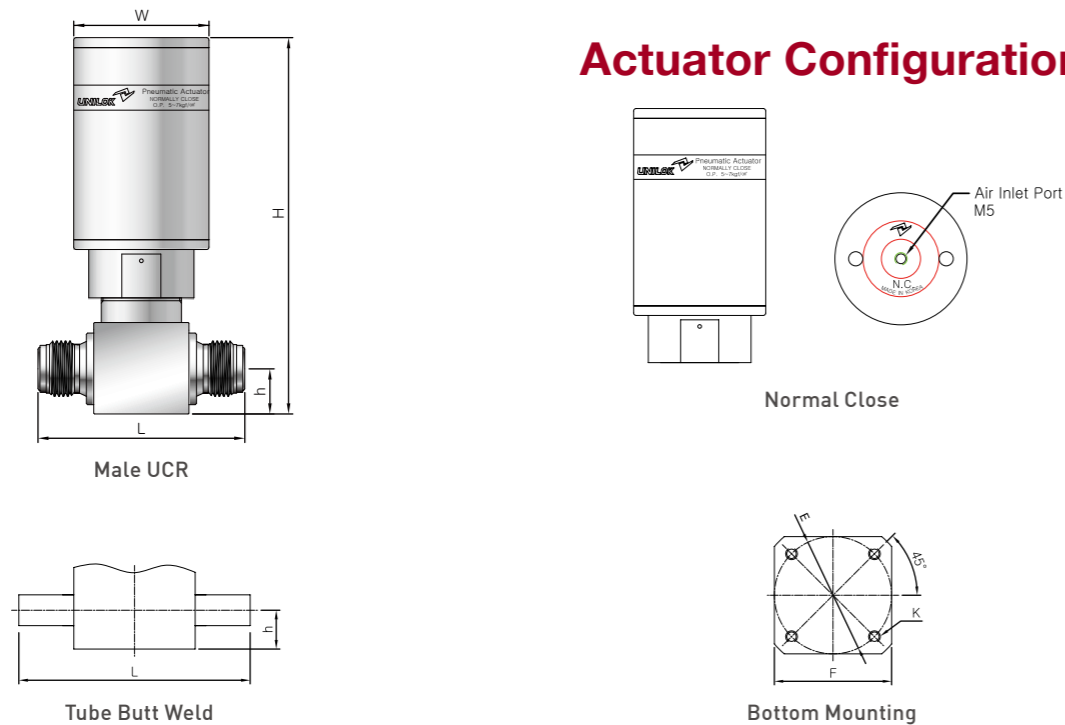
(High Flow Type High Pressure Diaphragm Valve - Pneumatic Actuating Operation)

Specification

Size	1/2"	
Cv Value	1.0	0.8
Max. Working Pressure	83bar (1200psig)	207bar (3000psig)
Max. Working Temperature	-40~65°C (-40~150°F)	
Actuator Pressure Rating	5~7 bar (73~101psig)	
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤4x10 ⁻⁹ atm.cc/s	
External Leakage Allowance - He (Holding Time - Min 1 min)	≤1x10 ⁻⁹ atm.cc/s	



Actuator Configuration



Ordering Information & Dimensions

Part No.	End Connection	Dimensions (mm)							
		Inlet	Outlet	L	h	H	W(Ø)	F	E(Ø)
VCDMHF	C-08M-	1/2" Male UCR	82.6	18.0	160.5	47.3	38.0	38.0	M5
	WB-08T-	1/2" Tube Butt Weld	90.9	18.0	160.5	47.3	38.0	38.0	M5
VCDHMF	C-08M-	1/2" Male UCR	82.6	18.3	161.6	47.3	38.0	38.0	M5
	WB-08T-	1/2" Tube Butt Weld	90.9	18.0	161.6	47.3	38.0	38.0	M5

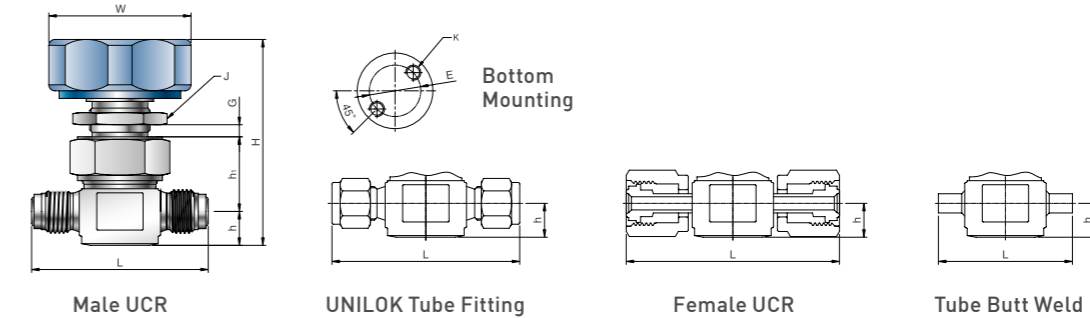
Dimensions are for reference only and are subject to change without prior notice.

VCDF series

(Forged Body Low Pressure Diaphragm Valve - Manual Operation)

Specification

Size	1/4"	3/8", 1/2"	3/4"
Orifice Size	4.3	6.5	6.5
Cv Value	0.3	0.7	0.7
Max. Working Pressure	10 bar (145 psig)		
Max. Working Temperature	-10~80°C (14~176°F)		
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤1x10 ⁻⁹ atm.cc/s		
External Leakage Allowance - He (Holding Time - Min 1 min)	≤1x10 ⁻⁹ atm.cc/s		



Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)								
	Inlet	Outlet	L	h	h ₁	H	E	K	W(Ø)	G	J(Ø)
VCDF	U-04T-	1/4" UNILOK	62.0	11.1	24.7	68.6	17.0	M5	47.0	5.0	21.0
	U-06T-	3/8" UNILOK	74.8	16.0	31.8	80.5	28.0				
	U-08T-	1/2" UNILOK	80.2	16.0	31.8	80.5	28.0				
	U-12T-	3/4" UNILOK	108.0	22.0	36.3	91.0	28.0				
	C-04M-	1/4" Male UCR	58.4	11.1	24.7	68.6	17.0				
	C-08M-	1/2" Male UCR	73.6	16.0	31.8	80.5	28.0				
	C-12M-	3/4" Male UCR	88.0	22.0	36.3	91.0	28.0				
	C-04F-	1/4" Female UCR	70.6	11.1	24.7	68.6	17.0				
	C-08F-	1/2" Female UCR	83.0	16.0	31.8	80.5	28.0				
	WB-04T-	1/4" Tube Butt Weld	44.2	11.1	24.7	68.6	17.0				
	WB-06T-	3/8" Tube Butt Weld	73.6	16.0	31.8	80.5	28.0				
	WB-08T-	1/2" Tube Butt Weld	73.6	16.0	31.8	80.5	28.0				
WB-12T-	3/4" Tube Butt Weld	88.0	22.0	36.3	91.0	28.0					

Handle Position

Handle position is the same as VCDL series.

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

VCDBL series

(Block Type Low Pressure Diaphragm Valve - Manual Operation & Pneumatic Actuating Operation)

Specification

Size	1/4"	3/8", 1/2"
Orifice Size	4.3	6.5
Cv Value	0.3	0.7
Max. Working Pressure	10 bar (145 psig)	
Max. Working Temperature	-10~80°C (14~176°F)	
Actuator Pressure Rating	5~7 bar (73~101 psig)	
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	≤ 1x10 ⁻⁹ atm.cc/s	
External Leakage Allowance - He (Holding Time - Min 1 min)	≤ 1x10 ⁻⁹ atm.cc/s	

Manual Operation

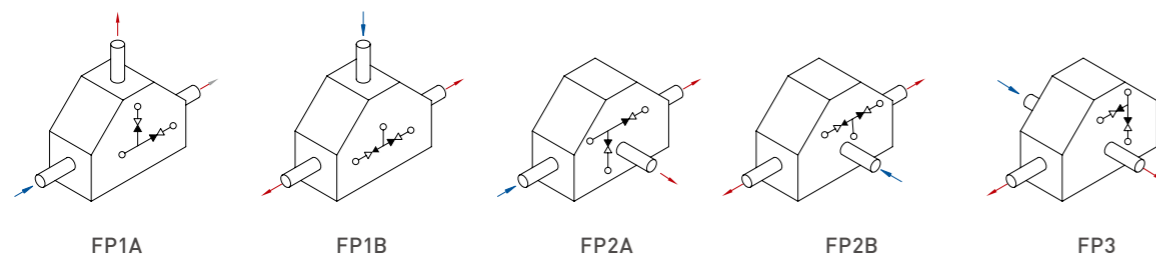


Pneumatic Actuating Operation

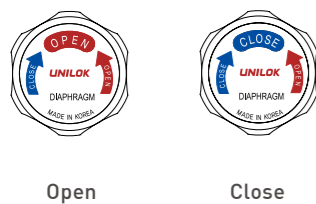


Flow Path Patterns

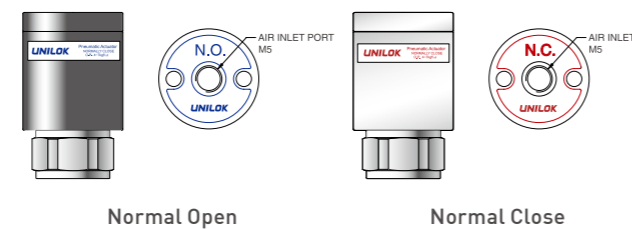
UNILOK VCDBL series valves have various flow paths. To order, add flow path designator next to connection size designator.



Handle Position

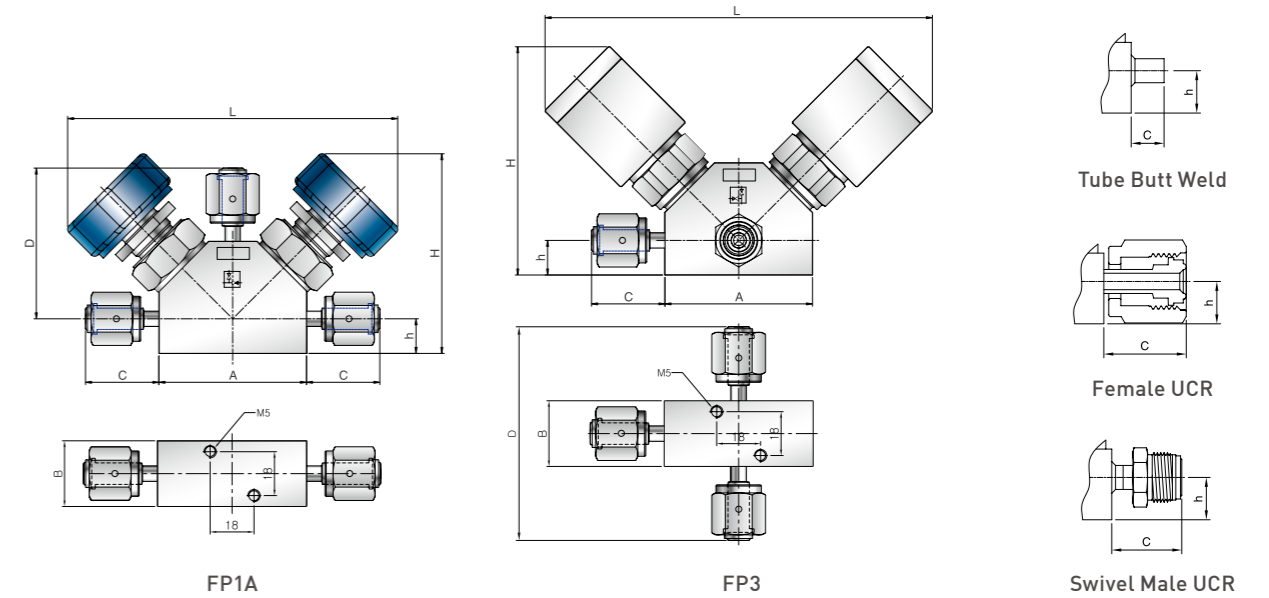


Actuator Configuration



Manual Operation

Pneumatic Actuating Operation



Ordering Information & Dimensions

Manual Operation

Part No.		End Connection		Dimensions (mm)							
		Inlet	Outlet	A	B	C	D	h	H	L	
VCDS	C-	FP1A-	04MR-	1/4" Swivel Male UCR	61.0	26.9	30.3	62.3	14.3	73.8	119.0
	C-		04F-	1/4" Female UCR							
	WB-		04T-	1/4" Tube Butt Weld							

Pneumatic Actuating Operation

Part No.		End Connection		Dimensions (mm)							
		Inlet	Outlet	A	B	C	D	h	H	L	
VCDBL	C-	FP3-	04MR-	1/4" Swivel Male UCR	61.0	26.9	30.3	77.0	14.3	86.1	143.6
	C-		04F-	1/4" Female UCR							
	WB-		04T-	1/4" Tube Butt Weld							

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

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

VCDDBH series

(Block Type High Pressure Diaphragm Valve - Manual Operation & Pneumatic Actuating Operation)

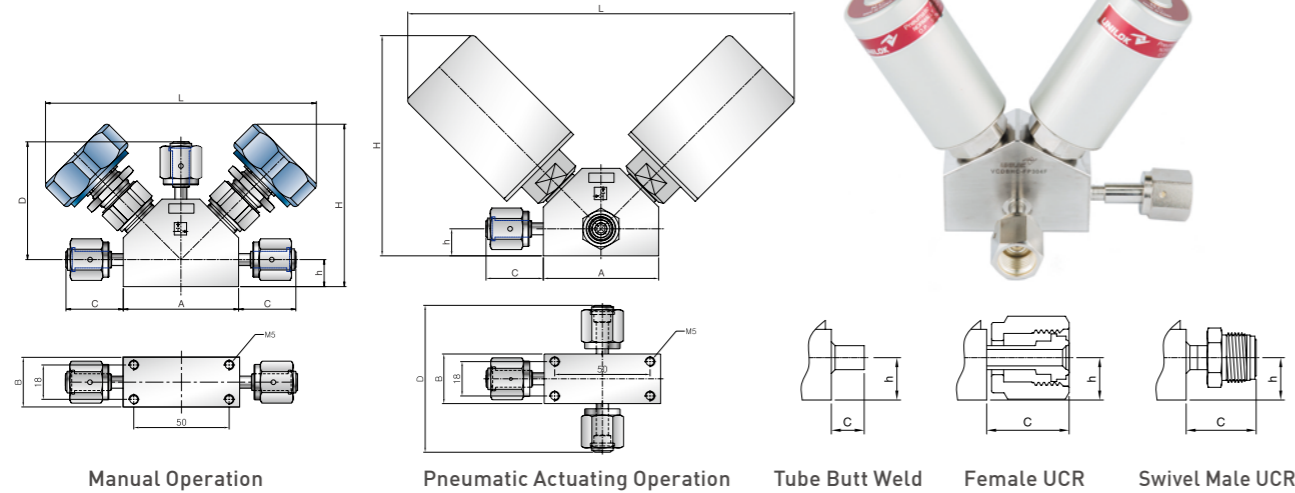
Specification

Size	1/4"
Orifice Size	2.5
Cv Value	0.1
Max. Working Pressure	10 bar (145 psig)
Max. Working Temperature	-10~40°C (14~107°F)
Actuator Pressure Rating	5~7 bar (73~101 psig)
Internal Leakage Allowance - He (Holding Time - Min 30 sec)	$\leq 1 \times 10^{-9}$ atm.cc/s
External Leakage Allowance - He (Holding Time - Min 1 min)	$\leq 1 \times 10^{-9}$ atm.cc/s

Manual Operation



Pneumatic Actuating Operation



Ordering Information & Dimensions

Manual Operation

Part No.				End Connection		Dimensions (mm)						
				Inlet	Outlet	A	B	C	D	h	H	L
VCDDBH	C-	FP1A-	04MR-	1/4" Swivel Male UCR		61.0	26.0	30.3	62.3	11.0	84.4	139.3
	C-		04F-	1/4" Female UCR								
	WB-		04T-	1/4" Tube Butt Weld								

Pneumatic Actuating Operation

Part No.				End Connection		Dimensions (mm)						
				Inlet	Outlet	A	B	C	D	h	H	L
VCDBL	C-	FP3-	04MR-	1/4" Swivel Male UCR		61.0	26.0	30.3	77.0	11.0	114.0	139.3
	C-		04F-	1/4" Female UCR								
	WB-		04T-	1/4" Tube Butt Weld								

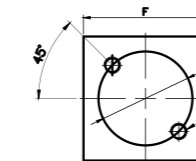
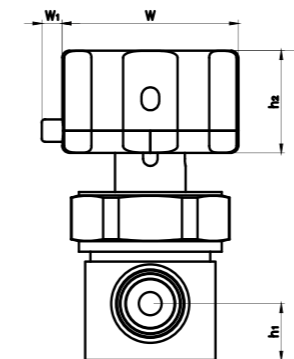
Dimensions are for reference only and are subject to change without prior notice.

VCDL series

(Standard Type Low Pressure Diaphragm Valve – Lock Operation)

Specification

Size	1/4"	1/2"
Orifice Size	4.3	6.5
CV Value	0.3	0.7
Max Working Pressure	10bar	
Max. Working Temperature	-10~80°C (14~176°F)	
Handle Operation Angle	270°	
Internal leakage Allowance-He	$\leq 1 \times 10^{-9}$ atm.cc/s	
External leakage Allowance-He	$\leq 1 \times 10^{-9}$ atm.cc/s	



Bottom Mounting

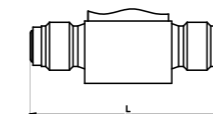
* Four holes are also used depending on the situation.



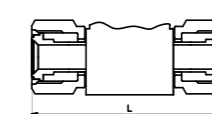
Press the button in Close state and turn the valve toward 'OPEN'.

When 'CLOSE' sign is not showing in the indicator, release the button then turn the valve toward 'OPEN'. It is locked automatically when it is in OPEN state.

If you want to lock the valve, do the same process in reverse order.



Male UCR



Female UCR

Ordering Information & Dimensions

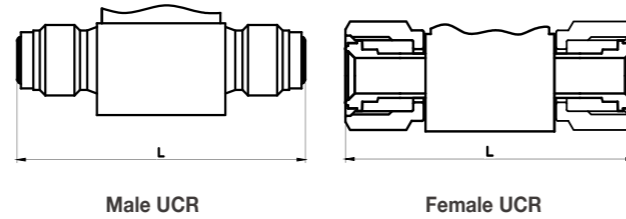
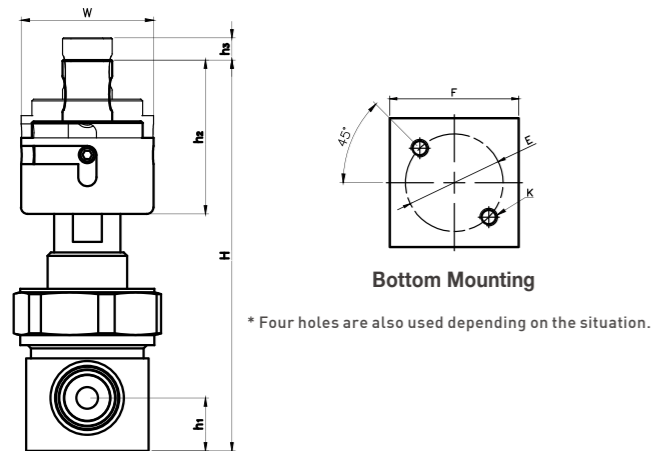
Part No.				End Connection		Dimensions (mm)						
				Inlet	Outlet	L	H	h1	h2	W	W1	E
VCDL	C-04M-	1/4" Male UCR		58.4	78.7	11.1	29.0	50.0	5.2	25.4	26.0	M5
	C-04F-	1/4" Female UCR		70.6								
	C-08M-	1/2" Male UCR		73.6	86.4	16.0	29.0	50.0	5.2	28.0	37.0	
	C-08F-	1/2" Female UCR		83.0								

VCDs series

(Shut Off Type Low Pressure Diaphragm Valve – LOTO)

Specification

Size	1/4"	1/2"
Orifice Size	4.3	6.5
CV Value	0.3	0.7
Max Working Pressure	10bar	
Max. Working Temperature	-10~80°C (14~176°F)	
Handle Operation Angle	90°	
Internal leakage Allowance-He	≤1x10 ⁻⁹ atm.cc/s	
External leakage Allowance-He	≤1x10 ⁻⁹ atm.cc/s	



In CLOSE state, You can lock the handle by lifting the handle.
 When turning the handle to the OPEN state, be sure to turn the handle down.
 When you fasten the lock with the handle raised, you can prevent the handle from going down.
 The lock can be fastened only with the handle lifted up in CLOSE state.

Ordering Information & Dimensions

Part No.	End Connection		Dimensions (mm)								
	Inlet	Outlet	L	H	h1	h2	h3	W	E	F	K
VCDL	C-04M-	1/4" Male UCR	58.4	92.8	11.1	40.7	8.3	28.0	25.4	26.0	M5
	C-04F-	1/4" Female UCR	70.6								
	C-08M-	1/2" Male UCR	73.6	124.8	16.0	46.5	6.6	40.0	28.0	37.0	
	C-08F-	1/2" Female UCR	83.0								

VCD3F series

Standard Type Low Pressure Diaphragm Valve - Pneumatic Actuating Operation

Specification

Item	VCD3FL	VCD3FH	VCD3F17
Size	1/4"		
Orifice Size	Ø4.3mm		
CV Value	0.3		
Max Working Pressure	10bar	206bar	17bar
Max. Working Temperature	-10~80°C (14~176°F)		
Operation working Pressure	4~7bar	5~7bar	5~7bar
Internal leakage Allowance-He	≤1x10 ⁻⁹ atm.cc/s		
External leakage Allowance-He	≤1x10 ⁻⁹ atm.cc/s		



How To Order



Valve Type	
VCD3FL	Valve Series (Low Pressure:10bar)
VCD3FH	Valve Series (High Pressure:206bar)

Connection Type1	
U	Tube Fitting
C	UCR

Materials	
DM	316LSS-SEMI F20
SL	316LSS

Connection Size	
04	1/4" / 6.35mm

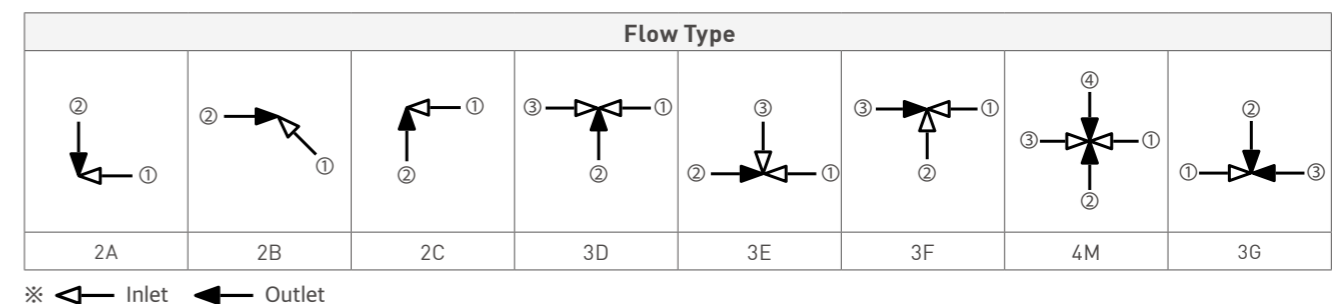
Connection Type2	
MR	Rotable Male UCR
F	Female UCR
WB	Tube Butt Weld

* In other cases of pressure, a number is displayed.
 ex) VCD3F17=17bar

Operation Type	
None	Manual Handle
PC	Pneumatic Normal Close
PO	Pneumatic Normal Open
LH	Lever Manual Handle

Surface Finish Level	
BA	BA
EP	EP - Electro Polished

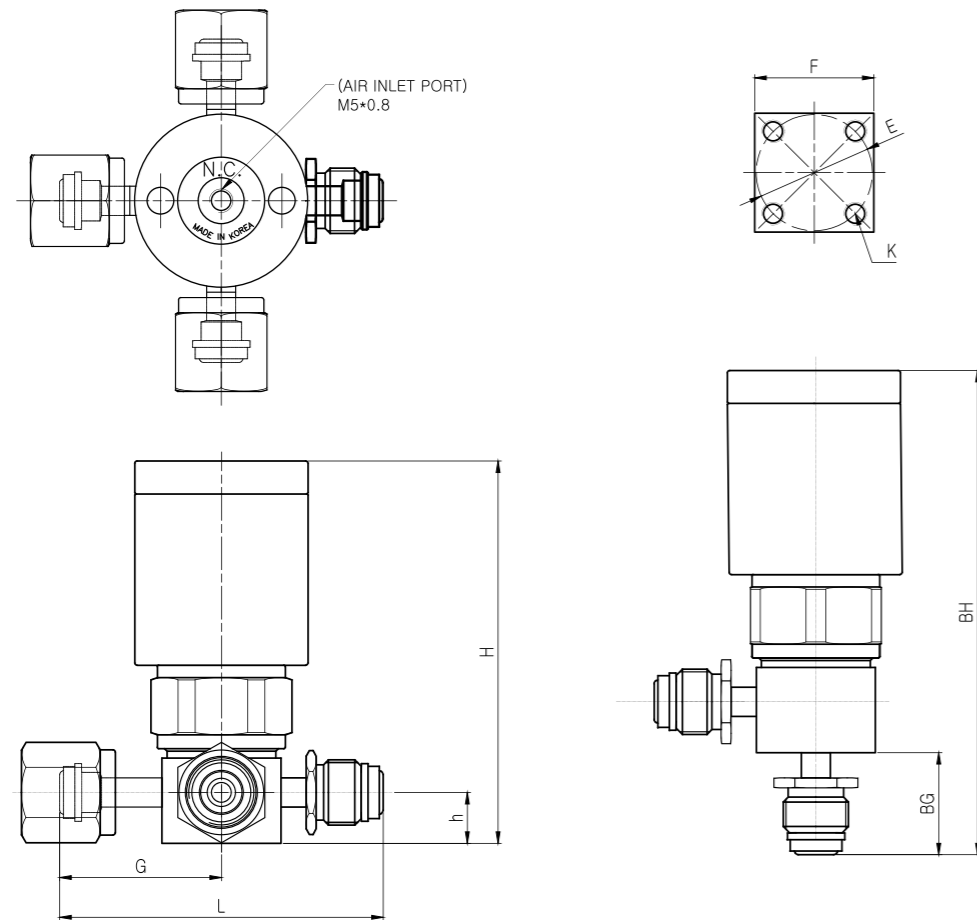
* Record only once if all connections are the same.



VCD3F series

(Standard Type Low Pressure Diaphragm Valve - Pneumatic Actuating Operation)

Ordering Information & Dimensions



Part No.	Dimensions (mm)								
	L	G	BG	BH	H	h	E	F	K
VCD3F Series	70.6	35.3	24.2	108	83.5	11.1	25.4	26	M5

Please refer to the catalog for the valve flow path.
 The End connection can be ordered by arrows and numbers.
 The empty triangle is the entrance and the black triangle is the exit.
 Fluids flow from all the outlets when the valve with multiple outlets opens. So please check it before you use it.

VCCDAU series

Chemical Valve

CONTENTS

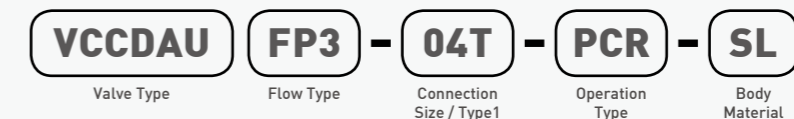
Specification	336	Materials of construct (2way)	338
How To Order	336	Materials of construct (3way)	339
Ordering Information & Dimensions	337		

Specification

ITEM	Chemical Valve
Orifice Size	Ø4.35mm
CV Value	0.6
Max Working Pressure	6 bar (87psig)
Max. Working Temperature	0~130°
Operation working Pressure	4~6 bar
Internal leakage Allowance-He	≤1x10 ⁻⁹ atm.cc/s
External leakage Allowance-he	≤1x10 ⁻⁹ atm.cc/s



How To Order



Valve Type		Connection Size		Body Material	
VCCDAU	Chemical Valve	04	1/4" / 6.35mm	SL	316L SS

Flow Type		Connection Type1	
2 way	None	T	Tube Fitting
3 way	FP3		

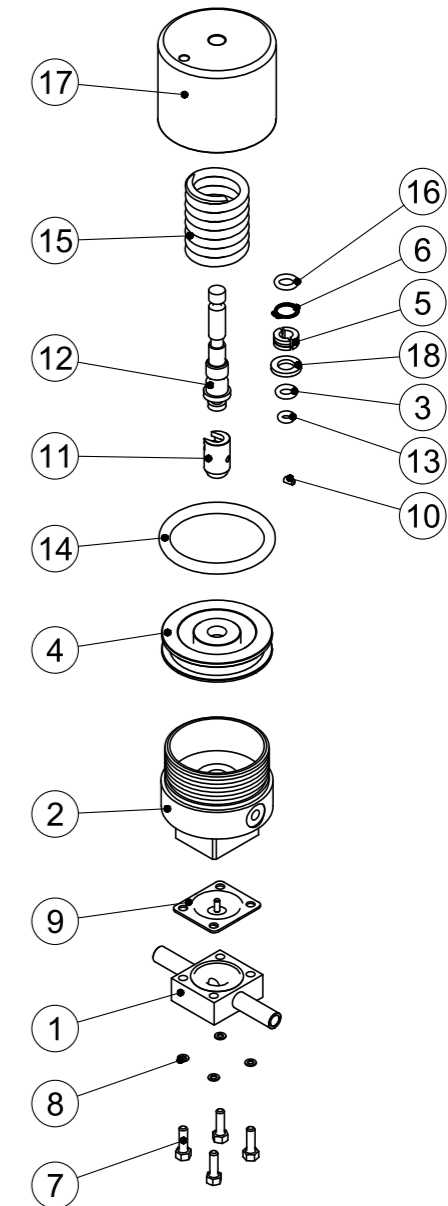
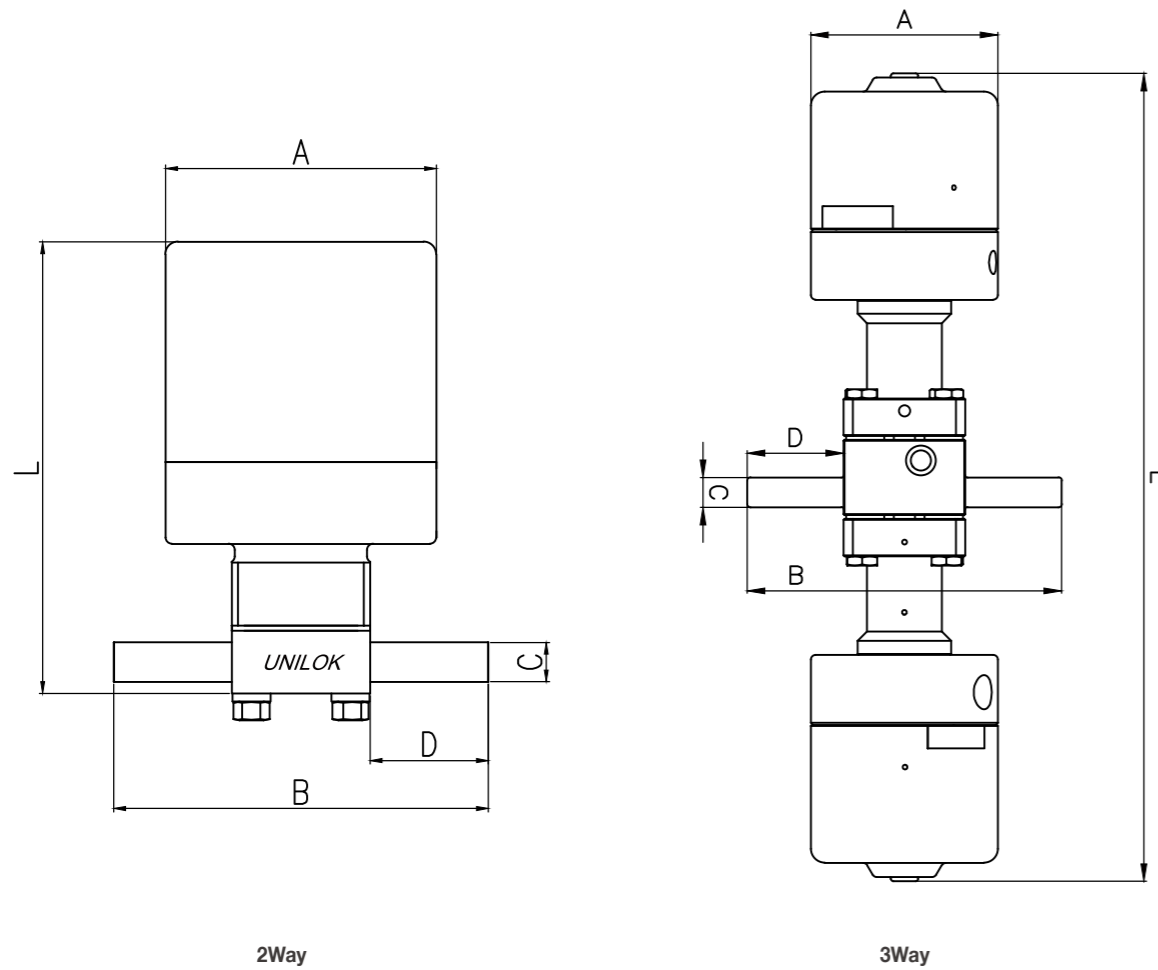
Operation Type	
PCR	Pneumatic Normal Close

Flow Type	
2 way	
3 way	

Ordering Information & Dimensions

Materials of construct (2way)

No.	Description	Materials	EA
1	Body	SUS316	1
2	Actuator Body	AL 2011	1
3	O-Ring	EPDM	1
4	PISTON	AL 2011	1
5	STOPPER	SUS304	2
6	SNAP-RING	SUS304	1
7	HEX BOLT	SUS304	4
8	WASHER	SUS304	4
9	PTFE DIAPHRAGM	PTFE	1
10	PIN	SUS304	2
11	DIAPHRAGM STOPPER	SUS316	2
12	STEM	SUS304	1
13	O-RING	EPDM	1
14	O-RING	EPDM	1
15	SPRING	SUS304	1
16	O-RING	EPDM	1
17	ACTUATOR CAP	AL2011	1
18	GASKET	SUS304	1



Part No.	Connection Size	Orifice mm	Dimensions (mm)				
			L	A	B	C	D
VCCDAU-04T-PCR-SL	2way / 1/4 inch Tube	4.35	71.8	43	59.5	6.35	18.75
VCCDAU-FP304T-PCR-SL	3way / 1/4 inch Tube	4.35	171.9	40	67.2	6.35	20.6

Materials of construct (3way)

No.	Description	Materials	EA
1	Body	SUS316	1
2	Lower Diaphragm	PTEF	2
3	EPDM Diaphragm	EPDM	2
4	Diaphragm Holder	SUS304	2
5	Diaphragm Stopper	SUS304	2
6	Diaphragm Button	SUS304	2
7	Bonnet	SUS304	2
8	Stem	SUS304	2
9	Tefron Insert	PTFE	2
10	Stem Insert	SUS304	2
11	Spring	SUS316	2
12	O-Ring(S015)	EPDM	2
13	Actuator Body	AL2011	2
14	Bonnet Ring	SUS304	2
15	C-Snap Ring	SUS304	2
16	E-Snap Ring	SUS304	4
17	C-Snap Ring	SUS304	4
18	Piston Mid	AL2011	2
19	Stem Ring	SUS304	4
20	Piston	AL2011	4
21	Ring Seat	SUS304	4
22	Actuator Cap	AL2011	2
23	O-Ring(P006)	EPDM	8
24	O-Ring(P024)	EPDM	4
25	O-Ring(S025)	EPDM	2
26	O-Ring(P010)	EPDM	2
27	Hex Bolt	SUS304	8
28	Body Set Screw	SUS304	2

