UHP

Diaphragm Valve VCD



UNILOK 300 | 301

JNILOK

Diaphragm Valve VCD

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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

Manual

Indicator Handle

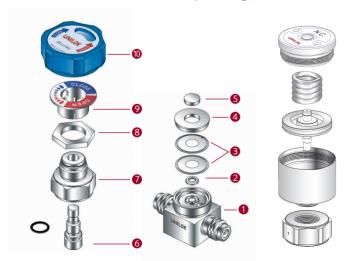
Minimal contributions of moisture, oxygen and hydrocarbon with UNILOK's own special cleaning process in a certified clean room

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



Pneumatic Actuator

Panel and Bottom Mountable Elgiloy Diaphragm Materials for Long Cycle Life Excellent Finish for Minimal Particle Generation

Visible

IndicatorHandle

Materials of Construction

| No. | Description | Materials | |
|---------|-------------|-----------|-----------|
| Operati | on Type | 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

| Doscription | Surface F | inish(µm) |
|-------------|-----------|-----------|
| Description | 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 $18\text{M}\Omega$ 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.

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 VCD series valves are performed in a certified clean room.

Example: The following part number, *VCDLC-04M-P0-SL-EP* is designated for Low Pressure Diaphragm Valve, both 1/4" Male UCR, Pneumatic Normal Open Operation, 316LSS, EP.



| | 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 |
| DHHF | HIgh Flow High Pressure |
| DBL | Block Low Pressure |
| DBH | Block High Pressure |

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

UCR- Metal Face Seal

| | | Connec | tion Siz | е | |
|-------|--|--------|----------|-------|-------|
| Fra | Fractional(Inch) Tube O.D. Designation | | | | |
| Tube | inch | 1/4 | 3/8 | 1/2 | 3/4 |
| 0.D. | mm | 6.35 | 9.52 | 12.70 | 19.05 |
| Desig | nator | 04T | 06T | 08T | 12T |

| Pipe Size Designation (NPT or IS07/1-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 | |
| P0 | Pneumatic -Normal Open | |
| PC | Pneumatic -Normal Close | |
| POC | Block Type Pneumatic 1-N.O 2-N.C | |
| PC0 | Block Type Pneumatic 1-N.C 2-N.O | |

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

| Material | |
|----------|-------------------------|
| DM | 316LSS - Double Melting |
| SM | 316LSS - Single Melting |
| SL | 316LSS |

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

Flow Path Pattern Designator See the details in page 309.

UNILOK 302 | 303



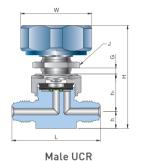
VCDL series

(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 | | | | | |
| Max. Working Pressure | 10 bar (145 psig) | | | | | | |
| Max. Working Temperature | -10~80°C (14~176°F) | | | | | | |
| Internal Leakage llowance - 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 | | | | | | |



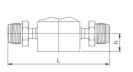


Bottom Mounting









Swivel Male UCR

Handle Position

UNILOK Tube Fitting

Female UCR

Tube Butt Weld

Ordering Information & Dimensions

| Dev | rt No. | End Connection | | Dimensions (mm) | | | | | | | | | |
|------|---------|---------------------|-------------|-----------------|------|----------------|------|------|------|-------|------|-----|------|
| Pai | T NO. | Inlet | Outlet | L | h | h ₂ | Н | F | Е | K | W(Ø) | G | J(Ø) |
| | U-04T- | 1/4" UNILOK | | 62.0 | 11.1 | 24.7 | 68.6 | 26.0 | 25.4 | | | | |
| | U-06T- | 3/8" U | NILOK | 74.8 | 16.0 | 31.8 | 80.5 | 37.0 | 28.0 | | | | |
| | U-08T- | 1/2" U | NILOK | 80.2 | 16.0 | 31.8 | 80.5 | 37.0 | 28.0 | | | | |
| | U-12T- | 3/4" U | 3/4" UNILOK | | 22.0 | 36.3 | 91.0 | 37.0 | 28.0 | | | | 01.0 |
| | C-04M- | 1/4" Male UCR | | 58.4 | 11.1 | 24.7 | 68.6 | 26.0 | 25.4 | | /7.0 | F 0 | |
| | C-08M- | 1/2" Male UCR | | 73.6 | 16.0 | 31.8 | 80.5 | 37.0 | 28.0 |] | | | |
| VODI | C-12M- | 3/4" Male UCR | | 88.0 | 22.0 | 36.3 | 91.0 | 37.0 | 28.0 | | | | |
| VCDL | C-04MR- | 1/4" Swive | l Male UCR | 100.0 | 11.1 | 24.7 | 68.6 | 26.0 | 25.4 | M5 | 47.0 | 5.0 | 21.0 |
| | C-04F- | 1/4" Fem | nale UCR | 70.6 | 11.1 | 24.7 | 68.6 | 26.0 | 25.4 | | | | |
| | C-08F- | 1/2" Fem | nale UCR | 83.0 | 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

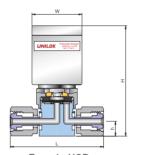
(Standard Type Low Pressure Diaphragm Valve - Pneumatic Actuating Operation)

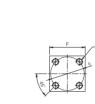
Specification

| 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℃ | (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 | | | | |



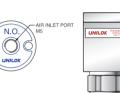
Actuator Configuration













UNILOK Tube Fitting

Male UCR

Normal Open Tube Butt Weld

Normal Close Swivel Male UCR

Ordering Information & Dimensions

| D | 4 M - | End Cor | nnection | | Dimensions (mm) | | | | | | | | |
|------|---------|---------------------|---------------------|------|-----------------|------|------|------|------|----|--|--|--|
| Par | t No. | Inlet | Outlet | L | h | Н | W(Ø) | F | Е | K | | | |
| | U-04T- | 1/4" U | NILOK | 62.0 | 11.1 | 83.5 | 37.8 | 26.0 | 25.4 | | | | |
| | U-06T- | - 3/8" UNILOK | | 74.8 | 16.0 | 94.4 | 53.0 | 37.0 | 28.0 | | | | |
| | U-08T- | 1/2" UNILOK | | 80.2 | 16.0 | 94.4 | 53.0 | 37.0 | 28.0 | | | | |
| | C-04M- | 1/4" Male UCR | | 58.4 | 11.1 | 83.5 | 37.8 | 26.0 | 25.4 | | | | |
| VODI | C-08M- | 1/2" Male UCR | | 73.6 | 16.0 | 93.5 | 53.0 | 37.0 | 28.0 | ME | | | |
| VCDL | C-04F- | 1/4" Fem | nale UCR | 70.6 | 11.1 | 83.5 | 37.8 | 26.0 | 25.4 | M5 | | | |
| | C-08F- | 1/2" Fen | 1/2" Female UCR | | 16.0 | 94.4 | 53.0 | 37.0 | 28.0 | | | | |
| | WB-04T- | 1/4" Tube | 1/4" Tube Butt Weld | | 11.1 | 83.5 | 37.8 | 26.0 | 25.4 | | | | |
| | WB-06T- | 3/8" Tube Butt Weld | | 73.6 | 16.0 | 94.4 | 53.0 | 37.0 | 28.0 | | | | |
| | WB-08T- | 1/2" Tube | Butt Weld | 73.6 | 16.0 | 94.4 | 53.0 | 37.0 | 28.0 | | | | |

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

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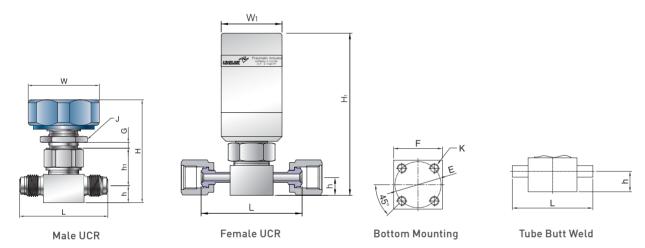
VCDH series

(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) | ≤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 | Н | H ₁ | F | Е | K | W(Ø) | W ₁ (Ø) | G | J(Ø) |
| | C-04T- | 1/4" U | NILOK | 62.0 | | | | | | | | | | | |
| | C-04M- | 1/4" Ma | ale UCR | 58.4 | 11.1 | 0.45 | 68.6 | 4000 | 0/0 | 20.7 | | /7.0 | 38.0 | 5.0 | 04.0 |
| VCDH | C-04F- | 1/4" Fem | nale UCR | 70.6 | | 24.7 | | 102.0 | 26.0 | 20.4 | M5 | 47.0 | | | 21.0 |
| | 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.

VCDS series

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

Specification

Male UCR

UNILOK Tube Fitting

| 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℃ | (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

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

Ordering Information & Dimensions

Female UCR

Bottom Mounting

| D | . N. | End Connection | | Dimensions (mm) | | | | | | | | |
|------|---------|----------------|---------------------|-----------------|------|-------|------|------|------|----|--|--|
| Par | t No. | Inlet | Outlet | L | h | Н | F | Е | W(Ø) | K | | |
| | U-04T- | 1/4" U | NILOK | 62.0 | 11.1 | 75.2 | 26.0 | 25.4 | 36.9 | | | |
| | U-06T- | 3/8" U | NILOK | 74.8 | 16.0 | 103.0 | 37.0 | 28.0 | 50.0 | | | |
| | U-08T- | 1/2" U | NILOK | 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 | | | |
| VODC | C-08M- | 1/2" Male UCR | | 73.6 | 16.0 | 103.0 | 37.0 | 28.0 | 50.0 | МЕ | | |
| VCDS | C-04F- | 1/4" Fem | nale UCR | 70.6 | 11.1 | 75.2 | 26.0 | 25.4 | 36.9 | M5 | | |
| | C-08F- | 1/2" Fen | nale UCR | 83.0 | 16.0 | 103.0 | 37.0 | 28.0 | 50.0 | | | |
| | WB-04T- | 1/4" Tube | 1/4" Tube Butt Weld | | 11.1 | 75.2 | 26.0 | 25.4 | 36.9 | | | |
| | WB-06T- | 3/8" Tube | 3/8" Tube Butt Weld | | 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.

UNILOK 306 | 307



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 |

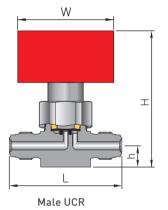
Handle Position

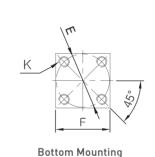
Quick and quarter turn handle actuation











Colored Handle

Colored handle are available for VCDDHC series valves.

To order, and handle color designator next to connection size designator.







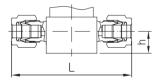




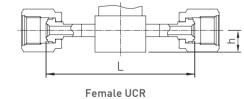
-MIR Red

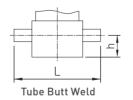
-MIG Green

-MIW White



UNILOK Tube Fitting





Ordering Information & Dimensions

| David | M- | End Connection | | Dimensions (mm) | | | | | | | | |
|--------|---------|---------------------|-------------|-----------------|------|------|------|------|------|----|--|--|
| Part | No. | Inlet | Outlet | L | h | Н | W | F | E(Ø) | K | | |
| | U-04T | 1/4" U | 1/4" UNILOK | | 11.1 | 71.0 | 50.0 | 26.0 | 25.4 | M5 | | |
| VODDII | C-04M- | 1/4" Male UCR | | 58.4 | 11.1 | 71.0 | 50.0 | 26.0 | 25.4 | M5 | | |
| VCDDH | 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.

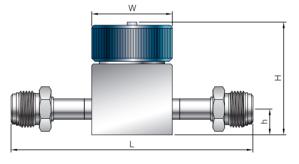
VCDHF series

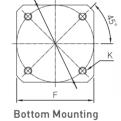
(High Flow Type Low Pressure Diaphragm Valve – Manual Operation)

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) | ≤1x10 ⁻⁹ atm.cc/s | | | | | | |
| External Leakage Allowance - He (Holding Time - Min 1 min) | <u>≤</u> | 1x10 ⁻⁹ atm.c | c/s | | | | |

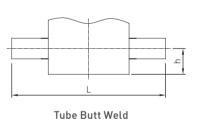








Male UCR Female UCR



Ordering Information & Dimensions

| Dow | t No. | End Connection | | Dimensions (mm) | | | | | | | | |
|-------|------------------------------|---------------------|------------|-----------------|------|------|------|------|------|----|--|--|
| Par | t No. | Inlet | Outlet | L | h | Н | W(Ø) | F | E(Ø) | K | | |
| | C-08MR- 1/2" Swivel Male UCR | | 138.7 | 16.0 | 68.9 | 50.0 | 50.0 | 50.0 | M5 | | | |
| | C-12MR- | 3/4" Swive | l 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 | | |
| VCDHF | 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 E | 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.

UNILOK 308 | 309



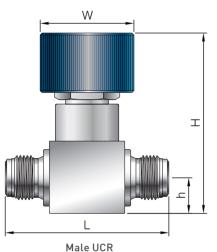
VCDMHF / VCDHHF series

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

Specification

| Size | 1/ | 2" | | | | |
|---|---------------------------------------|---------------------|--|--|--|--|
| Cv Value | 1.3 | 0.8 | | | | |
| Max. Working Pressure | 103bar 207bar (1500psig) (3000psig | | | | | |
| Max. Working Temperature | -40~65°C (-40~150°F) | | | | | |
| 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 | | | | |









Handle Position

Bottom Mounting

Ordering Information & Dimensions

Tube Butt Weld

| Dow | N. | End Cor | nnection | | Dimensions (mm) | | | | | | | | | |
|---------|---------|---------------------|-----------|------|-----------------|------|------|------|------|----|--|--|--|--|
| Гаі | No. | Inlet Outlet | | L | h | Н | W(Ø) | F | E(Ø) | K | | | | |
| VCDMUE | C-08M- | 1/2" Male UCR | | 82.6 | 18.0 | 91.3 | 47.3 | 38.0 | 38.0 | M5 | | | | |
| VCDMHF | WB-08T- | 1/2" Tube Butt Weld | | 90.9 | 18.0 | 91.3 | 47.3 | 38.0 | 38.0 | M5 | | | | |
| VODILLE | C-08M- | 1/2" Male UCR | | 82.6 | 18.3 | 92.4 | 47.3 | 38.0 | 38.0 | M5 | | | | |
| VCDHHF | 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.

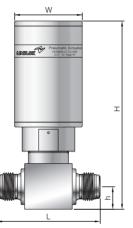
VCDMHF / VCDHHF series

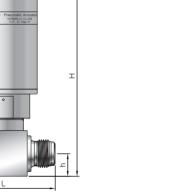
(High Flow Type High Pressure Diaphragm Valve - Pneumatic Actuating Operation)

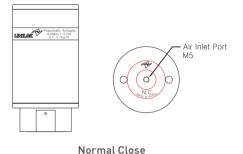
Specification

| 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 | | | | |









Bottom Mounting

Actuator Configuration

Tube Butt Weld

Male UCR



Ordering Information & Dimensions

| Dowl | t No. | End Cor | nnection | | Dimensions (mm) | | | | | | | | |
|---------|---------|---------------------|-----------|------|-----------------|-------|------|------|------|----|--|--|--|
| rait | I NO. | Inlet Outlet | | L | h | Н | W(Ø) | F | E(Ø) | K | | | |
| VODAULE | C-08M- | 1/2" Ma | ale UCR | 82.6 | 18.0 | 160.5 | 47.3 | 38.0 | 38.0 | M5 | | | |
| VCDMHF | WB-08T- | 1/2" Tube Butt Weld | | 90.9 | 18.0 | 160.5 | 47.3 | 38.0 | 38.0 | M5 | | | |
| VCDHHF | 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.

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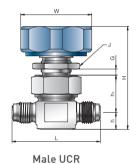
VCDF series

(Forged Body Low Pressure Diaphragm Valve - Manual Operation)

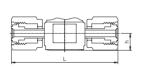
Specification

| | | 1 | | | | | |
|---|-------------------|--------------------------|-------|--|--|--|--|
| 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℃ (14~17 | 76°F) | | | | |
| Internal Leakage Allowance - He (Holding Time - Min 30 sec) | <u>≤</u> | 1x10 ⁻⁹ atm.c | c/s | | | | |
| External Leakage Allowance - He (Holding Time - Min 1 min) | <u>≤</u> | 1x10 ⁻⁹ atm.c | c/s | | | | |

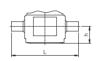








Female UCR



UNILOK Tube Fitting

Tube Butt Weld

Ordering Information & Dimensions

| D | at Na | End Cor | nnection | | | | Dim | nensions (ı | mm) | | | |
|------|---------|---------------|-----------|-------|------|----------------|------|-------------|-----|------|-----|------|
| Par | rt No. | Inlet | Outlet | L | h | h ₁ | Н | Е | K | W(Ø) | G | J(Ø) |
| | U-04T- | 1/4" U | NILOK | 62.0 | 11.1 | 24.7 | 68.6 | 17.0 | | | | |
| | U-06T- | 3/8" U | NILOK | 74.8 | 16.0 | 31.8 | 80.5 | 28.0 |] | | | |
| | U-08T- | 1/2" U | NILOK | 80.2 | 16.0 | 31.8 | 80.5 | 28.0 | | | | |
| | U-12T- | 3/4" U | NILOK | 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 | | | | |
| VCDF | C-12M- | 3/4" Ma | ile UCR | 88.0 | 22.0 | 36.3 | 91.0 | 28.0 | M5 | 47.0 | 5.0 | 21.0 |
| | C-04F- | 1/4" Fem | nale UCR | 70.6 | 11.1 | 24.7 | 68.6 | 17.0 | | | | |
| | C-08F- | 1/2" Fem | nale 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 | 1 | | | |
| | 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 ba | r (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) | ≤1x1 | 0 ⁻⁹ atm.cc/s |
| External Leakage Allowance - He (Holding Time - Min 1 min) | ≤1x1 | 0 ⁻⁹ atm.cc/s |

Manual Operation

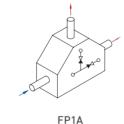


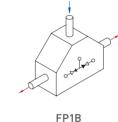
Pneumatic Actuating Operation

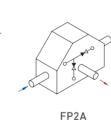


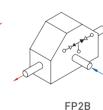
Flow Path Patterns

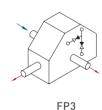
UNILOK VCDBL series valves have various flow paths. To order, add flow path designator next to connection size designator.











Handle Position



Open



Close

Actuator Configuration









Normal Open

Normal Close

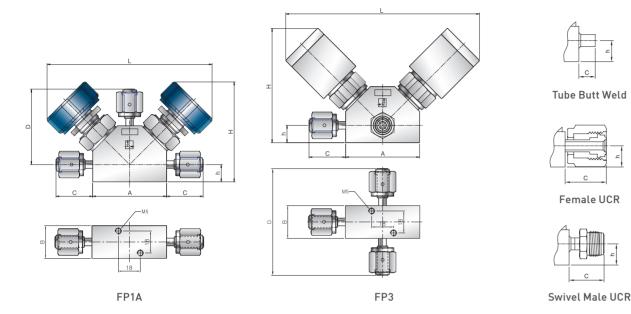
Dimensions are for reference only and are subject to change without prior notice.

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Manual Operation

Pneumatic Actuating Operation



Ordering Information & Dimensions

Manual Operation

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

Pneumatic Actuating Operation

| | Dowl | i Na | | End | Dimensions (mm) | | | | | | | |
|-------|----------|------|-------|----------------------|---------------------|---|------|------|------|------|------|-------|
| | Part No. | | | Inlet | Α | В | С | D | h | Н | L | |
| | C- | | 04MR- | 1/4" Swivel Male UCR | | | | | | | | |
| VCDBL | C- | FP3- | 04F- | 1/4" | 1/4" Female UCR | | 26.9 | 30.3 | 77.0 | 14.3 | 86.1 | 143.6 |
| | WB- | | 04T- | 1/4" T | 1/4" Tube Butt Weld | | | | | | | |

VCDBH series

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

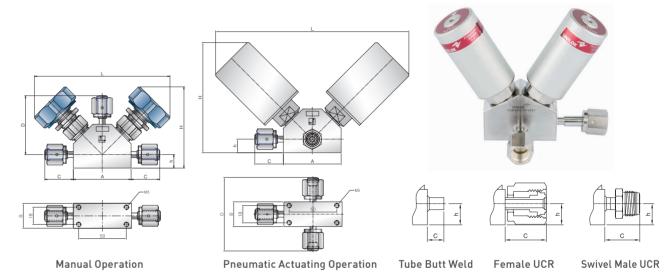
Specification

| 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) | ≤1x10 ⁻⁹ atm.cc/s |
| External Leakage Allowance - He (Holding Time - Min 1 min) | ≤1x10 ⁻⁹ atm.cc/s |

Manual Operation



Pneumatic Actuating Operation



Ordering Information & Dimensions

Manual Operation

| | Б. | . NI | | End Cor | Dimensions (mm) | | | | | | | |
|-------|----------|-------|-------|-----------------|----------------------|------|------|------|------|------|------|-------|
| | Part No. | | | Inlet | Α | В | С | D | h | Н | L | |
| | C- | | 04MR- | 1/4" Swive | 1/4" Swivel Male UCR | | | | | | | |
| VCDBH | C- | FP1A- | 04F- | 1/4" Female UCR | | 61.0 | 26.0 | 30.3 | 62.3 | 11.0 | 84.4 | 139.3 |
| | WB- | | 04T- | 1/4" Tube | 1/4" Tube Butt Weld | | | | | | | |

Pneumatic Actuating Operation

| | Dowl | . N.a | | End Cor | Dimensions (mm) | | | | | | | |
|----------|------|-------|-------|-----------------|----------------------|------|------|------|------|------|-------|-------|
| Part No. | | | Inlet | Α | В | С | D | h | Н | L | | |
| | C- | | 04MR- | 1/4" Swive | 1/4" Swivel Male UCR | | | | | | | |
| VCDBL | C- | FP3- | 04F- | 1/4" Female UCR | | 61.0 | 26.0 | 30.3 | 77.0 | 11.0 | 114.0 | 139.3 |
| | WB- | | 04T- | 1/4" Tube | 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.

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