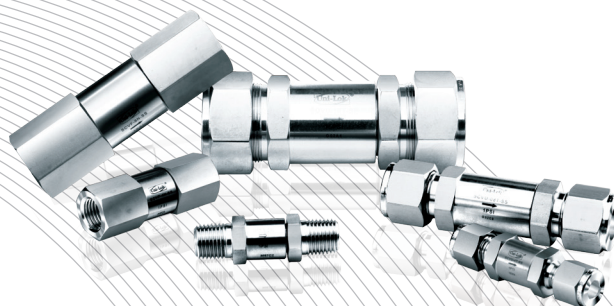




# GENERAL & HIGH PRESSURE **CHECK VALVES**

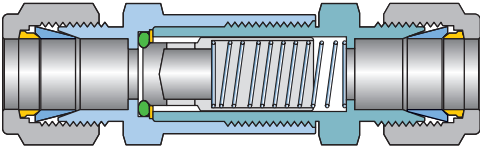
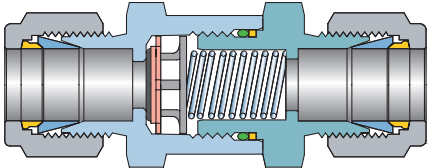
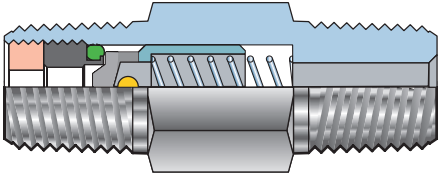
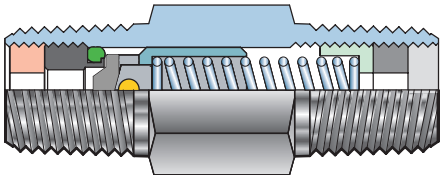
**VC Series**

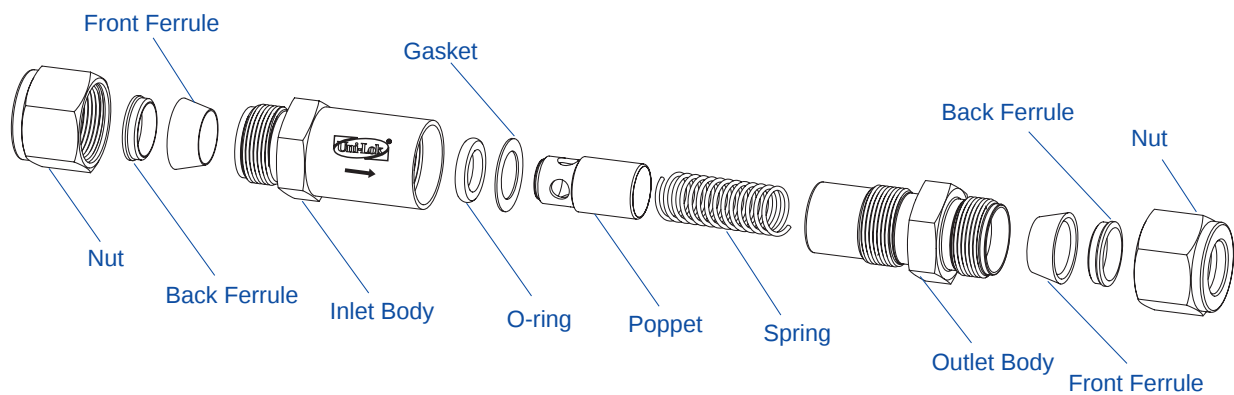
[www.unilok.com](http://www.unilok.com)



**UNILOK**

Features

| Valve Series |                                      |                                                                                      | Cracking Pressure | Maximum Working Pressure |
|--------------|--------------------------------------|--------------------------------------------------------------------------------------|-------------------|--------------------------|
| VC3          | General Purpose                      |    | Fixed             | 3000 psig<br>207 bar     |
| VC6          | High Pressure                        |    | Fixed             | 6000 psig<br>413 bar     |
| VC3C         | Compact One Piece                    |   | Fixed             | 3000 psig<br>207 bar     |
| VC3CA        | Compact Adjustable Cracking Pressure |  | Adjustable        | 3000 psig<br>207 bar     |



## Cleaning

Uni-Lok valves are free from machine oils, loose particles and grease throughout the close cleaning process.

## Testing

Every check valve is 100% factory tested with nitrogen for cracking and reseal performance.

The special cleaning for high purity application is available upon request.

## Important Notification

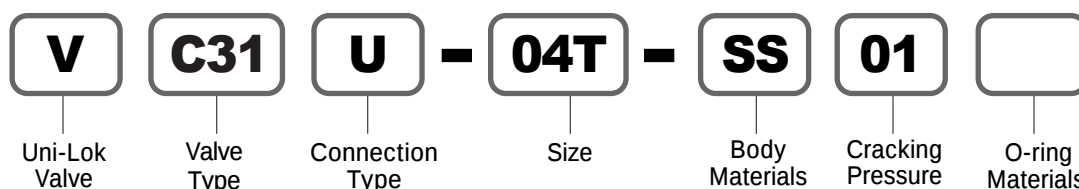
Proper installation, materials compatibility, operation and maintenance of these valves are the responsibility of the user. The total system design must be taken into consideration to ensure optimal performance and safety.

Uni-Lok check valves are designed for directional flow control only.

## How To Order

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

**Example :** The following part number, **VC31U-04T-SS-01** is designated for VC3 series check valve with both 1/4", Uni-Lok tube fitting, 1psig cracking pressure, 316SS.



| Valve Type |                                |
|------------|--------------------------------|
| C3         | 3000psig Fixed CP              |
| C6         | 6000psig Fixed CP              |
| C3C        | 3000psig Compact Fixed CP      |
| C3CA       | 3000psig Compact Adjustable CP |

CP-Cracking Pressure

| Connection Type |                          |
|-----------------|--------------------------|
| U               | Uni-Lok Tube Fitting     |
| F               | Female NPT or ISO7/1(PT) |
| M               | Male NPT or ISO7/1(PT)   |
| C               | UCR                      |

UCR-Metal Face Seal End

| Body Materials |           |
|----------------|-----------|
| SS             | 316SS     |
| BS             | Brass     |
| MO             | Alloy 400 |

| Connection Type                        |      |      |      |      |       |       |       |
|----------------------------------------|------|------|------|------|-------|-------|-------|
| Fractional(Inch) Tube O.D. Designation |      |      |      |      |       |       |       |
| Tube O.D.                              | inch | 1/8  | 1/4  | 3/8  | 1/2   | 3/4   | 1     |
|                                        | mm   | 3.17 | 6.35 | 9.52 | 12.70 | 19.05 | 25.40 |
| Designator                             |      | 02T  | 04T  | 06T  | 08T   | 12T   | 16T   |

| Metric Tube O.D. Designation |    |      |      |      |      |      |      |
|------------------------------|----|------|------|------|------|------|------|
| Tube O.D.                    | mm | 3    | 6    | 8    | 10   | 12   | 25   |
| Designator                   |    | M03T | M06T | M08T | M10T | M12T | M25T |

| Pipe Size Designation (NPT or ISO7/1-PT) |       |       |       |       |       |       |
|------------------------------------------|-------|-------|-------|-------|-------|-------|
| Pipe Size                                | 1/8   | 1/4   | 3/8   | 1/2   | 3/4   | 1     |
| Designator                               | 02N/R | 04N/R | 06N/R | 08N/R | 12N/R | 16N/R |

| UCR Size Designation |     |     |
|----------------------|-----|-----|
| Tube Size            | 1/4 | 1/2 |
| Designator           | 04C | 08C |

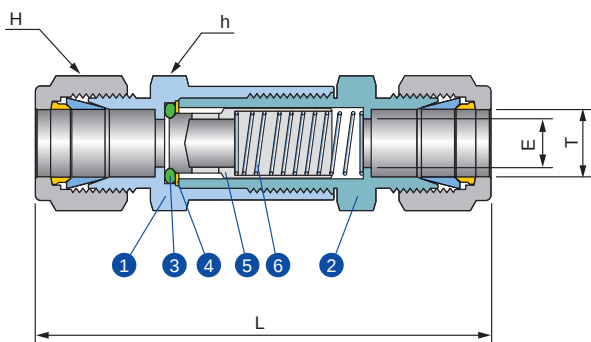
| Cracking Pressure |          |
|-------------------|----------|
| 1/3               | 1/3 psig |
| 01                | 1 psig   |
| 03                | 3 psig   |
| 10                | 10 psig  |
| 25                | 25 psig  |
| 100               | 100 psig |

| O-ring Materials |                    |
|------------------|--------------------|
| None             | Viton              |
| E                | Ethylene Propylene |
| N                | Buna N             |
| P                | Neoprene           |
| K                | Kalrez             |

Seal kits and spring kits are available for retrofit or maintenance. Contact Uni-Lok local distributors.

## VC3 series

### (3000 psig, Fixed Cracking Pressure)



### Materials of Construction

| No.           | Description | Materials |       |
|---------------|-------------|-----------|-------|
| Body Material |             | 316SS     | Brass |
| 1             | Inlet Body  | 316SS     | Brass |
| 2             | Outlet Body | 316SS     | Brass |
| 3             | O-ring      | Viton     | NBR   |
| 4             | Gasket      | 304SS     |       |
| 5             | Poppet      | 316SS     | Brass |
| 6             | Spring      | 302SS     |       |

Poppet - Silicone based lubricant

Inlet Body - Molybdenum dry film lubricant

### Ordering Information & Dimensions

| Part Number |            | End Connection  |              | Cv   | Dimensions (mm) |       |
|-------------|------------|-----------------|--------------|------|-----------------|-------|
|             |            | Inlet           | Outlet       |      | L               | h     |
| VC31        | U-02T-     | 1/8" Uni-Lok    |              | 0.16 | 54.5            | 15.87 |
|             | U-04T-     | 1/4" Uni-Lok    |              | 0.47 | 59.0            |       |
|             | U-M06T-    | 6mm Uni-Lok     |              |      | 59.0            |       |
|             | F-02N-     | 1/8" Female NPT |              |      | 46.5            |       |
|             | M-02N-     | 1/8" Male NPT   |              |      | 47.3            |       |
|             | M-04N-     | 1/4" Male NPT   |              |      | 52.6            |       |
|             | MU-04N04T- | 1/4" Male NPT   | 1/4" Uni-Lok |      | 56.0            |       |
| VC32        | U-06T-     | 3/8" Uni-Lok    |              | 1.48 | 80.4            | 19.05 |
|             | U-M10T-    | 10mm Uni-Lok    |              |      | 81.7            |       |
|             | F-04N-     | 1/4" Female NPT |              |      | 54.5            |       |
|             | M-06N-     | 3/8" Male NPT   |              |      | 70.6            |       |
| VC33        | U-08T-     | 1/2" Uni-Lok    |              | 1.70 | 85.6            | 22.22 |
|             | U-M12T-    | 12mm Uni-Lok    |              | 5.20 | 86.0            |       |
|             | F-06N-     | 3/8" Female NPT |              |      | 76.2            |       |
|             | M-08N-     | 1/2" Male NPT   |              |      | 83.0            |       |
| VC34        | U-10T-     | 5/8" Uni-Lok    |              | 2.60 | 88.0            | 28.58 |
|             | F-08N-     | 1/2" Female NPT |              |      | 91.2            |       |
| VC35        | U-12T-     | 3/4" Uni-Lok    |              | 5.20 | 91.8            | 31.75 |
|             | F-12N-     | 3/4" Female NPT |              |      | 87.5            |       |
|             | M-12N-     | 3/4" Male NPT   |              |      | 86.0            |       |
| VC36        | U-16T-     | 1" Uni-Lok      |              | 8.00 | 106.3           | 34.93 |
|             | F-16N-     | 1" Female NPT   |              |      | 123.0           |       |
|             | M-16N-     | 1" Male NPT     |              |      | 115.0           | 41.28 |

ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VC series valves. Add "R" as a suffix instead of "N".

### Pressure Rating at 70°F(21°C)

| Series               | 316SS |     | Brass |     |
|----------------------|-------|-----|-------|-----|
|                      | psig  | bar | psig  | bar |
| VC31                 | 3000  | 207 | 3000  | 207 |
| VC32<br>VC33         | 3000  | 207 | 3000  | 207 |
| VC34<br>VC35<br>VC36 | 2000  | 138 | 1500  | 103 |

### Cracking - Reseal Pressure

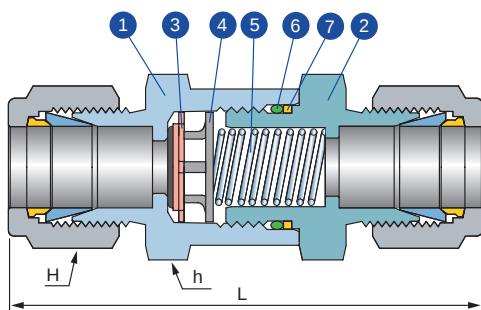
(psig)

| Nominal Cracking Pressure | Cracking Pressure Range |      | Reseal Pressure |
|---------------------------|-------------------------|------|-----------------|
|                           | Min.                    | Max. |                 |
| 1/3                       | 0                       | 3    | up to 6         |
| 1                         | 0                       | 4    | up to 5         |
| 3                         | 2                       | 7    | up to 4         |
| 10                        | 7                       | 15   | 3               |
| 25                        | 20                      | 30   | 17              |
| 50                        | 40                      | 60   | 35              |
| 75                        | 60                      | 90   | 53              |
| 100                       | 80                      | 120  | 70              |

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

# VC6 series

## (6000 psig, Fixed Cracking Pressure)



### Materials of Construction

| No. | Description | Materials          |
|-----|-------------|--------------------|
| 1   | Inlet Body  | 316SS              |
| 2   | Outlet Body | 316SS              |
| 3   | Poppet      | Viton bonded 316SS |
| 4   | Poppet Stop | 316SS              |
| 5   | Spring      | 302SS              |
| 6   | O-ring      | Viton              |
| 7   | Backup Ring | PTFE               |

### Ordering Information & Dimensions

| Part Number | End Connection |                 | Cv   | Dimensions (mm) |       |
|-------------|----------------|-----------------|------|-----------------|-------|
|             | Inlet          | Outlet          |      | L               | h     |
| VC61        | U-02T-         | 1/8" Uni-Lok    | 0.67 | 57.7            | 17.46 |
|             | U-04T-         | 1/4" Uni-Lok    |      | 61.7            |       |
|             | U-M06T-        | 6mm Uni-Lok     |      | 61.7            |       |
|             | M-02N-         | 1/8" Male NPT   |      | 44.8            |       |
|             | M-04N-         | 1/4" Male NPT   |      | 54.8            |       |
| VC62        | U-06T-         | 3/8" Uni-Lok    | 1.80 | 69.9            | 25.40 |
|             | U-08T-         | 1/2" Uni-Lok    |      | 75.2            |       |
|             | U-M08T-        | 8mm Uni-Lok     |      | 68.6            |       |
|             | U-M10T-        | 10mm Uni-Lok    |      | 71.1            |       |
|             | U-M12T-        | 12mm Uni-Lok    |      | 75.2            |       |
|             | F-06N-         | 3/8" Female NPT |      | 64.8            | 26.98 |
|             | F-08N-         | 1/2" Female NPT |      | 77.0            |       |
|             | M-12N-         | 3/4" Male NPT   |      | 59.2            |       |
|             | M-16N-         | 1" Male NPT     |      | 69.2            |       |
| VC63        | U-12T-         | 3/4" Uni-Lok    | 4.70 | 110.0           | 31.75 |
|             | U-16T-         | 1" Uni-Lok      |      | 120.0           | 34.92 |
|             | U-M25T-        | 25mm Uni-Lok    |      | 120.0           |       |
|             | F-12N-         | 3/4" Female NPT |      | 104.0           | 31.75 |
|             | F-16N-         | 1" Female NPT   |      | 123.0           | 34.92 |

ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VC series valves. Add "R" as a suffix instead of "N".

### Pressure Rating at 70°F(21°C)

| Series       | 316SS |     |
|--------------|-------|-----|
|              | psig  | bar |
| VC61<br>VC62 | 6000  | 413 |
| VC63         | 5000  | 344 |

### O-ring Seal Temperature Rating

| O-ring Materials   | Temperature Rating |           |
|--------------------|--------------------|-----------|
|                    | °C                 | °F        |
| Viton              | -28 ~ 204          | -18 ~ 400 |
| Ethylene Propylene | -45 ~ 135          | -49 ~ 275 |
| Buna N             | -20 ~ 105          | -4 ~ 221  |
| Neoprene           | -40 ~ 121          | -40 ~ 250 |
| Kalrez             | -20 ~ 315          | -22 ~ 599 |

### CNG Application

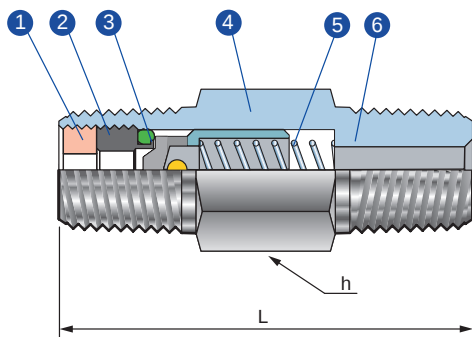
Uni-Lok VC6 series, high pressure check valves are available for CNG application with CNG compatible HNBR O-ring.

To order, add -H to the end of part number.

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

## VC3C series

(3000 psig, Compact, Fixed Cracking Pressure)



### Materials of Construction

| No. | Description       | Materials |
|-----|-------------------|-----------|
| 1   | Insert Lock Screw | 316SS     |
| 2   | Insert            | 316SS     |
| 3   | O-ring            | Viton     |
| 4   | Poppet            | 316SS     |
| 5   | Spring            | 302SS     |
| 6   | Body              | 316SS     |

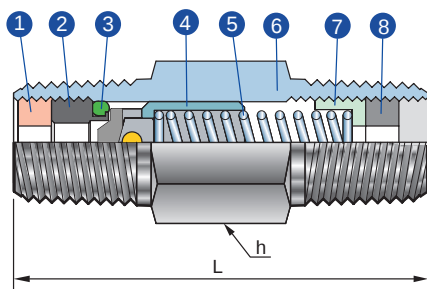
### Ordering Information & Dimensions

| Part Number | End Connection |                               | Cv   | Dimensions (mm) |       |
|-------------|----------------|-------------------------------|------|-----------------|-------|
|             | Inlet          | Outlet                        |      | L               | h     |
| VC3C1       | F-04N-         | 1/4" Female NPT               | 0.35 | 61.0            | 19.05 |
|             | M-04N-         | 1/4" Male NPT                 |      | 41.0            | 14.28 |
|             | MF-04N-        | 1/4" Male NPT 1/4" Female NPT |      | 44.0            | 19.05 |
|             | FM-04N-        | 1/4" Female NPT 1/4" Male NPT |      | 58.0            |       |
| VC3C2       | F-08N-         | 1/2" Female NPT               | 1.20 | 94.0            | 26.98 |
|             | M-08N-         | 1/2" Male NPT                 |      | 58.0            | 22.22 |
|             | MF-08N-        | 1/2" Male NPT 1/2" Female NPT |      | 72.0            | 26.98 |

ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VC series valves. Add "R" as a suffix instead of "N".

## VC3CA series

(3000 psig, Compact, Adjustable Cracking Pressure)



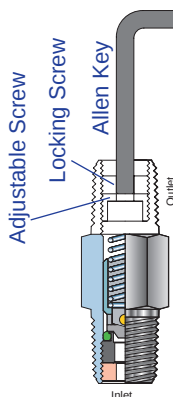
### Materials of Construction

| No. | Description       | Materials |
|-----|-------------------|-----------|
| 1   | Insert Lock Screw | 316SS     |
| 2   | Insert            | 316SS     |
| 3   | O-ring            | Viton     |
| 4   | Poppet            | 316SS     |
| 5   | Spring            | 302SS     |
| 6   | Body              | 316SS     |
| 7   | Adjustable Screw  | 316SS     |
| 8   | Locking Screw     | 316SS     |

### Ordering Information & Dimensions

| Part Number | End Connection |                 | Cv   | Dimensions (mm) |       |
|-------------|----------------|-----------------|------|-----------------|-------|
|             | Inlet          | Outlet          |      | L               | h     |
| VC3CA1      | F-04N-         | 1/4" Female NPT | 0.35 | 75.7            | 19.05 |
|             | M-04N-         | 1/4" Male NPT   |      | 41.1            | 14.28 |
| VC3CA2      | M-08N-         | 1/2" Male NPT   | 1.20 | 65.0            | 22.22 |

### Adjustment of Cracking Pressure



1. Unscrew "locking screw" counter-clockwise.
2. Slide "allen key" up to "adjustable screw" position.
3. Turn "adjustable screw";

To decrease  
cracking pressure



To increase  
cracking pressure

4. Move out "allen key" up to "locking screw" position.
5. Turn "allen key" clockwise.

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

# Uni-Lok Line up

## Instrumentation

### Fittings



- Tube Fittings
- PTFE Fittings
- Hose & Push-On Connectors
- Precision Pipe Fittings
- Fusible Connectors
- Dielectric Fittings

### Valves



- VB1 series
  - VB2 series
  - VB3 series
  - VB6B series
  - VB6F series
  - VB6T series
  - VP series
  - VN5 series
  - VN6 series
  - VU6 series
  - VMT series
  - VM series
  - VG series
  - VL series
  - VD series
  - VC series
  - VR series
  - VE series
  - VF series
  - VPR series
  - VBR series
- Precision & Clean Ball Valves  
Swing-Out Ball Valves  
Instrumentation Ball Valves  
High Pressure Bar Stock Ball Valves  
High Pressure Forged Ball Valves  
Trunnion Ball Valves  
Plug Valves
- Integral Bonnet Forged Needle Valves  
High Pressure Bar Stock Needle Valves  
Union Bonnet Valves  
Metering Valves
- Instrumentation Manifolds Valves  
Gauge & Gauge Root Valves  
Bleed Valves
- Double Block and Bleed Valves
- General & High Pressure Relief Valves  
Low & High Pressure Relief Valves  
Industrial Excess Flow Valves
- T & In-Line Filters  
Pressure Reducing Valves  
Back Pressure Regulators

### Others

- Seamless & Welded Tubing
- Condensate Pots

## UHP(Ultra High Purity)

### Fittings



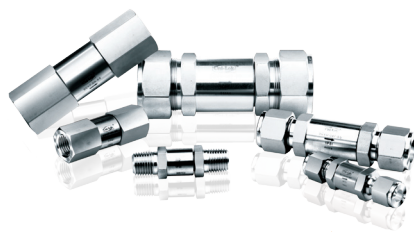
- Weld & Metal Face Seal Fittings
- Pipe & Tube Fittings
- Flanges
- Cylinder Connectors

### Valves



- VCD series
- VCB series
- VCC series
- Diaphragm Valves
- Bellows Valves
- Welded Check Valves

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