

Low Pressure High Flow Check Valves

CB Series

Introduction

CB Series Low Pressure High Flow Check Valves are engineered for low pressure and high flow bulk gas distribution applications. These valves are suitable for use with inert gases as well as most toxic gases, effectively preventing undesired reverse flow within the high purity system.



Features

- ⦿ Metal-to-metal seal between valve body and bonnet
- ⦿ Packless design eliminates particle contamination from packing wear
- ⦿ Integrated purge port on valve body for easy purging
- ⦿ Connection tube in customized length available
- ⦿ Low cracking pressure and high sensitivity
- ⦿ High flow capacity with a flow coefficient (Cv) of up to 165.5

Technical Data

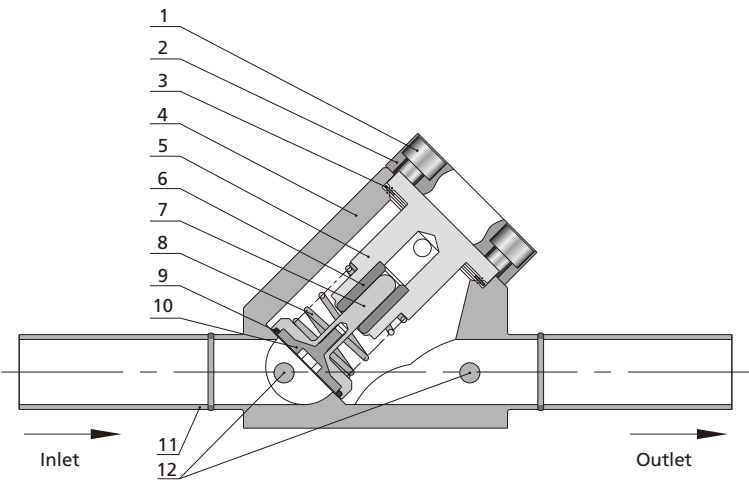
| Port Size | | 3/4" to 4" |
|---------------------------------|----------|--|
| Flow Coefficient (Cv) | | 10.96 ~ 165.5 |
| Working Pressure | | Vacuum to 250 psig (17.2 bar) |
| Working Temperature | | 32 ~ 250 °F (0 ~ 121 °C) |
| Cracking Pressure ^① | | ≤ 1.8 psig (0.12 bar) |
| Full Open Pressure ^② | | 4 ~ 12 psig (0.28 ~ 0.83 bar) |
| Reseal Pressure (Back Pressure) | | ≤ 5 psig (0.34 bar) |
| Leak Rate (Helium) | Internal | ≤ 1×10 ⁻⁸ std cm ³ /s |
| | External | Inboard ≤ 1×10 ⁻⁸ std cm ³ /s |
| | | Outboard ≤ 1×10 ⁻⁸ std cm ³ /s |

Note: ① For valves not actuated for a period of time, initial cracking may be higher than the set cracking pressure.
② Valves vary in their full open pressures. For more information, please contact FITOK.

Process Specification

| Item | Process Specification |
|--------------------------|--|
| Material | 316L SS |
| Wetted Surface Roughness | Ra 10 μin. (0.25 μm) |
| Polishing Process | Electropolished |
| Cleaning | Ultra high purity cleaning in continuously monitored ultrasonic cleaning system with deionized water |
| Assembly Environment | ISO Class 4 (FS 209E Class 10 equivalent) cleanroom |
| Packaging | Double bagged, inner bag packing in the cleanroom |

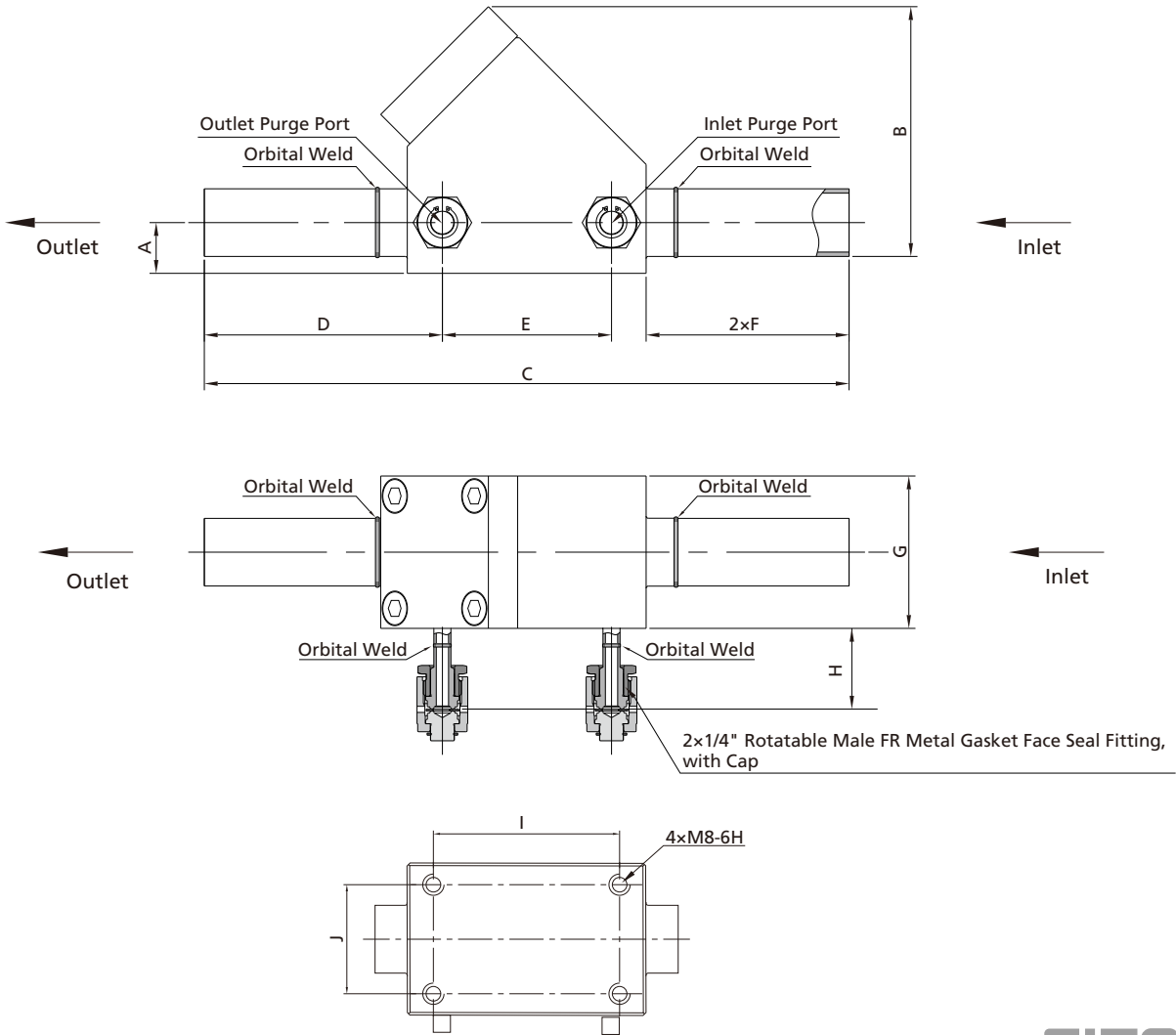
Major Materials of Construction



| Item | Component | Material/Specification |
|------|--------------|------------------------|
| 1 | Screw | Stainless Steel |
| 2 | Bonnet | 316L SS/ASTM A479 |
| 3 | Gasket | Nickel |
| 4 | Body | F316L SS/ASTM A182 |
| 5 | Stem | 316L SS/ASTM A479 |
| 6 | Piston Guide | PCTFE/ASTM D1430 |
| 7 | Piston | 316L SS/ASTM A479 |
| 8 | Spring | 302 SS/ASTM A313 |
| 9 | O-ring | FKM |
| 10 | Lock Nut | 316L SS/ASTM A479 |
| 11 | Welded Tube | 316L SS/ASTM A479 |
| 12 | Purge Ports | 316L SS/ASTM A479 |

Dimensions and Ordering Information

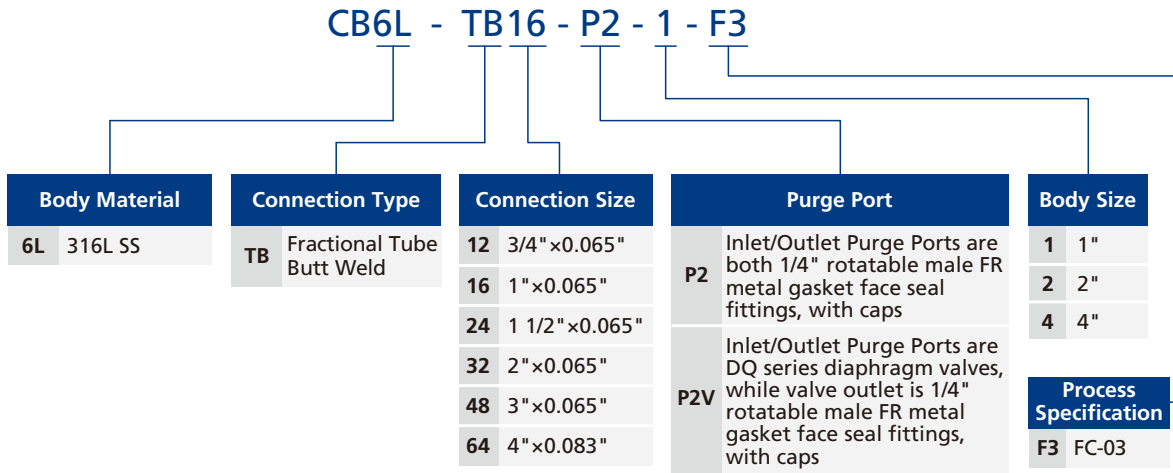
Dimensions, in inches (millimeters), are for reference only.



| Dimensions in. (mm) | | | | | | | | | | | | | | Cv | Full Open Pressure psig (bar) |
|-----------------------|------------------------------|----------------|-----------------|------------------|------------------|-----------------|-----------------|----------------|----------------|-----------------|----------------|-----------------|----------------|-------|----------------------------------|
| Basic Ordering Number | Connection Type and Size | A | B | C | D | E | F | G | H | I | J | | | | |
| CB□□-TB12-P2-1- | 3/4"×0.065" Tube Butt Weld | 0.75 (19.1) | 3.94 (100.1) | 11.55 (293.4) | 4.53 (115.1) | 2.5 (63.5) | 4.01 (101.9) | 2.25 (57.2) | 1.19 (30.3) | 2.75 (70.0) | 1.61 (41.0) | 10.96 | 12.0 (0.83) | | |
| CB□□-TB16-P2-1- | 1"×0.065" Tube Butt Weld | | | 9.53 (242.1) | 3.52 (89.4) | | 3.0 (76.2) | | | | | 15.21 | | | |
| CB□□-TB24-P2-1- | 1 1/2"×0.065" Tube Butt Weld | | | 0.79 (20.1) | 13.45 (341.6) | | 5.48 (139.2) | | | | | 4.96 (126) | | 16.73 | |
| CB□□-TB24-P2-2- | 1 1/2"×0.065" Tube Butt Weld | 1.25 (31.8) | 6.28 (159.5) | 15.42 (391.7) | 7.28 (185) | 4.25 (107.9) | 4.0 (101.6) | 3.38 (85.8) | 1.19 (30.3) | 3.94 (100.0) | 2.32 (59.0) | 42.43 | 6.0 (0.41) | | |
| CB□□-TB32-P2-2- | 2"×0.065" Tube Butt Weld | | | 13.5 (342.9) | 6.02 (152.9) | | | | | | | 51.26 | | | |
| CB□□-TB48-P2-4- | 3"×0.065" Tube Butt Weld | 2.12 (53.8) | 8.97 (227.8) | 25.62 (650.7) | 10.43 (264.9) | | 8.96 (227.5) | 5.12 (130) | | | | 6.02 (153.0) | 3.74 (95.0) | 158.8 | 4.0 (0.28) |
| CB□□-TB64-P2-4- | 4"×0.083" Tube Butt Weld | | | 17.9 (454.7) | 7.08 (179.9) | | 4.0 (101.6) | | | | | 8.19 (208.0) | 3.66 (93.0) | 165.5 | |

Note: Dimensions are for reference only and subject to change. For other dimensions, please contact FITOK or our authorized distributors.

Ordering Number Description



Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available. For any questions, Please contact FITOK Group or our authorized distributors.