SWING CHECK VALVE ∆ WAFTER TYPE ∆ SHORT PATTERN

ASME CLASS 150 ∆ CARBON STEEL & STAINLESS STEEL

MODELS: CV 12-CS
Body: Carbon Steel
Seat/Seal: Buna-N

CV 12-SS
Body: Stainless Steel
Seat/Seal: PTFE

FEATURES

◊ ROBUST DESIGN
This is a self-acting, non-return, single plate, wafer type swing check valve which provides high quality and reliability within a simplified construction. Available in both carbon steel and stainless steel.

◊ MINIMAL HEAD LOSS
The low inertia disc is designed to open and close under low differential pressure conditions. Also, the short pattern design and straight flow path minimize pressure drop across the valve.

◊ ECONOMICAL DESIGN
The low weight and short face-to-face dimensions provide an economical, space-saving solution. Additionally, flange gaskets are typically not required due to the built-in, body seal o-rings.

◊ RESILIENT SOFT SEATS
Soft seats (PTFE or Buna) combined with a gravity assisted disc help to ensure a positive shutoff which creates a bubble tight seal that meets or exceeds API 598 leakage requirements.

◊ VERSATILE DESIGN
This valve can be installed between weld neck or slip-on type companion flanges of different standards. This valve cannot be installed in a vertical pipeline with downward flow.

◊ FUGITIVE EMISSION DESIGN
The one-piece body design eliminates potential leak paths to the environment so there are no body emissions.

PRESSURE/TEMPERATURE RATING (1)
CS - ASTM A515 GR. 70 - CLASS 150
WOG (Non-shock): 285 PSI @ 100 °F

PRESSURE/TEMPERATURE RATING (1)
SS - ASTM A240 GR. 316 - CLASS 150
WOG (Non-shock): 275 PSI @ 100 °F

SEAT AND BODY SEAL (O-RING) (1)
TEMPERATURE RANGE
PTFE: -100 ~ 400 °F
BUNA-N: -20 ~ 250 °F

1. The above listed temperatures are theoretical and may vary during actual operating conditions.

MARKETS: OIL AND GAS PRODUCTION, GENERAL INDUSTRY, CHEMICAL, & PETROCHEMICAL

SERVICE: This valve is intended for low flow service that is steady, clean (no abrasives or solids), and non-pulsating. Flow rate must not exceed for liquids: 15 ft/sec

PTFE PROPERTIES: Good for most chemical environments. Offers excellent tear, abrasive, chemical, acid, and alkali resistance. Not recommended for high pressure steam or large temperature variations.

BUNA-N PROPERTIES: Most widely used elastomer. Good for most petroleum oils and fluids, silicone greases and oils, and cold water. Excellent compression set, tear, and abrasion resistance. Poor weather resistance and moderate heat resistance. Not recommended for severe ozone-resistant applications.

The above data represents common market and service applications. No representation or guarantee, expressed or implied, is given due to the numerous variations of concentrations, temperatures and flow conditions that may occur during actual service.
## BILL OF MATERIALS (1)

<table>
<thead>
<tr>
<th>No.</th>
<th>PART</th>
<th>CV 12-CS</th>
<th>CV 12-SS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Carbon Steel</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>2</td>
<td>Disc</td>
<td>Stainless Steel</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>3</td>
<td>Seat (2)</td>
<td>Buna-N</td>
<td>PTFE</td>
</tr>
<tr>
<td>4</td>
<td>Body Seal (2)</td>
<td>Buna-N</td>
<td>PTFE</td>
</tr>
<tr>
<td>5</td>
<td>Bolt</td>
<td>Stainless Steel</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>6</td>
<td>Eye Bolt</td>
<td>Chrome Plated</td>
<td>Chrome Plated</td>
</tr>
</tbody>
</table>

1. Bill of Materials represents standard materials. Equivalent or better materials may be substituted at the manufacturer’s discretion.
2. Denotes recommended spare parts.

## DIMENSIONS AND PERFORMANCE DATA (1)

| SIZE | in | 2 | 2 1/2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 |
|------|----|---|-------|---|---|---|---|---|----|----|----|----|----|----|----|----|
| A DIMENSION | FACE TO FACE (2) | | | | | | | | | | | | | | |
| in | 0.55 | 0.55 | 0.55 | 0.71 | 0.71 | 0.79 | 0.87 | 1.02 | 1.26 | 1.50 | 1.73 | 1.97 | 2.21 | 2.44 |
| mm | 14 | 14 | 14 | 18 | 18 | 20 | 22 | 26 | 32 | 40 | 44 | 50 | 56 | 62 |
| B DIMENSION | OVERALL DIAMETER | | | | | | | | | | | | | | |
| mm | 105 | 124 | 137 | 175 | 197 | 222 | 280 | 340 | 410 | 451 | 515 | 550 | 606 | 718 |
| C DIMENSION | INLET DIAMETER | | | | | | | | | | | | | | |
| mm | 32 | 40 | 54 | 70 | 92 | 112 | 154 | 200 | 240 | 269 | 308 | 360 | 405 | 486 |
| ASSEMBLED WEIGHT | | | | | | | | | | | | | | |
| lb | 2.5 | 3.5 | 6.0 | 7.0 | 8.5 | 10.0 | 22.0 | 33.5 | 58.0 | 93.5 | 146.5 | 195.0 | 232.0 | 352.0 |
| kg | 1.1 | 1.6 | 2.7 | 3.2 | 3.9 | 4.5 | 10.0 | 15.2 | 26.3 | 42.4 | 66.5 | 88.5 | 105.1 | 159.5 |

Flow Coefficient: $C_v$

| psi | ≤ 0.25 | ≤ 0.25 | ≤ 0.25 | ≤ 0.25 | ≤ 0.25 | ≤ 0.25 | ≤ 0.25 | ≤ 0.25 | ≤ 0.25 | ≤ 0.25 | ≤ 0.25 | ≤ 0.25 | ≤ 0.25 | ≤ 0.25 |

Cracking Pressure (3) psi:

- ≤ 0.25 for all sizes

## PRESSURE-TEMPERATURE RATINGS (1)

<table>
<thead>
<tr>
<th>Temperature (°F)</th>
<th>Stainless Steel Body</th>
<th>Carbon Steel Body</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000 °F Max Temp</td>
<td>800 °F Max Temp</td>
<td>700 °F Max Temp</td>
</tr>
<tr>
<td>Buna-N Seat</td>
<td>PTFE Seat</td>
<td>Stainless Steel Body</td>
</tr>
</tbody>
</table>

Source: ASME B16.34-1996

1. Dimensions, weights, and flow coefficients are provided for reference only. When required, always request certified drawings.
2. Face to face values have a tolerance of ±0.06 in (±2.0 mm) for sizes 10" and smaller and a tolerance of ±0.12 in (±3.0 mm) for sizes 12" and larger.
3. Cracking pressure is for horizontal installations only. For vertical installations, please consult factory. Valve can not be installed in the vertical position with downward flow.

## ORDERING CODE

- **Model Number**
- **Description**

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<td>Stainless Steel Body, PTFE Seat</td>
</tr>
</tbody>
</table>

## REFERENCED STANDARDS & CODES

### CODE DESCRIPTION
- API 598 B16.5 Valve Testing
- ASME B16.34 Valves - Flanged, Threaded, & Welding End
- ASME 150 Flange Standard Conformity

## PRESSURE/TEMPERATURE RATING

**ASME CLASS 150**

- **A240 Gr. 316**
- **A515 Gr. 70**

**WOG (Non-shock)**

- 275 PSI @ 100 °F
- 285 PSI @ 100 °F

### SEAT/BODY SEAL TEMPERATURE RANGE (1)

- **Seat**
- **Temperature**
  - PTFE: -100 - 400 °F
  - Buna-N: -20 - 250 °F

1. The listed pressure and temperature ratings for the valve’s body, seat, and body seal are theoretical and may vary during actual operating conditions.

## ADDITIONAL DESIGN & TECHNICAL NOTES

Short pattern check valves feature a reduced port and eccentric opening which allow the disc to open into the connecting pipe. However, given the short face-to-face, the disc will not fully open due to interference with the connecting pipe.

Although this conforms to API specifications, this may be unsuitable for certain types applications. Consult factory for more specific application information.

Titan FCI makes every effort to ensure the information presented on our literature accurately reflects exact product specifications. However, as product changes occur, there may be short-term differences between actual product specifications and the information contained within our literature. Titan FCI reserves the right to make design and specification changes to improve our products without prior notification. When required, request certified drawings.