



TITAN FLOW CONTROL, INC.

## CHECK VALVE ♦ WAFER TYPE ♦ DUAL DISC

### ANSI CLASS 900 ♦ CARBON AND STAINLESS STEEL

MODEL: **CV 47-CS**  
(CARBON STEEL)

**CV 47-SS**  
(STAINLESS STEEL)

6" CV 47-CS



## FEATURES

SIZE RANGE: 2" ~ 24"  
LARGER SIZES AVAILABLE

- ♦ **COST EFFICIENT DESIGN**  
LOW WEIGHT AND SHORT LAYING LENGTH PRODUCE SAVINGS IN INITIAL COST, SPACE REQUIREMENTS, AND INSTALLATION WHEN COMPARED TO FULL-BODY, SWING-TYPE CHECK VALVES.
- ♦ **MINIMAL HEAD LOSS**  
CONTOUR OF BODY PROVIDES A SHORT AND STRAIGHT FLOW PATH THAT GENERATES VERY LITTLE TURBULENCE. ADDITIONALLY, THE SPRING-LOADED DISCS ARE DESIGNED WITH VERY LOW CRACKING PRESSURE WHICH REDUCES THE AMOUNT OF ENERGY REQUIRED TO OPEN THE VALVE.
- ♦ **QUICK CLOSURE TO REDUCE WATER HAMMER**  
SHUT-OFF IS ACHIEVED VIA THE FULLY AUTOMATIC, SPRING-ASSISTED DISCS THAT CLOSE NEAR ZERO FLOW VELOCITY. THE LIGHTWEIGHT, SPLIT DISC DESIGN CREATES A POSITIVE SHUTOFF PRIOR TO FLOW REVERSAL AND HELPS TO KEEP SLAMMING AND SURGES TO A MINIMUM.
- ♦ **DESIGNED FOR LONG SERVICE LIFE**  
THE SPRING AND DISCS ARE DESIGNED TO ALLOW THE DISCS TO LIFT LINEARLY BEFORE PIVOTING TO AVOID THE DISC HEAL FROM SCRUBBING THE SEALING SURFACE. ALSO, DISCS ARE EQUIPPED WITH CAST-IN SHOCK BUMPERS THAT HELP TO REDUCE WEAR AND TEAR ON INTERNAL COMPONENTS.
- ♦ **FUGITIVE EMISSION DESIGN**  
THE RETAINER-LESS BODY DESIGN ELIMINATES POTENTIAL LEAK PATHS TO THE ENVIRONMENT SO THERE ARE NO BODY EMISSIONS.
- ♦ **RESILIENT AND METAL SEATS**  
BOARD, LAPPED SEALING SURFACE (METAL) MEETS OR EXCEEDS API 598 TEST REQUIREMENTS. OPTIONAL RESILIENT SEATS (VITON/BUNA) ENSURE A BUBBLE TIGHT SEAL.

## TECHNICAL

PRESSURE/ TEMPERATURE RATING <sup>(1)</sup>  
CS - ASTM A216 GR. WCB - CLASS 900

WOG (Non-shock): 2220 PSI @ 100 °F

PRESSURE/ TEMPERATURE RATING  
SS - ASTM A351 GR. CF8M - CLASS 900

WOG (Non-shock): 2160 PSI @ 100 °F

SEAT MATERIAL  
TEMPERATURE RANGE

METAL: -325 ~ 1500 °F  
VITON: -40 ~ 400 °F  
BUNA-N: -20 ~ 250 °F

SPRING MATERIAL  
TEMPERATURE MAXIMUM

INCONEL X-750: 1000 °F

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

## APPLICATIONS

**MARKETS:** WATER & WASTEWATER, PULP & PAPER, CHEMICAL & PETROCHEMICAL, POWER, PETROLEUM AND OIL & GAS

**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.

**VITON PROPERTIES:** OFFERS A BROAD RANGE OF CHEMICAL RESISTANCE AND EXCELLENT HEAT RESISTANCE. GOOD MECHANICAL PROPERTIES AND COMPRESSION SET RESISTANCE. OFTEN USED IN APPLICATIONS WHERE NOTHING ELSE WILL WORK. FAIR LOW TEMPERATURE RESISTANCE AND LIMITED HOT-WATER RESISTANCE AND SHRINKAGE.

*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.*

**TITAN FLOW CONTROL, INC.**  
YOUR PIPELINE TO THE FUTURE!

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**CHECK VALVE • WAFER TYPE • DUAL DISC**

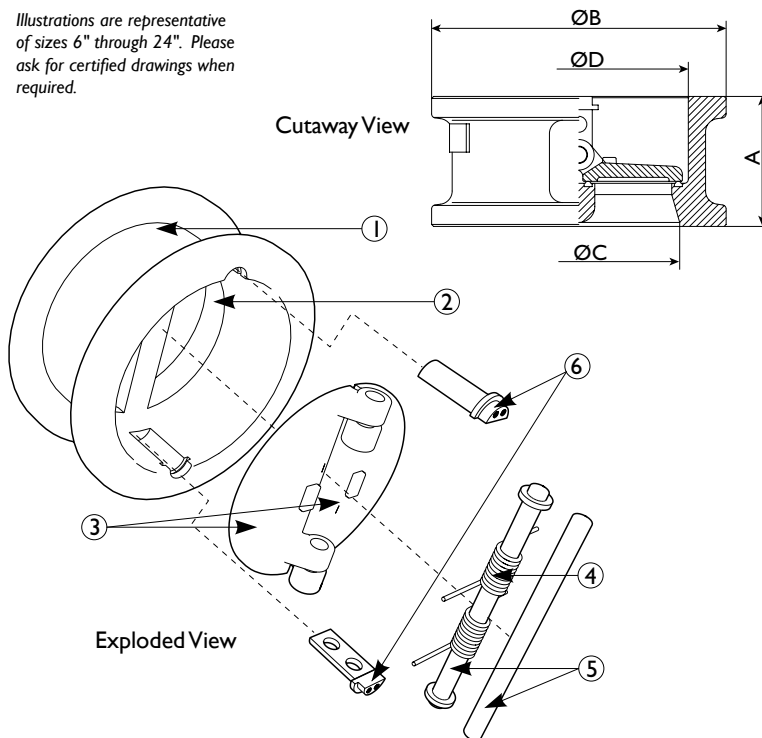
**MODEL: CV 47-CS (Carbon Steel)  
CV 47-SS (Stainless Steel)**

ANSI Class  
900

**BILL OF MATERIALS (1)**

| No. | PART        | CV 47-CS                         | CV 47-SS                         |
|-----|-------------|----------------------------------|----------------------------------|
| 1   | Body        | Carbon Steel (4)<br>A216 Gr.WCB  | Stainless Steel<br>A351 Gr. CF8M |
| 2   | Seat (2)    | Metal (5), Buna-N                | Metal, Viton                     |
| 3   | Disc (2)    | Stainless Steel<br>A351 Gr. CF8M | Stainless Steel<br>A351 Gr. CF8M |
| 4   | Spring (2)  | Inconel X-750                    | Inconel X-750                    |
| 5   | Shaft       | Stainless Steel<br>A276 Gr. 316  | Stainless Steel<br>A276 Gr. 316  |
| 6   | Pin Cap (3) | Stainless Steel<br>A276 Gr. 316  | Stainless Steel<br>A276 Gr. 316  |

Illustrations are representative of sizes 6" through 24". Please ask for certified drawings when required.



1. Equivalent or better materials may be substituted at the manufacturer's discretion.
2. Denotes recommended spare parts.
3. Pin Cap is only on sizes 6" through 24".
4. Carbon Steel bodies are epoxy painted.
5. Metal seat has stainless steel inlay.

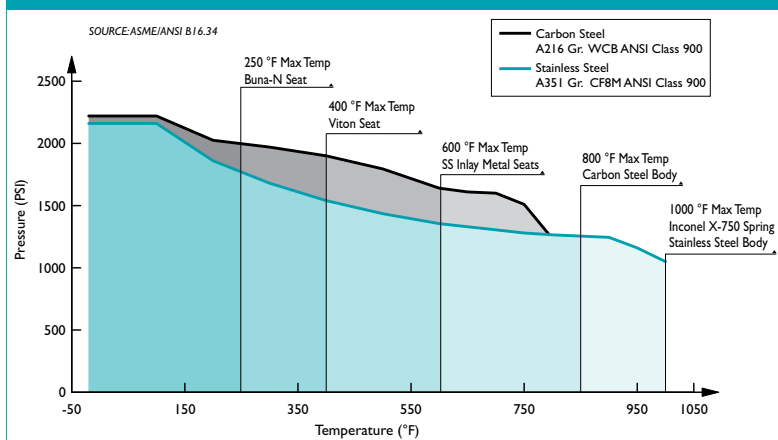
**REFERENCED STANDARDS & CODES**

| CODE         | DESCRIPTION                        |
|--------------|------------------------------------|
| ANSI/API 594 | Check Valve Design and Manufacture |
| API 598      | Valve Inspection and Testing       |
| API 6D       | Pipeline Valves                    |

**DIMENSIONS AND PERFORMANCE DATA (1)**

| SIZE                                    | in             | 2     | 2 1/2 | 3     | 4     | 5     | 6     | 8     | 10     | 12     | 14     | 16     | 18     | 20     | 24     |
|---|----------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
|   | mm             | 50    | 65    | 80    | 100   | 125   | 150   | 200   | 250    | 300    | 350    | 400    | 450    | 500    | 600    |
| <b>A DIMENSION</b><br>FACE TO FACE      | in             | 2.75  | 3.25  | 3.25  | 4.00  | C/F   | 6.25  | 8.125 | 9.50   | 11.50  | 14.00  | 15.125 | 17.75  | 17.75  | 19.50  |
|   | mm             | 70    | 83    | 83    | 102   | C/F   | 159   | 206   | 241    | 292    | 356    | 384    | 451    | 451    | 495    |
| <b>ØB DIMENSION</b><br>OVERALL DIAMETER | in             | 5.50  | 6.50  | 6.625 | 8.062 | C/F   | 11.25 | 14.00 | 17.00  | 19.50  | 20.50  | 22.50  | 25.062 | 27.375 | 32.875 |
|   | mm             | 140   | 165   | 168   | 205   | C/F   | 286   | 356   | 432    | 495    | 520    | 572    | 636    | 696    | 835    |
| <b>ØC DIMENSION</b><br>INLET DIAMETER   | in             | 2.00  | C/F   | 3.00  | 3.875 | C/F   | 5.875 | 7.875 | 9.375  | 11.812 | 12.812 | 14.937 | 16.75  | 18.70  | 22.437 |
|   | mm             | 50    | C/F   | 76    | 98    | C/F   | 150   | 200   | 238    | 300    | 325    | 380    | 425    | 475    | 570    |
| <b>ØD DIMENSION</b><br>OUTLET DIAMETER  | in             | 2.187 | C/F   | 3.25  | 4.25  | C/F   | 6.312 | 8.25  | 10.062 | 11.812 | 12.812 | 14.937 | 16.75  | 18.687 | 22.437 |
|   | mm             | 55    | C/F   | 82    | 108   | C/F   | 160   | 210   | 255    | 300    | 325    | 380    | 425    | 475    | 570    |
| <b>ASSEMBLED WEIGHT</b>                 | lb             | 13    | C/F   | 22    | 38    | C/F   | 178   | 300   | 465    | 655    | 875    | 1170   | 1322   | 1390   | 2650   |
|   | kg             | 6     | C/F   | 10    | 17    | C/F   | 81    | 136   | 211    | 297    | 397    | 531    | 600    | 630    | 1202   |
| Flow Coefficient                        | C <sub>v</sub> | 40    | 80    | 120   | 190   | 380   | 500   | 1000  | 1500   | 1900   | 2900   | 4500   | 7000   | 9000   | 10800  |
| Cracking Pressure (2)                   | psi            | ≤ .25 | ≤ .25 | ≤ .25 | ≤ .25 | ≤ .25 | ≤ .25 | ≤ .25 | ≤ .25  | ≤ .25  | ≤ .25  | ≤ .25  | ≤ .25  | ≤ .25  | ≤ .25  |

**PRESSURE - TEMPERATURE RATINGS (1)**



1. The above chart displays the pressure-temperature ratings for the valve's body material per ASME B16.34-1996. Max temperature limits have been added for seat and spring materials.

1. Dimensions and weights are for reference only. When required, request certified drawings.
2. Cracking pressure is for horizontal installations only. For vertical installations, please consult factory.

**PRESSURE - TEMPERATURE RATING**

| ANSI CLASS 900   | A216 Gr.WCB       | A351 Gr. CF8M     |
|------------------|-------------------|-------------------|
| WOG (Non-shock): | 2220 PSI @ 100 °F | 2160 PSI @ 100 °F |

**SEAT AND SPRING TEMPERATURE RATING**

| Seat Material | Range          | Spring Material | Max     |
|---------------|----------------|-----------------|---------|
| VITON:        | -40 ~ 400 °F   | INCONEL X-750:  | 1000 °F |
| BUNA-N:       | -20 ~ 250 °F   |                 |         |
| METAL:        | -325 ~ 1500 °F |                 |         |

**Additional Design & Technical Notes:**

- The CV 47 has a fugitive emission design. This retainer-less body design eliminates potential leak paths to the environment so there are no body emissions.