



TITAN FLOW CONTROL, INC.

## SILENT CHECK VALVE ♦ GLOBE TYPE ♦ CENTER GUIDED

### ANSI CLASS 150 ♦ DUCTILE IRON ♦ FLANGED ENDS FLAT FACE

# MODEL: CV 50-DI

Body: Ductile Iron

Trim: Stainless Steel &amp; Bronze

PATENT-PENDING  
DESIGN WITH INTEGRAL  
STRAIGHTENING  
VANES



## FEATURES

SIZE RANGE: 2" ~ 24"

LARGER SIZES AVAILABLE

### ◆ DESIGNED FOR LONG SERVICE LIFE

NEWLY DESIGNED CV50'S HAVE STRAIGHTENING VANES THAT REDUCE TURBULENCE IN INCOMING FLOW, THUS MINIMIZING NOISE, VIBRATIONS, EROSION, CAVITATIONS, AND OTHER FACTORS THAT COULD RESULT IN PREMATURE VALVE FAILURE.

### ◆ MINIMAL HEAD LOSS

HEAD LOSS IS MINIMIZED BY THE INTEGRAL STRAIGHTENING VANES THAT HELP CREATE LAMINAR FLOW. A LARGE CROSS-SECTIONAL AREA ALSO LESSENS PRESSURE DROP ACROSS THE CHECK VALVE. UNLIKE TYPICAL CONICAL SPRING CONSTRUCTIONS THAT RESTRICT FLOW, THE NEW CV 50 HAS A COMPRESSION SPRING COUPLED WITH A SMALL STEM GUIDE THAT ALLOWS FOR AN UNOBSTRUCTED FLOW PATH.

### ◆ QUICK CLOSURE TO REDUCE WATER HAMMER

SILENT SHUT-OFF IS ACHIEVED VIA THE FULLY AUTOMATIC, SPRING ASSISTED DISC THAT CLOSES NEAR ZERO FLOW VELOCITY. THE LIGHTWEIGHT, CENTER GUIDED DISC DESIGN CREATES A POSITIVE SHUTOFF PRIOR TO FLOW REVERSAL AND HELPS TO KEEP SLAMMING AND SURGES TO A MINIMUM. ADDITIONALLY, THE LOW CRACKING PRESSURE OF THE CV 50 REDUCES THE AMOUNT OF ENERGY REQUIRED TO OPEN THE VALVE.

### ◆ METAL-TO-METAL SEATS

PRECISION MACHINED SEALING SURFACES ALLOW THE CV 50-DI TO MAINTAIN A TIGHT SEAL THAT MEETS OR EXCEEDS API 598 LEAKAGE REQUIREMENTS. RESILIENT SEATS ARE ALSO AVAILABLE TO PROVIDE BUBBLE TIGHT SEALS. SEALING IS FURTHER IMPROVED BY AN ADDITIONAL GASKET ASSEMBLED WITH THE SEAT INDEPENDENT OF THE FLANGE GASKET.

### ◆ VERSATILE AND ECONOMIC DESIGN

CLEARANCE WITHIN THE CV 50'S BODY ALLOWS A BUTTERFLY VALVE TO BE INSTALLED DIRECTLY ON THE OUTLET SIDE OF THE VALVE WITHOUT EXTRA PIPING. BECAUSE THE VALVE'S TRIM IS INTERCHANGEABLE, VARIOUS SEATS, DISCS, AND SPRINGS ARE AVAILABLE AND EASY TO REPLACE. EXOTIC SPRING MATERIAL, SUCH AS MONEL OR INCONEL 750-X, CAN EASILY BE SUBSTITUTED FOR THE STANDARD STAINLESS STEEL

## TECHNICAL

PRESSURE/TEMPERATURE RATING <sup>(1)</sup>  
DUCTILE IRON - ASTM A536 - CLASS 150

WOG (Non-Shock): 250 PSI @ 100 °F

SEAT MATERIAL  
TEMPERATURE RANGE

ALUMINUM BRONZE: -460 ~ 600 °F  
STAINLESS STEEL: -325 ~ 1500 °F

SPRING MATERIAL  
MAXIMUM TEMPERATURE

STAINLESS STEEL: 450 °F

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

## APPLICATIONS

**MARKETS:** OIL AND GAS PRODUCTION, GENERAL INDUSTRY, CHEMICAL, PETROCHEMICAL, POWER, FOOD AND BEVERAGE

**SERVICE:** PUMP DISCHARGE SERVICE IN MUNICIPAL WATER, IRRIGATION, AND INDUSTRIAL CLASS HVAC SYSTEMS. IT IS RECOMMENDED THAT A TITAN FCI STRAINER BE INSTALLED AHEAD OF THE PUMP TO ENSURE PROTECTION OF THE CHECK VALVE AND THE PUMP.

**PRECAUTIONS:** THIS VALVE IS INTENDED FOR LIQUID SERVICE THAT DOES NOT EXCEED 10 FT/SEC. IT IS DESIGNED FOR STEADY FLOW CONDITIONS AND IS NOT RECOMMENDED FOR USE IN RECIPROCATING PUMP, COMPRESSOR OR OTHER TYPE OF PHYSICAL/THERMAL SHOCK-LOAD APPLICATIONS. THIS VALVE IS NOT RECOMMENDED FOR STEAM SERVICE OR FLOW MEDIA THAT CONTAINS SOLIDS. IT SHOULD BE INSTALLED AT LEAST FIVE PIPE DIAMETERS DOWNSTREAM FROM ANY TURBULENCE PRODUCING COMPONENTS. FLOW STRAIGHTENERS MAY BE REQUIRED IN CERTAIN 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.

# TITAN FLOW CONTROL, INC.

YOUR PIPELINE TO THE FUTURE!

Tel: 910-735-0000 ♦ Fax: 910-738-3848 ♦ titan@titanfci.com ♦ www.titanfci.com  
290 Corporate Drive ♦ PO Box 7408 ♦ Lumberton, NC 28358



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**SILENT CHECK VALVE • GLOBE TYPE**

**CV 50-DI (Ductile Iron)**

ANSI Class  
150 lb

Flanged Ends Flat Faced • Globe Style • Center Guided Disc

**BILL OF MATERIALS (1)**

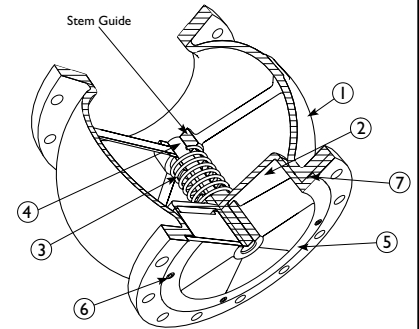
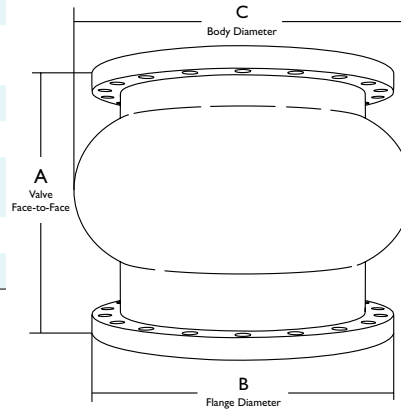
| No. | PART         | CV 50-DI-B                 | CV 50-DI-S                           |
|-----|--------------|----------------------------|--------------------------------------|
| 1   | Body         | Ductile Iron ASTM A536     | Ductile Iron ASTM A536               |
| 2   | Disc (2)     | Aluminum Bronze ASTM B148  | Stainless Steel Gr. CF8M Type 316 SS |
| 3   | Spring (2)   | Series 300 Stainless Steel | Series 300 Stainless Steel           |
| 4   | Bushing (2)  | Bronze                     | Stainless Steel                      |
| 5   | Seat (2) (3) | Aluminum Bronze ASTM B148  | Stainless Steel Gr. CF8M Type 316 SS |
| 6   | Cap Screw    | Stainless Steel            | Stainless Steel                      |
| 7   | Gasket       | Non-asbestos Gasket        | Non-asbestos Gasket                  |

1. Bill of Materials represents standard materials. Equivalent or better materials may be substituted at the manufacturer's discretion.
2. Denotes recommended spare parts.
3. Resilient Seats are available upon request. Please call for details.

**Additional Design & Technical Notes:**

- The CV 50-DI is designed to fit Cast Iron Class 125 and Ductile Iron Class 150 Flanges. The bolting pattern for Cast Iron Class 125 and Ductile Iron Class 150 are identical.
- Ductile Iron maintains the anti-corrosive properties of Cast Iron while achieving a yield strength comparable to Carbon Steel. It also offers higher pressure/temp ratings than Cast Iron.
- All valve bodies are epoxy painted.

Illustrations are for representational purposes only.  
Please ask for certified drawings when necessary.

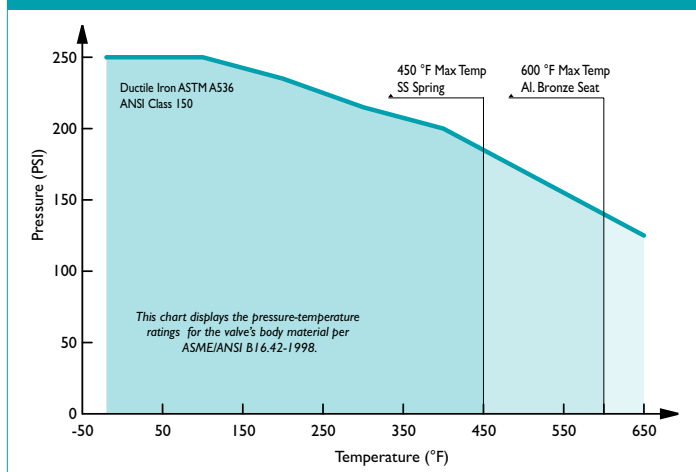


**DIMENSIONS AND PERFORMANCE DATA (1)**

| 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</b> DIMENSION<br>FACE TO FACE (2) | in             | 6.25  | 7.00  | 7.50  | 8.50  | C/F | 10.50  | 13.50 | 16.25  | 20.25 | 22.75 | 24.75  | 22.50 | 24.00 | C/F |
|  | mm             | 159   | 178   | 191   | 216   | C/F | 267    | 343   | 413    | 514   | 578   | 629    | 572   | 610   | C/F |
| <b>ØB</b> DIMENSION<br>FLANGE DIAMETER | in             | 6.00  | 7.00  | 7.50  | 9.00  | C/F | 11.00  | 13.50 | 16.00  | 19.00 | 21.00 | 23.50  | 25.00 | 27.50 | C/F |
|  | mm             | 153   | 178   | 191   | 229   | C/F | 280    | 343   | 406    | 483   | 533   | 597    | 635   | 699   | C/F |
| <b>ØC</b> DIMENSION<br>BODY DIAMETER   | in             | 4.625 | 5.75  | 6.625 | 8.625 | C/F | 11.125 | 15.84 | 17.687 | 21.25 | 23.95 | 25.875 | 29.0  | 32.75 | C/F |
|  | mm             | 117   | 146   | 168   | 219   | C/F | 283    | 402   | 449    | 540   | 608   | 657    | 737   | 832   | C/F |
| WEIGHT<br>(APPROXIMATE)                | lb             | 14.0  | 24.0  | 27.5  | 44.0  | C/F | 83.0   | 145.0 | 220.0  | 344.0 | 453.5 | 593.0  | 695.5 | 963.0 | C/F |
|  | kg             | 6.4   | 10.9  | 12.5  | 20.0  | C/F | 37.6   | 65.8  | 99.8   | 156.0 | 205.7 | 269.0  | 315.5 | 436.8 | C/F |
| Flow Coefficient                       | C <sub>v</sub> | 65    | 105   | 150   | 265   | C/F | 600    | 1100  | 1800   | 2500  | 3100  | 4300   | 5000  | 6300  | C/F |
| Cracking Pressure (3)                  | psi            | ≤ .5  | ≤ .5  | ≤ .5  | ≤ .5  | C/F | ≤ .5   | ≤ .5  | ≤ .5   | ≤ .5  | ≤ .5  | ≤ .5   | ≤ .5  | ≤ .5  | C/F |

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 lower 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.

**PRESSURE - TEMPERATURE RATINGS (1)**



1. This chart displays the pressure-temperature ratings for the valve's body. Max temperature limits have been added for seat and spring materials.

**ORDERING CODE**

| Model Number | Description                                      |
|--------------|--|
| CV50-DI-B    | Ductile Iron Body, Bronze Seat and Disc          |
| CV50-DI-S    | Ductile Iron Body, Stainless Steel Seat and Disc |

**REFERENCED STANDARDS & CODES**

| CODE        | DESCRIPTION                                    |
|-------------|--|
| ANSI B16.42 | Ductile Iron Pipe Flanges and Flanged Fittings |
| ANSI B16.5  | Pipe Flanges & Flanged Fittings                |
| MSS SP-6    | Standard Finishes for Connecting-end Flanges   |
| MSS SP-25   | Standard Marking System for Valves             |
| MSS SP-55   | Quality Standard for Valve Castings            |

**PRESSURE - TEMPERATURE RATING**

|                       |                  |
|-----------------------|------------------|
| <b>ANSI CLASS 150</b> | ASTM A536        |
| WOG (Non-Shock)       | 250 PSI @ 100 °F |

**TEMPERATURE RANGE SEAT**

| SEAT            | Temperature      |
|-----------------|------------------|
| Aluminum Bronze | -460 °F @ 600 °F |
| Stainless Steel | -325 ~ 1500 °F   |

**MAX TEMPERATURE SPRING**

| SPRING          | Max Temperature |
|-----------------|-----------------|
| Stainless Steel | 450 °F          |

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

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.