



TITAN FLOW CONTROL, INC.

## SILENT CHECK VALVE ♦ GLOBE TYPE ♦ CENTER GUIDED

### ASME CLASS 150 ♦ CARBON & STAINLESS STEEL ♦ FLANGED ENDS (RF)

## MODELS: CV 51-CS CV 51-SS

Body: Carbon & Stainless Steel  
Trim: Stainless Steel

PATENTED  
DESIGN WITH INTEGRAL  
STRAIGHTENING  
VANES



## FEATURES

SIZE RANGE: 2" ~ 24"

LARGER SIZES AVAILABLE

### ◆ DESIGNED FOR LONG SERVICE LIFE

NEWLY DESIGNED CV51'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 51 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 51 REDUCES THE AMOUNT OF ENERGY REQUIRED TO OPEN THE VALVE.

### ◆ METAL-TO-METAL SEATS

PRECISION MACHINED SEALING SURFACES ALLOW THE CV 51-CS/SS 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 51'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>  
CS - ASTM A216 Gr. WCB - CLASS 150

WOG (Non-shock): 285 PSI @ 100 °F

PRESSURE/TEMPERATURE RATING <sup>(1)</sup>  
SS - ASTM A351 Gr. CF8M - CLASS 150

WOG (Non-shock): 275 PSI @ 100 °F

SEAT MATERIAL <sup>(1)</sup>  
TEMPERATURE RANGE

STAINLESS STEEL: -325 ~ 1500 °F

SPRING MATERIAL <sup>(1)</sup>  
MAXIMUM TEMPERATURE

STAINLESS STEEL: 450 °F

1. The above listed temperatures are theoretical and may vary during actual operating conditions.
2. Max and min temperatures are for reference only. Prolonged use at these temperatures is not recommended for optimal service life.

## 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. ADDITIONAL 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!**

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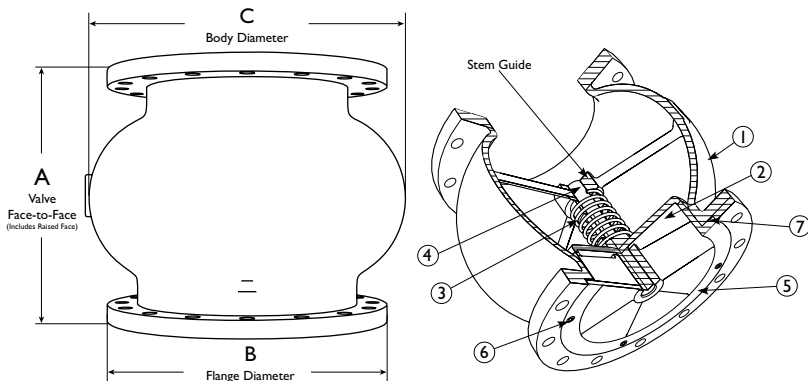
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**SILENT CHECK VALVE • GLOBE TYPE**

**CV 51-CS (Carbon) CV 51-SS (Stainless Steel)**

ASME Class  
150

**Flanged Ends (RF) • Globe Style • Center Guided Disc**



**BILL OF MATERIALS (1)**

No.	PART	CV 51-CS	CV 51-SS
1	Body	Carbon Steel A216 Gr. WCB	Stainless Steel A351 Gr. CF8M Type 316
2	Disc (2)	Stainless Steel Gr. CF8M Type 316	Stainless Steel Gr. CF8M Type 316
3	Spring (2)	Series 300 Stainless Steel	Series 300 Stainless Steel
4	Bushing (2)	Stainless Steel	Stainless Steel
5	Seat (2) (3)	Stainless Steel Gr. CF8M Type 316	Stainless Steel Gr. CF8M Type 316
6	Cap Screw	Stainless Steel	Stainless Steel
7	Gasket (2)	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.

**Application/Additional Notes:**

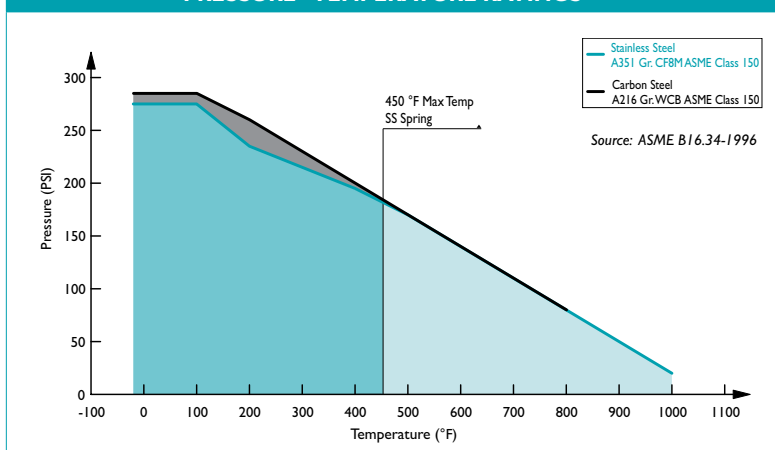
- Face-to-Face Dimension 'A' includes raised face. Class 150 flanges are regularly furnished with 1/16 inch high raised face.
- Carbon Steel bodies are epoxy painted. Other coatings are available; please contact factory for details.
- Contact Titan FCI Engineering for flexible expansion joint applications.

**DIMENSIONS AND PERFORMANCE DATA (1)**

SIZE (2)	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> FACE TO FACE (3)	in	6.25	7.12	7.55	8.50	9.50	10.50	12.0	14.0	18.0	19.50	21.0	22.5	24.0	24.0
	mm	159	182	192	216	241	267	305	356	457	495	533	572	610	610
<b>ØB DIMENSION</b> FLANGE DIAMETER	in	6.00	7.00	7.50	9.00	10.00	11.00	13.50	16.00	19.00	21.00	23.5	25.0	27.5	32.0
	mm	152	178	191	229	254	279	343	406	483	533	597	637	699	813
<b>ØC DIMENSION</b> BODY DIAMETER	in	4.63	5.77	6.63	8.62	10.00	11.13	15.84	17.69	21.25	24.0	26.5	29.0	32.75	37.0
	mm	118	147	168	219	254	283	402	449	540	610	673	737	832	940
<b>WEIGHT</b> (APPROXIMATE)	lb	15.2	22.2	30.0	49.0	59.75	80.0	138.0	165.0	310.0	420.0	593.0	690.0	970.0	1500
	kg	6.3	10.1	13.6	22.2	27.1	36.3	62.4	74.8	140.6	190.5	268.2	312.1	438.8	681
<b>Flow Coefficient</b>	C <sub>v</sub>	65	C/F	150	265	C/F	600	1100	1800	2500	3100	4800	6100	7800	9800
<b>Cracking Pressure (4)</b>	psi	≤ .5	≤ .5	≤ .5	≤ .5	≤ .5	≤ .5	≤ .5	≤ .5	≤ .5	≤ .5	≤ .5	≤ .5	≤ .5	≤ .5

1. Dimensions, weights, and flow coefficients are provided for reference only. When required, always request certified drawings.
2. Larger sizes are available. Please consult factory for these sizes and dimensions.
3. Face to face values have a tolerance of ±0.06 in (±2.0 mm) for sizes 6" and lower and a tolerance of ±0.12 in (±3.0 mm) for sizes 8" and larger.
4. 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 the spring material.

**REFERENCED STANDARDS & CODES**

CODE	DESCRIPTION
ASME B16.5	Pipe Flanges & Flanged Fittings
ASME/API 594	Valve Design and Manufacture
API 598	Valve Inspection and Pressure Test
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**

ASME CLASS 150	Carbon Steel	Stainless Steel
WOG (Non-shock)	285 PSI @ 100 °F	275 PSI @ 100 °F

**TEMPERATURE RANGE SEAT**

SEAT	Temperature
Stainless Steel	-325 ~ 1500 °F

**MAX TEMPERATURE SPRING**

SPRING	Max Temperature
Stainless Steel	450 °F

**ORDERING CODE**

Model Number	Description
CV51-CS	Carbon Steel Body, Stainless Steel Seat and Disc
CV51-SS	Stainless Steel Body, Stainless Steel Seat and Disc

1. The listed pressure and temperature ratings for the valve's body, seat, and spring are theoretical and may vary during actual operating conditions.
2. Max and min temperatures are for reference only. Prolonged use at these temperatures is not recommended for optimal service life.

As †Titan 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. †TITAN is a registered trademark of Titan Flow Control Incorporated.