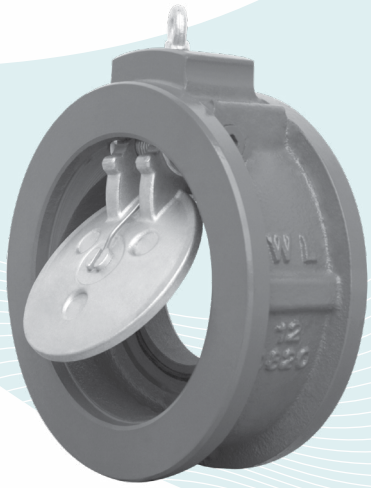
TITAN FLOW CONTROL, INC.

SWING CHECK VALVE ❖ WAFER TYPE ❖ SINGLE DISC
ASME CLASS 125/150 ❖ DUCTILE IRON

NEWLY DESIGNED...
Face to face meets API 594.



MODEL: CV 31-DI

Body: Ductile Iron
Seat: Buna-N
Disc: Stainless Steel

SIZES: 2" ~ 12"

FEATURES

◇ **ECONOMICAL 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**
HEAD LOSS IS MINIMIZED BY PROVIDING A SHORT, STRAIGHT AND VIRTUALLY UNOBSTRUCTED FLOW PATH. ADDITIONALLY, THE SPRING-LOADED DISC IS 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 DISC THAT CLOSES NEAR ZERO FLOW VELOCITY. THE LIGHTWEIGHT, SINGLE DISC DESIGN CREATES A POSITIVE SHUTOFF PRIOR TO FLOW REVERSAL WHICH HELPS TO KEEP SURGES TO A MINIMUM.

◇ **DURABLE, HIGH QUALITY DESIGN**
THE CV31'S DUCTILE IRON BODY MAINTAINS THE ANTI-CORROSIVE PROPERTIES OF CAST IRON WHILE ACHIEVING A YIELD STRENGTH COMPARABLE TO CARBON STEEL. DUCTILE IRON ALSO OFFERS HIGHER PRESSURE/TEMPERATURE RATINGS THAN CAST IRON IN THE SAME PRESSURE CLASS. THE CV31 ALSO FEATURES ANTI-CORROSIVE, STAINLESS STEEL TRIM (DISC, SPRING, SHAFT) AS STANDARD.

◇ **RESILIENT SOFT SEATS**
FIELD REPLACEABLE, RESILIENT SOFT SEATS (BUNA-N O-RING) COUPLED WITH PRECISION MACHINED SEALING SURFACES HELP TO ENSURE A BUBBLE TIGHT SEAL THAT MEETS OR EXCEEDS API 598 TEST REQUIREMENTS.

TECHNICAL

PRESSURE/ TEMPERATURE RATING DI - ASTM A536 - CLASS 150 (1)
WOG (Non-shock): 250 PSI @ 100 °F
SEAT MATERIAL TEMPERATURE RANGE
BUNA-N: -20 ~ 250 °F
SPRING MATERIAL MAXIMUM TEMPERATURE
Series 300 Stainless Steel: 450 °F

1. *Ductile Iron valves offer higher pressure ratings than Cast Iron. valves For example, Ductile Iron valves (2" ~ 24") are rated at 250 psi wog. By comparison, Cast Iron valves (2" ~ 12") are rated at 200 psi wog and (14" ~ 24") are only rated at 150 psi wog.*
2. *The above listed temperatures are theoretical and may vary during actual operating conditions.*
3. *Max and min temperatures are for reference only. Prolonged use at these temperatures is not recommended for optimal service life.*

APPLICATIONS

MARKETS: GENERAL INDUSTRY, CHEMICAL, PETROCHEMICAL, POWER, AND FOOD & BEVERAGE

SERVICE: INTENDED FOR LIQUID SERVICE THAT IS STEADY, CLEAN (NO ABRASIVES OR SOLIDS) AND NON-PULSATING. FLOW RATE SHOULD NOT EXCEED 15 FT/SEC. NOT RECOMMENDED FOR STEAM OR RECIPROCATING COMPRESSOR SERVICE.

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.

TITAN® FLOW CONTROL, INC.
YOUR PIPELINE TO THE FUTURE!
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SWING CHECK VALVE • WAFER TYPE • SINGLE DISC

MODEL: CV 31-DI (Ductile Iron Body)

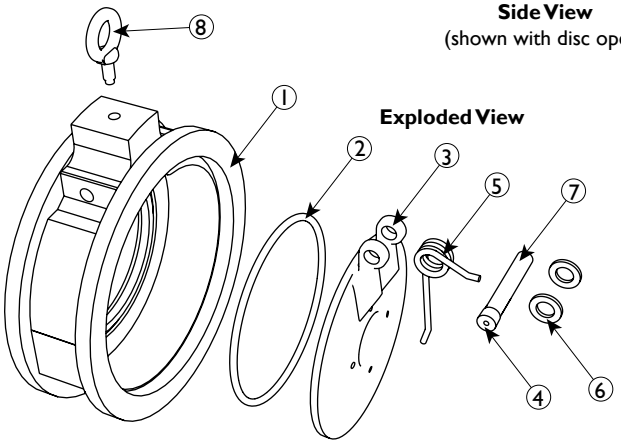
Buna-N Seat • Stainless Steel Disc

ASME Class 125/150

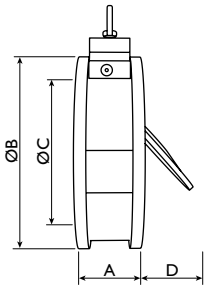
BILL OF MATERIALS (1)

No.	PART	CV 31-DI
1	Body	Ductile Iron ASTM A536
2	Seat	Buna-N O-Ring
3	Disc (2)	Stainless Steel AISI 316
4	Plug	Carbon Steel ASTM A307B
5	Spring (2)	Series 300 Stainless Steel
6	Spacer	PTFE Commercial
7	Shaft	Stainless Steel AISI 316
8	Eye Bolt	Carbon Steel ASTM A307B

1. Bill of Materials represents standard materials. Equivalent or better materials may be substituted at the manufacturer's discretion. All materials conform to ASTM specifications.
2. Denotes recommended spare parts.



Exploded View



Side View
(shown with disc open)

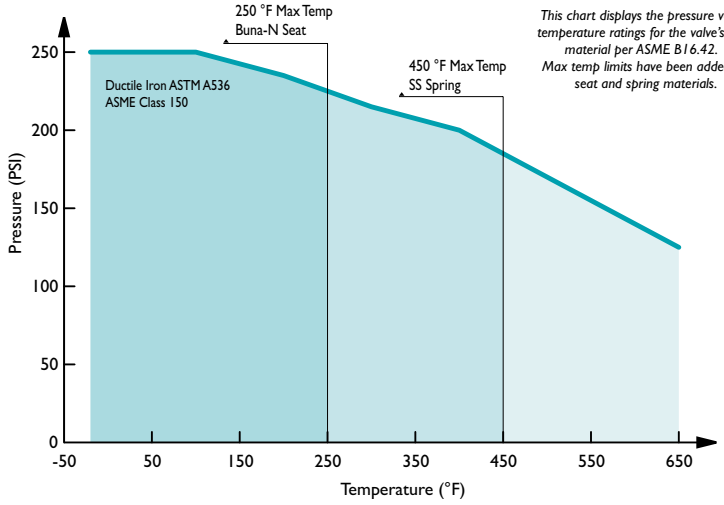
Illustrations are representative of the CV 31-DI. Please request certified drawings when required.

DIMENSIONS AND PERFORMANCE DATA (1)

SIZE		in	2	2 1/2	3	4	5	6	8	10	12
		mm	50	65	80	100	125	150	200	250	300
A DIMENSION FACE TO FACE (2)		in	2.12(4)	2.38(4)	2.62(4)	2.62(4)	3.25(4)	3.75(4)	5.0(4)	5.5(4)	7.12(4)
		mm	54	61	67	67	83	95	127	140	181
ØB DIMENSION OVERALL DIAMETER		in	4.00	4.88	5.25	6.88	7.75	8.75	11.00	13.38	16.13
		mm	102	124	133	175	197	223	280	340	410
ØC DIMENSION INLET DIAMETER		in	1.31	1.85	2.06	3.00	3.75	4.75	6.44	7.63	9.50
		mm	34	47	53	77	96	121	164	194	242
D DIMENSION DISC MAX TRAVEL		in	0.75	1.00	0.80	1.87	3.30	2.70	3.00	4.62	4.00
		mm	19	25.5	20.3	47.5	83.8	68.6	76	117	102
ASSEMBLED WEIGHT		lb	4.25	7.25	8.75	13.25	18.5	32	50	80	126
		kg	1.9	3.3	4	6	8.4	14.5	22.7	36.2	57.1
Flow Coefficient		C_v	62	109	166	318	471	720	1384	2298	4153
Cracking Pressure (3)		psi	≤ .25	≤ .25	≤ .25	≤ .25	≤ .25	≤ .25	≤ .25	≤ .25	≤ .25

1. Dimensions, weights, and flow coefficients are for reference only. When required, 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.
4. Face to face dimensions per API 594 Class 125.

PRESSURE-TEMPERATURE RATINGS



Ductile Iron Application Notes: Ductile Iron maintains the anti-corrosive properties of Cast Iron while achieving a yield strength comparable to Carbon Steel. Ductile Iron also offers higher pressure/temperature ratings than Cast Iron. For example, Ductile Iron check valves (class 150 - sizes 2" ~ 24") are rated at 250 psi wog. By comparison, Cast Iron check valves (class 125 - sizes 2" ~ 12") are rated at 200 psi wog and (sizes 14" ~ 24") are only rated at 150 psi wog. Ductile Iron ASME Classes 150 has the same bolting pattern as Cast Iron ASME Class 125.

REFERENCED STANDARDS & CODES

CODE	DESCRIPTION
ASME B16.42	Ductile Iron Pipe Flanges and Flanged Fittings
ASME B16.5	Pipe Flanges & Flanged Fittings
API 594	Wafer, Wafer-Lug, & Double Flanged Type Check Valve
API 598	Valve Inspection and Testing
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 (1)

Pressure Class	Ductile Iron A536 Class 150
WOG (Non-shock)	250 PSI @ 100 °F

SEAT AND SPRING TEMPERATURE RATINGS (1)

SEAT (O-Ring)	Temperature Range
Buna-N	-20 °F @ 250 °F
SPRING	**Maximum Temperature**
Series 300 Stainless Steel	450 °F

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.*