SANITARY CHECK VALVE

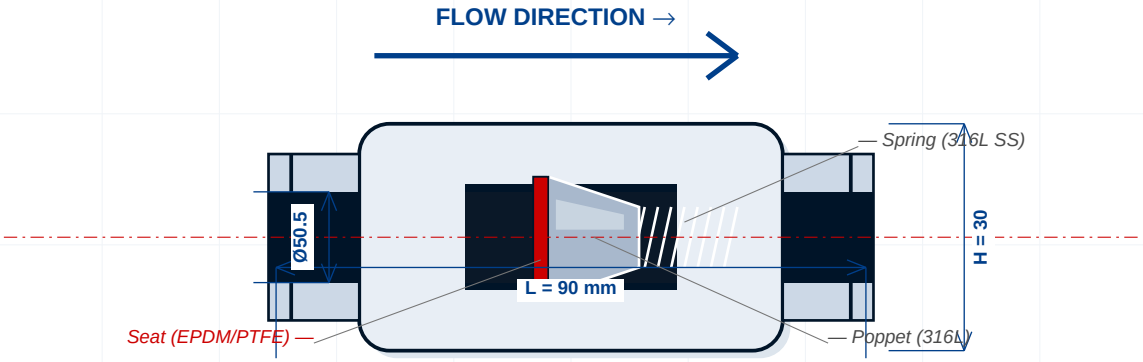
316L SPRING-LOADED INLINE

Inline spring-loaded check valve providing reverse-flow protection in sanitary process lines. The cavity-free hygienic design with single moving part (poppet) ensures reliable operation with minimal pressure drop. Cracking pressure adjustable by spring selection. Suitable for protecting pumps, blocking back-siphonage and ensuring directional flow in CIP circuits, dairy processing and beverage production.

MATERIAL	SIZE RANGE	PRESSURE	TEMPERATURE	CRACKING	STANDARD
316L SS	DN15 – DN100	PN10 (10 bar)	-10 to +130°C	0.02 – 0.05 bar	3-A Sanitary

TECHNICAL DRAWING

DWG: CE-CV-001



CROSS-SECTION — SPRING-LOADED CHECK VALVE DN50

Inline poppet · Spring-loaded · Reverse-flow protection

CASPIAN EDGE INC. NORTH YORK, ON, CANADA	
DWG NO: CE-CV-001	SCALE: NTS
UNIT: mm	VIEW: CROSS-SECTION

IN THIS DATASHEET

SANITARY CHECK VALVE 316L SPRING-LOADED INLINE

DESIGN SPECIFICATIONS SECTION 1

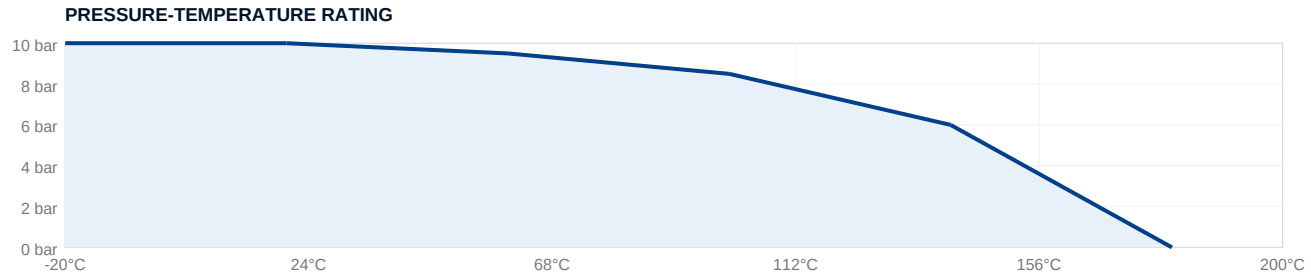
Design Type	Spring-loaded inline
Body	Cavity-free hygienic
Poppet	One-piece 316L
Seat	PTFE / EPDM elastomer
Connection	Tri-Clamp DIN 32676
Flow Direction	Indicated by arrow
Mounting	Any (horizontal preferred)
Cracking Adjustable	By spring selection

OPERATING CONDITIONS SECTION 2

PRESSURE RATING		
Max Working Pressure	10	**bar**
Max Test Pressure	15	**bar**
Cracking (std)	0.02 – 0.05	**bar**
Cracking (high)	0.1 – 0.3	**bar**

TEMPERATURE RANGE		
EPDM Seat	-40 to +130	**°C**
PTFE Seat	-29 to +180	**°C**
Silicone	-50 to +200	**°C**
Operating	-10 to +130	**°C**

PRESSURE-TEMPERATURE RATING CHART SECTION 3



SURFACE FINISH OPTIONS SECTION 4

DESIGNATION	RA (µM)	RA (µIN)	METHOD	APPLICATION
Standard	≤ 0.8	≤ 32	Mechanical polish	Food, dairy, beverage
Premium	≤ 0.5	≤ 20	Mech. polish + buff	Pharmaceutical
EP (BPE SF4)	≤ 0.38	≤ 15	Electropolish	Biotech, high-purity
Mirror	≤ 0.25	≤ 10	EP + final buff	Critical bioprocess

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SANITARY CHECK VALVE — 316L SPRING-LOADED INLINE

MATERIALS OF CONSTRUCTION — SECTION 5

PART	STANDARD	OPTIONAL	SPEC
Body	316L SS	904L	ASTM A479
Poppet	316L SS	904L	ASTM A479
Spring	316L SS	Inconel	ASTM A313
Seat	EPDM	PTFE/Silicone	FDA
O-Ring	EPDM	Viton/Silicone	FDA 21 CFR 177

316L CHEMICAL COMPOSITION — SECTION 6

ELEMENT	SYMBOL	MIN %	MAX %	FUNCTION
Chromium	Cr	16.0	18.0	Corrosion resistance
Nickel	Ni	10.0	14.0	Ductility, toughness
Molybdenum	Mo	2.0	3.0	Pitting resistance
Carbon	C	—	0.03	Low carbon (L grade)
Manganese	Mn	—	2.0	Deoxidizer
Silicon	Si	—	0.75	Deoxidizer
Phosphorus	P	—	0.045	Impurity (limit)
Sulfur	S	—	0.030	Impurity (limit)

SIZE CHART & DIMENSIONS — SECTION 7

NOM.	DN	OD	L (MM)	CV	WEIGHT (KG)
½"	15	50.5	60	5	0.4
1"	25	50.5	80	20	0.6
1½"	38	64.0	88	45	0.9
2"	50	77.5	98	85	1.3
2½"	63	91.0	108	140	1.8
3"	76	104.0	118	225	2.5
4"	100	119.0	130	385	3.7

STANDARDS & CERTIFICATIONS — SECTION 8

STANDARD	DESCRIPTION	STATUS
3-A 74-07	Sanitary fittings	Compliant
EHEDG Type EL	Hygienic equipment	Available
ISO 2852	Clamp couplings	Compliant
FDA 21 CFR 177	Food contact	Compliant
EC 1935/2004	Food contact materials	Compliant

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TYPICAL APPLICATIONS SECTION 9

FOOD & BEVERAGE	DAIRY	BREWING & WINE
• Filling line shut-off	• Pasteurization circuits	• Wort transfer
• Product transfer lines	• Cheese processing	• Fermentation tanks
• CIP/SIP circuits	• Yogurt production	• Bottling lines
• Storage tank outlets	• Milk separators	• Brewhouse CIP
• Sampling stations	• Cream lines	• Filtration
• Mixing & blending	• 3-A compliant systems	• Carbonation systems

INSTALLATION GUIDELINES SECTION 10

Caspian Edge sanitary valves are designed for in-line installation in any orientation. Follow these guidelines: **1. Pipe Preparation:** Ensure pipe ends are clean, deburred and free from contamination. Pipe OD must match valve ferrule OD specification. **2. Tri-Clamp Assembly:** Insert gasket between flanges. Position tri-clamp evenly and tighten gradually using torque sequence. Recommended torque: 5–7 N·m. **3. Flow Direction:** Most valves are bi-directional. Check valves and certain butterfly valves require specific orientation — refer to flow arrow on body. **4. Actuator Mounting:** Pneumatic actuator field-installable using ISO 5211 pattern. Air supply: 5–7 bar clean, dry, filtered air. **5. Commissioning:** Cycle valve 3–5 times before initial use. Verify no leakage at static pressure test (1.5× working pressure for 5 minutes).

MAINTENANCE SCHEDULE SECTION 11

INTERVAL	ACTION	NOTES
Daily	Visual inspection	Check for leaks, unusual sounds
Weekly	Cycle test	Manual operation, verify smooth action
Monthly	Tri-clamp torque check	Re-tighten if loose, inspect gaskets
6 Months	Seal inspection	Replace seals if visible wear
Annually	Full overhaul	Disassemble, inspect, replace all seals
As needed	CIP/SIP integration check	Verify CIP coverage at valve cavity

REQUEST A TECHNICAL QUOTATION

Send your specifications and we will respond with detailed pricing, lead time and documentation.

INCLUDE IN YOUR RFQ:

Quantity · Size (DN) · Material grade · Seal material · Surface finish · Required certifications · Delivery date

SUBMIT RFQ →

caspianedge.com/rfq

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