DOUBLE-SEAT MIXPROOF VALVES

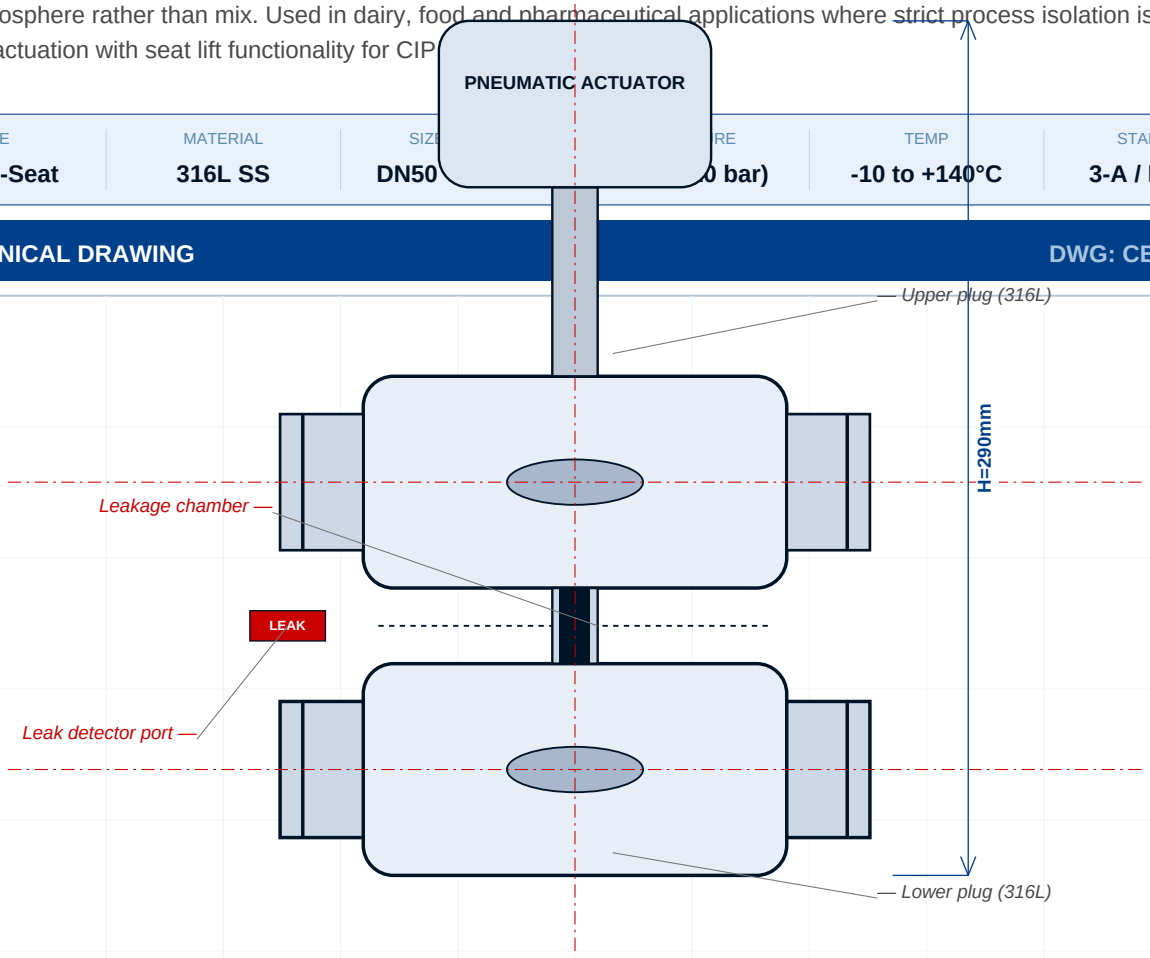
ASEPTIC SEPARATION — CIP-COMPATIBLE

Double-seat mixproof valves provide physical separation between two product streams or product/CIP using two independent plug seals with a vented atmospheric leakage chamber. This design ensures that any seat failure causes the contaminated product to drain to atmosphere rather than mix. Used in dairy, food and pharmaceutical applications where strict process isolation is required. Pneumatic actuation with seat lift functionality for CIP

TYPE	MATERIAL	SIZE	PRESSURE	TEMP	STANDARD
Double-Seat	316L SS	DN50	0 bar)	-10 to +140°C	3-A / EHEDG

TECHNICAL DRAWING

DWG: CE-MV-001



CROSS-SECTION — DOUBLE-SEAT MIXPROOF VALVE

2 independent seats · Leakage chamber · Aseptic separation

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

IN THIS DATASHEET

PAGE 1 Technical drawing with dimensions and component callouts

PAGE 2 Full technical specifications, materials and pressure-temperature data

PAGE 3 Standards compliance, certifications and documentation

PAGE 4 Applications, installation, maintenance and RFQ form

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DOUBLE-SEAT MIXPROOF VALVES ASEPTIC SEPARATION — CIP-COMPATIBLE

DESIGN SPECIFICATIONS SECTION 1

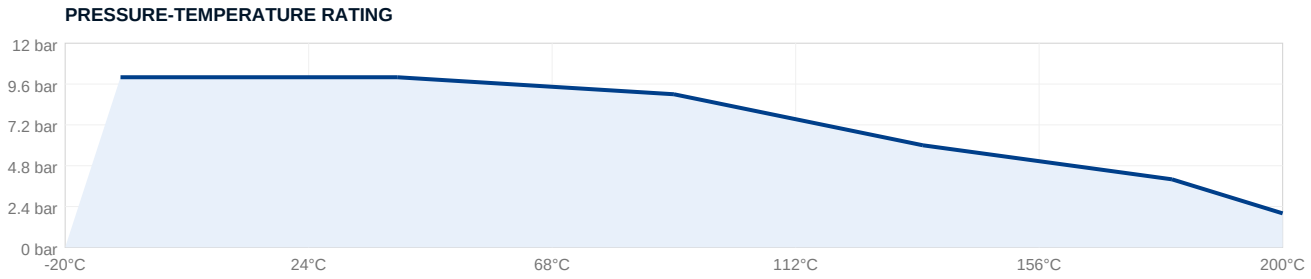
Type	Double-seat with leakage chamber
Operation	Two independent plugs
Failsafe	Leakage to atmosphere on seat failure
CIP Seat Lift	Pneumatic
Body Material	316L SS, cavity-free
Plug Material	316L SS
Seal Material	EPDM / FPM / PTFE
Actuation	Pneumatic (double-acting)

OPERATING CONDITIONS SECTION 2

PRESSURE RATING		
Max Working Pressure	10	**bar**
Differential	10	**bar max**
Test Pressure	15	**bar**
Air Supply	5 – 7	**bar**

TEMPERATURE RANGE		
EPDM	-40 to +140	**°C**
Viton (FKM)	-20 to +200	**°C**
PTFE	-29 to +180	**°C**
CIP/SIP	+135	**°C max**

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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DOUBLE-SEAT MIXPROOF VALVES ASEPTIC SEPARATION — CIP-COMPATIBLE

MATERIALS OF CONSTRUCTION — SECTION 5

PART	STANDARD	OPTIONAL	SPEC
Body	316L SS	—	ASTM A351
Upper Plug	316L SS	—	ASTM A479
Lower Plug	316L SS	—	ASTM A479
Seal (Plug)	EPDM	FPM/PTFE	FDA 21 CFR
Stem	316L SS	—	ASTM A479
Actuator Body	Anodized Al	SS option	—
Air Connections	¼" NPT	—	ASME B1.20.1

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 (MM)	CV (EACH PATH)	AIR CONN.	WEIGHT (KG)
2"	50	77.5	85	¼" NPT	12
2½"	63	91.0	135	¼" NPT	15
3"	76	104.0	220	¼" NPT	19
4"	100	119.0	380	¼" NPT	28
5"	125	130.0	580	¼" NPT	38
6"	150	168.0	850	¼" NPT	52

STANDARDS & CERTIFICATIONS — SECTION 8

STANDARD	DESCRIPTION	STATUS
3-A 74-07	Sanitary valves	Compliant
EHEDG Type EL Class I	Mixproof equipment	Compliant
ASME BPE-2022	Bioprocessing valves	Available
ISO 5211	Actuator mounting	Compliant
FDA 21 CFR 177	Food contact (seals)	Compliant
EC 1935/2004	Food contact materials	Compliant
ATEX 2014/34/EU	Explosive atmospheres	Optional

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TYPICAL APPLICATIONS — SECTION 9

DAIRY

- Pasteurization circuits
- Cheese processing
- Yogurt production
- Milk separators
- Cream lines
- 3-A compliant systems

BREWING & WINE

- Wort transfer
- Fermentation tanks
- Bottling lines
- Brewhouse CIP
- Filtration
- Carbonation systems

FOOD MANIFOLD

- Multi-product transfer
- Recipe-based switching
- Batch isolation
- Allergen separation
- Manifold panel valves
- Tank-to-tank transfer

INSTALLATION GUIDELINES — SECTION 10

Orientation: Install with stem vertical (actuator on top). This ensures gravity drainage of leakage chamber. **Leakage Drain:** Connect leakage chamber outlet to atmospheric drain. Never plug or restrict this outlet — it is the safety feature that prevents product cross-contamination. **Air Connections:** Connect 5–7 bar clean dry air to actuator. Provide separate solenoid valves for: open/close + seat lift functions. **Position Feedback:** Connect feedback signals (mechanical or proximity sensors) to control system. Verify all four positions: closed, upper-seat-lift, lower-seat-lift, open. **Seat-Lift Cycle:** During CIP, briefly lift each seat (1-2 seconds) to clean seal area. This is critical for hygienic operation and is included in standard CIP recipes. **Commissioning:** Verify leak detection by injecting fluorescein into upper chamber — must flow to leakage drain. Repeat for lower chamber.

MAINTENANCE SCHEDULE — SECTION 11

INTERVAL	ACTION	NOTES
Daily	Visual leak check	Verify leakage drain dry
Weekly	Cycle verification	All 4 positions operate
Monthly	Air supply check	Pressure & filter cleanliness
Quarterly	Seal inspection	EPDM compression set
6 Months	Replace seals	Both plug seals
Annually	Full overhaul	All seals, position sensors
Per protocol	Leak test	Functional verification

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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