

SANITARY DIAPHRAGM VALVE

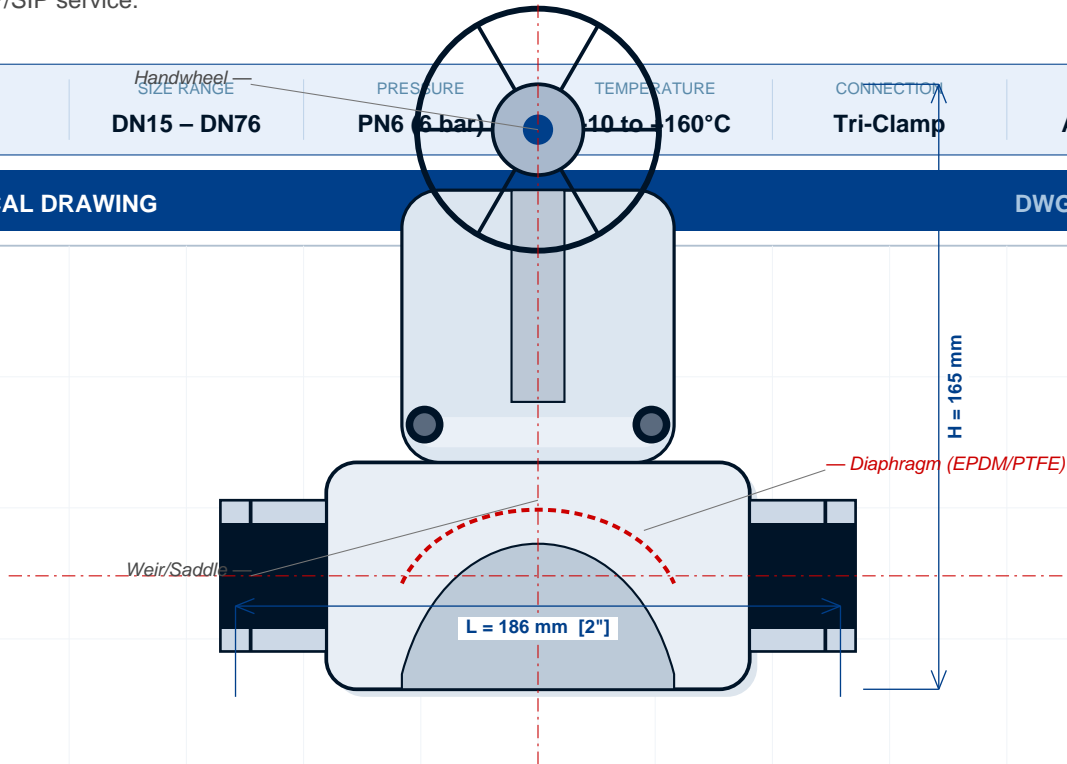
316L BODY — EPDM / PTFE DIAPHRAGM

Weir-type diaphragm valve providing absolute media isolation through a flexible elastomer diaphragm. The cavity-free hygienic design with smooth-bore body is ideal for pharmaceutical, biotech and high-purity applications where contamination prevention is critical. ASME BPE compliant designs available with full material traceability and surface finish certification. Suitable for sterile, aseptic and CIP/SIP service.

MATERIAL	Handwheel SIZE RANGE	PRESSURE	TEMPERATURE	CONNECTION	STANDARD
316L SS	DN15 – DN76	PN6 (6 bar)	-10 to +160°C	Tri-Clamp	ASME BPE

TECHNICAL DRAWING

DWG: CE-DV-001



CROSS-SECTION VIEW — DIAPHRAGM VALVE DN50

Weir-type · Manual handwheel · Aseptic-grade

CASPIAN EDGE INC. NORTH YORK, ON, CANADA	
DWG NO: <b>CE-DV-001</b>	SCALE: <b>NTS</b>
UNIT: <b>mm</b>	VIEW: <b>CROSS-SECTION</b>

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

## SANITARY DIAPHRAGM VALVE

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## DESIGN SPECIFICATIONS

## SECTION 1

Design Type	Weir-type diaphragm
Body Configuration	Cavity-free smooth bore
Diaphragm Action	Linear compression
Sealing	Single diaphragm
Body Types	Straight / Angle / Tank bottom
Connection	Tri-Clamp DIN 32676
Mounting	Any orientation
Actuation	Manual / Pneumatic

## OPERATING CONDITIONS

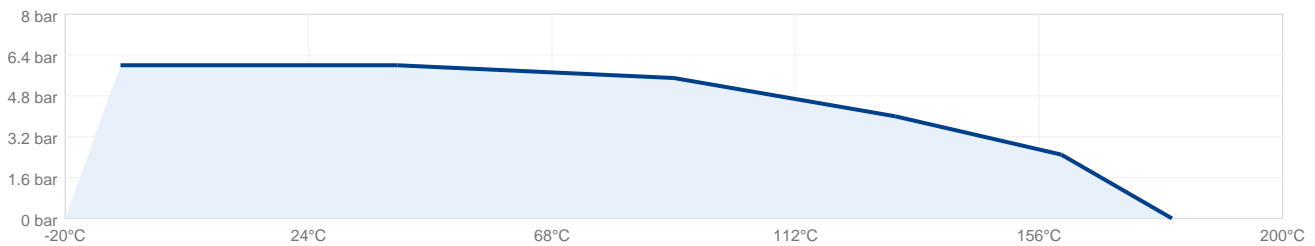
## SECTION 2

PRESSURE RATING			TEMPERATURE RANGE		
Max Working Pressure	6	bar	EPDM Diaphragm	-10 to +130	°C
Max Test Pressure	9	bar	PTFE Diaphragm	-10 to +160	°C
Min Vacuum	-0.9	bar	Silicone	-50 to +200	°C
Steam (SIP)	3	bar	Steam SIP	+140	°C max

## PRESSURE-TEMPERATURE RATING CHART

## SECTION 3

PRESSURE-TEMPERATURE RATING



## SURFACE FINISH OPTIONS

## SECTION 4

DESIGNATION	RA (MM)	RA (MIN)	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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## MATERIALS OF CONSTRUCTION

## SECTION 5

PART	STANDARD	OPTIONAL	SPEC
Body	316L SS	Hastelloy C-22	ASTM A479
Bonnet	316L SS	PVDF	ASTM A479
Diaphragm	EPDM	PTFE/Silicone	FDA / USP VI
Compressor	PTFE	PEEK	FDA
Spindle	316L SS	—	ASTM A479
Handwheel	SS / Polymer	—	—
Bonnet Bolts	A4-80 SS	—	ISO 3506

## 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 &amp; DIMENSIONS

## SECTION 7

NOM.	DN	OD	FACE-F (MM)	CV	WEIGHT (KG)
½"	15	50.5	132	1.8	0.9
¾"	20	50.5	132	4.5	1.0
1"	25	50.5	151	7.2	1.3
1½"	38	64.0	167	18	2.0
2"	50	77.5	186	32	2.8
2½"	63	91.0	210	55	4.2
3"	76	104.0	228	85	5.8

## STANDARDS &amp; CERTIFICATIONS

## SECTION 8

STANDARD	DESCRIPTION	STATUS
ASME BPE-2022	Bioprocessing Equipment	Compliant
EHEDG Type EL	Hygienic equipment	Compliant
3-A 74-07	Sanitary fittings	Compliant
USP Class VI	Biocompatibility	Compliant (diaphragm)
FDA 21 CFR 177	Food contact	Compliant
EC 1935/2004	Food contact materials	Compliant

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## TYPICAL APPLICATIONS

## SECTION 9

## PHARMA &amp; BIOTECH

- WFI distribution
- Purified water systems
- API manufacturing
- Bioreactor connections
- Sterile filling
- Process skids

## DAIRY

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

## FOOD &amp; BEVERAGE

- Filling line shut-off
- Product transfer lines
- CIP/SIP circuits
- Storage tank outlets
- Sampling stations
- Mixing & blending

## 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 (1.5x 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 →](#)

[caspiannedge.com/rfq](https://caspiannedge.com/rfq)