TRI-CLAMPS & SANITARY GASKETS

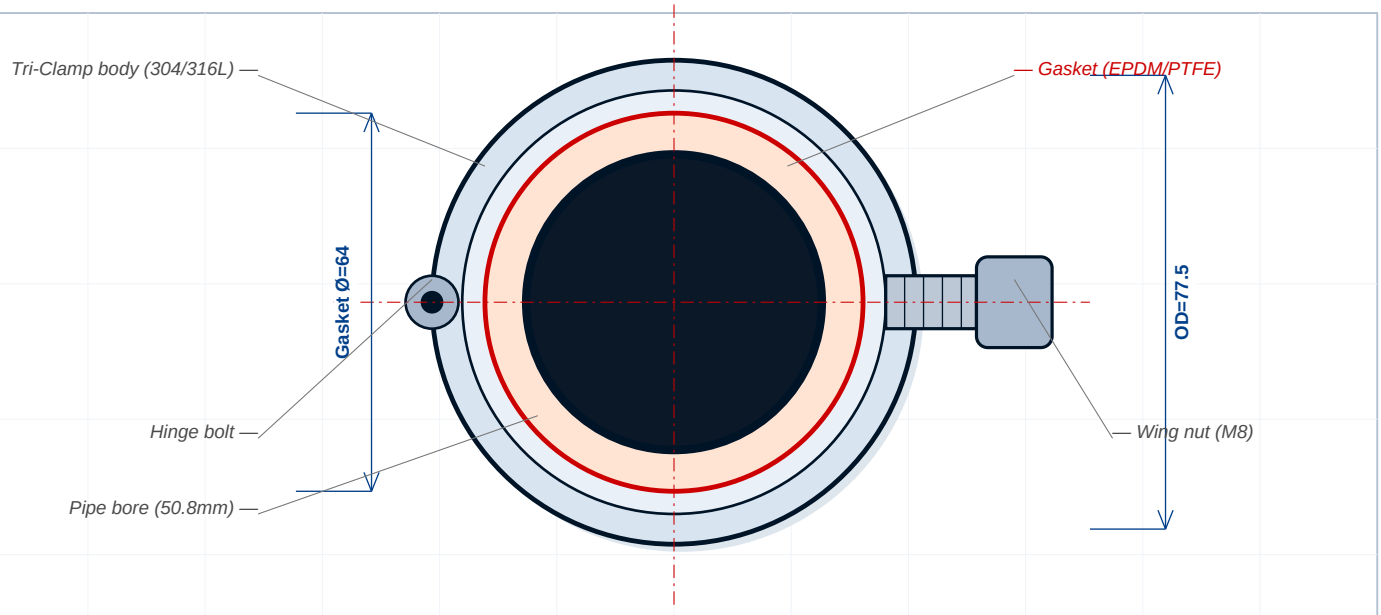
EPDM · SILICONE · PTFE · VITON

Tri-clamp assemblies and sanitary gaskets for hygienic process line connections. Stainless steel clamps available in standard (light-duty) and heavy-duty configurations with single-pin, double-pin or bolt closure. Multiple gasket materials cover the full range of temperature and chemical compatibility requirements. All gaskets comply with FDA 21 CFR 177 for food-contact service.

CLAMP	SIZE RANGE	GASKET	PRESSURE	FDA	STANDARD
304/316L SS	DN15 – DN100	EPDM/PTFE/Sil/Viton	PN10 (10 bar)	21 CFR 177	DIN 32676 / ISO 2852

TECHNICAL DRAWING

DWG: CE-CG-001



EXPLODED SECTION — TRI-CLAMP WITH GASKET

2" DN50 Standard Tri-Clamp Assembly

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

IN THIS DATASHEET

TRI-CLAMPS & SANITARY GASKETS EPDM · SILICONE · PTFE · VITON

DESIGN SPECIFICATIONS SECTION 1

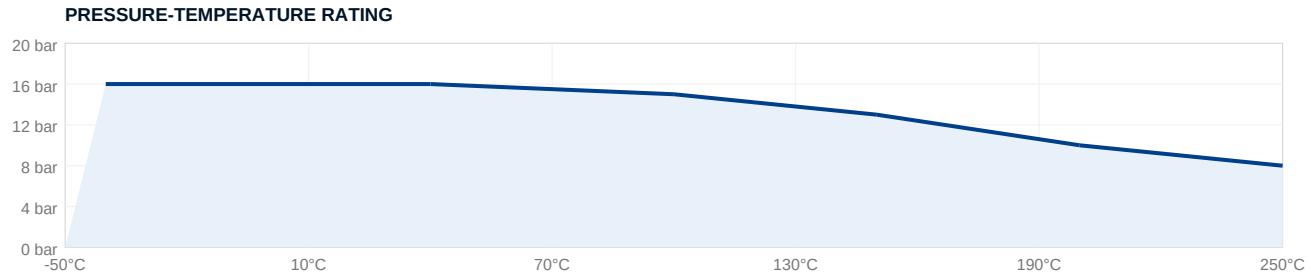
Clamp Style	Single-pin / Double-pin / Bolt
Clamp Material	304 SS std, 316L opt
Gasket Materials	EPDM, PTFE, Silicone, Viton
Sealing	Compression on flange faces
Pressure Class	PN10 standard
Duty Rating	Standard / Heavy-duty
Connection	DIN 32676 / ISO 2852
Documentation	FDA cert by RFQ

OPERATING CONDITIONS SECTION 2

PRESSURE RATING		
Standard Clamp	10	**bar @ amb**
Heavy-Duty	16	**bar @ amb**
Vacuum	-0.95	**bar**
Test	15	**bar**

TEMPERATURE RANGE		
EPDM	-40 to +130	**°C**
PTFE	-50 to +250	**°C**
Silicone	-60 to +200	**°C**
Viton (FKM)	-20 to +200	**°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

Caspian Edge Inc. | North York, Ontario, Canada **caspianedge.com · info@caspianedge.com · 647-675-7504**

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MATERIALS OF CONSTRUCTION
SECTION 5

COMPONENT	MATERIAL	USE	COMPLIANCE
Clamp Body	304 SS	Standard	ASTM A276
Clamp Body HD	316L SS	Heavy-duty	ASTM A276
Hinge Bolt	A2-70 SS	Fastener	ISO 3506
Wing Nut	A2-70 SS	Closure	ISO 3506
EPDM Gasket	EPDM	Std food/dairy	FDA 21 CFR 177.2600
PTFE Gasket	Virgin PTFE	High temp/chem	FDA 21 CFR 177.1550
Silicone Gasket	Pharma silicone	Sterile/SIP	USP Class VI
Viton Gasket	FKM	Chemical service	FDA 21 CFR 177.2600

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	CLAMP OD (MM)	GASKET ID (MM)	GASKET OD (MM)	THICKNESS (MM)
½"	15	50.5	9.4	25.4	3.0
1"	25	50.5	22.1	40.0	3.0
1½"	38	64.0	34.8	50.4	3.0
2"	50	77.5	47.6	64.0	3.0
2½"	63	91.0	60.2	77.4	3.0
3"	76	91.0	72.9	77.4	3.0
4"	100	119.0	97.4	97.4	3.0

STANDARDS & CERTIFICATIONS
SECTION 8

STANDARD	DESCRIPTION	STATUS
DIN 32676	Tri-clamp dimensions	Compliant
ISO 2852	SS clamp couplings	Compliant
3-A 63-04	Sanitary fittings	Compliant
FDA 21 CFR 177	Rubber for food contact	Compliant (gaskets)
USP Class VI	Biocompatibility	Compliant (Silicone)
EHEDG	Hygienic equipment	Compliant

TYPICAL APPLICATIONS SECTION 9

FOOD & BEVERAGE	DAIRY	PHARMA & BIOTECH
• Filling line shut-off	• Pasteurization circuits	• WFI distribution
• Product transfer lines	• Cheese processing	• Purified water systems
• CIP/SIP circuits	• Yogurt production	• API manufacturing
• Storage tank outlets	• Milk separators	• Bioreactor connections
• Sampling stations	• Cream lines	• Sterile filling
• Mixing & blending	• 3-A compliant systems	• Process skids

INSTALLATION GUIDELINES SECTION 10

Tri-Clamp Assembly: 1. Verify ferrule and gasket sizes match (e.g., 2" ferrule + 2" gasket + 2" clamp). **2.** Place gasket between two ferrule flanges. Do not stretch or twist. **3.** Align ferrules and position clamp evenly around the joint. **4.** Engage closure pin/bolt and tighten gradually. Recommended torque: 5–7 N·m. **5.** Do NOT over-tighten — excessive torque deforms gasket and reduces seal life. **Gasket Selection:** • EPDM — standard for food/dairy CIP. Hot water resistant. • PTFE — chemical service, steam, high temp. Lower compressibility. • Silicone — sterile/pharma applications. USP VI compliant. • Viton — chemical service with acids/solvents. **Storage:** Store gaskets flat, away from sunlight and ozone. EPDM/Silicone shelf life: 5 years. PTFE/Viton: 10 years.

MAINTENANCE SCHEDULE SECTION 11

INTERVAL	ACTION	NOTES
Each CIP cycle	Visual leak check	Check joint for product leak
Weekly	Torque verification	Re-tighten if pressure changes
Monthly	Gasket compression check	Look for excessive bulge/cracks
Quarterly	Gasket replacement (high-use)	Critical joints, replace EPDM
Annually	Complete inspection	Replace all gaskets in critical service
As needed	Clamp inspection	Replace if bent/cracked/corroded

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 →

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