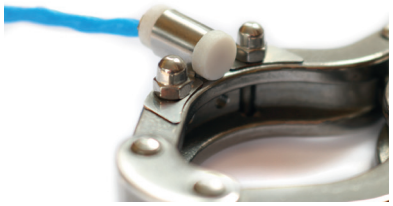
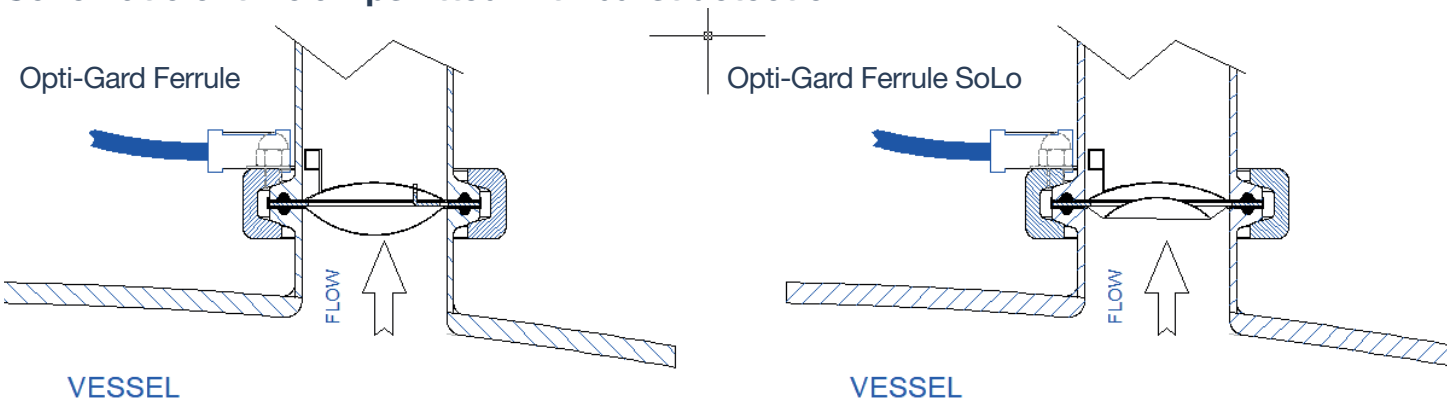
OsecoElfab

TRI-CLAMPS

Stainless Steel tri-clamps for use in biopharmaceutical processes, and sanitary, hygienic and aseptic conditions.



Schematic of tri-clamps fitted with burst detection



Tri-clamps fitted with burst detection are suitable for the following discs:

- Pure-Gard
- Opti-Gard Ferrule
- Opti-Gard Ferrule SoLo
- BioFlat Composite
- Safe-Gard Ferrule

Let us help you with all your pressure relief questions.

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TECHNICAL SPECIFICATIONS

Size range	25-250mm (1"-10")
Burst pressure range	0.3-68.9 barg (4-1,000 psig)
Temperature range	< 482°C 900°F (900°F)
Standard materials	Hastelloy® C, 316 Series Stainless Steel, Nickel, Inconel® 600, Monel®
K_R Value	PRO+KRGL (K_{RGL}): 0.69 PRO+ (K_{RG}): 0.29
Max. Operating Ratio	95% (80% when using Tantalum)
Performance Tolerance	+/-3%
Manufacturing Range	0%
Fragmentation	Non-fragmenting design; minimal fragmentation at larger sizes
Vacuum Service	Withstands full vacuum (14.7 psi) without separate vacuum support
Fluid compatibility	Gas service and gas+liquid service
Torque requirements	See installation guide
Cycling or static service	Suitable for high-cycling applications (tested to x cycles)
Protective linings	Fluoropolymer liner available on process side
Relief Valve Isolation	Suitable for safety relief valve isolation
Disc Surface Finish	Smooth surface on the process side to minimize product build-up
Design Standards	Designed to meet ASME Section XIII standards

Certifications

ASME UD
CRN
PED 2014/68/EU

Related Products

Sensors
AMS
SVT

Holders
PRDI
PRDI - P
PRDH

Burst Pressure Ranges

PRO+*KRGL* Min/Max Burst Pressure @ 22° C (barg) / 72° F (psig)

SIZE		MATERIAL	MIN barg (psig)	SAFETY RELIEF VALVE ISOLATION	PRIMARY AND SECONDARY RELIEF*
DN (mm)	(inches)			MAX barg (psig)	MAX** barg (psig)
25	1	316 Stainless Steel Nickel Inconel Monel Hastelloy C	2.1 (30) 1.5 (22) 2.1 (30) 1.4 (21) 2.0 (29)	27.6 (400)	68.9 (1000)
40	1.5	316 Stainless Steel Nickel Inconel Monel Hastelloy C	1.0 (15) 1.0 (14) 1.0 (15) 1.0 (14) 1.6 (23)	27.6 (400)	68.9 (1000)
50	2	316 Stainless Steel Nickel Inconel Monel Hastelloy C	0.6 (9) 0.6 (8) 0.6 (9) 0.6 (8) 0.6 (9)	20.7 (300)	68.9 (1000)
80	3	316 Stainless Steel Nickel Inconel Monel Hastelloy C	0.6 (9) 0.6 (8) 0.6 (9) 0.6 (8) 0.6 (9)	13.8 (200)	62.0 (900)
100	4	316 Stainless Steel Nickel Inconel Monel Hastelloy C	0.6 (9) 0.6 (8) 0.6 (9) 0.6 (8) 0.6 (9)	13.8 (200)	55.1 (800)
150	6	316 Stainless Steel Nickel Inconel Monel Hastelloy C	0.5 (7) 0.4 (6) 0.5 (7) 0.4 (6) 0.5 (7)	6.9 (100)	51.7 (750)
200	8	316 Stainless Steel Nickel Inconel Monel Hastelloy C	0.4 (6)	1.7 (25)	34.4 (500)
250	10	316 Stainless Steel Nickel Inconel Monel Hastelloy C	0.3 (4)	1.0 (15)	17.2 (250)

**Minimal fragmentation*
***PRO+ Max. pressure values may vary slightly*

Free Flow Area / Minimum Net Flow Area (MNFA)

NOMINAL BORE		MNFA	
DN (mm)	inches	mm^2	Sq. Inch
25	1	557	0.864
40	1.5	1,313	2.036
50	2	2,164	3.355
80	3	4,769	7.393
100	4	8,212	12.73
150	6	18,638	28.89
200	8	32,258	50.0
250	10	50,903	78.9

Burst Tolerance

+/-5% > 2.8 barg +/-5% > 40 psig	+/-0.14 barg ≤ 2.8 barg +/-2 psig ≤ 40 psig

K_R Value (Frictional Loss Factor)

K_R	PRO+	PRO+KRGL
K_{RG}	0.29	
K_{RL}		0.69