

Bio-Gard (DSC BGD) Technical Information

Including specifications, performance data, temperature ranges and schematic

General specifications

Size range	25mm to 50mm (1" to 2")
Burst pressure range	2 barg to 10 barg (29 psig to 145 psig)
Materials available	Stainless steel as standard, other materials available on request
Maximum operating ratio	90% minimum burst pressure (81% nominal burst pressure)
Performance tolerance	+/- 10% (zero manufacturing design range)
Fragmenting / non-fragmenting	Non-fragmenting
Vacuum service	Full vacuum
Fluid compatibility	Liquid, gas, vapour
K _r value	n/a
Torque sensitive	No
Cycle life	Excellent
Reversal ratio	<1.5
Damage ratio	<1.5 fail-safe
Protective linings	n/a
Relief valve isolation	Excellent
Leak tightness	Good
Disc surface finish	Typically 0.4µ Ra or better

Burst pressure range in barg (psig) at 15-30°C (59-86°F)

Nominal bore		Material					
		Stainless steel		Hastelloy		Nickel	
mm	inch	min	max	min	max	min	max
25	1	2.5 (36)	10 (145)	3 (44)	10 (145)	2 (29)	8 (116)
40	1.5	2 (29)	8.5 (123)	2.5 (36)	10 (145)	2 (29)	6 (87)
50	2	2 (29)	8 (116)	2.5 (36)	10 (145)	2 (29)	6 (87)

Free flow area / Minimum net flow area (MNFA)

Nominal bore		MNFA	
mm	inch	mm ²	inch ²
25	1	327	0.51
40	1.5	825	1.28
50	2	1555	2.41

Performance tolerance (Zero manufacturing design range)

Burst Pressure	Tolerance	Burst Pressure	Tolerance
>2 barg	+/- 10%	>29 psig	+/- 10%

Standard temperature ranges °C (°F)

Please note: For temperatures below zero, caution is needed if shock loading is involved.

Metals

Metal	Min temp	Max temp
Hastelloy B2 SB33 5N10665	-200 (-328)	426 (800)
Hastelloy C22 SB574 N06022	-196 (-321)	600 (1112)
Hastelloy C276 SB575 N10276	-196 (-321)	600 (1112)
Inconel Alloy SB 166 N06600	-196 (-321)	482 (900)
Inconel Alloy SB 443 N06625	-196 (-321)	400 (750)
Inconel Alloy SB 425 N08825	-182 (-296)	400 (750)
Monel Alloy SB 164 N04400 Annealed	-182 (-296)	400 (750)
Monel Alloy SB 164 N04400 Hot Worked	-253 (-423)	537 (1000)
Nickel Alloy 2200	-185 (-301)	315 (600)
Nickel Alloy 2201	-185 (-301)	400 (750)
Steel - Stainless Steel (316 & 304)	-196 (-321)	600 (1112)
Steel - Duplex Steel UNS31803 UN32205	-50 (-58)	300 (572)
Titanium SB348 R50400 Gr2	-196 (-321)	315 (600)
Zirconium SB550 R60702 (Zr)	No info	371 (700)
Zirconium SB550 R60705 (Zr +5%Nb)	No info	371 (700)

PFA, PTFE and graphite

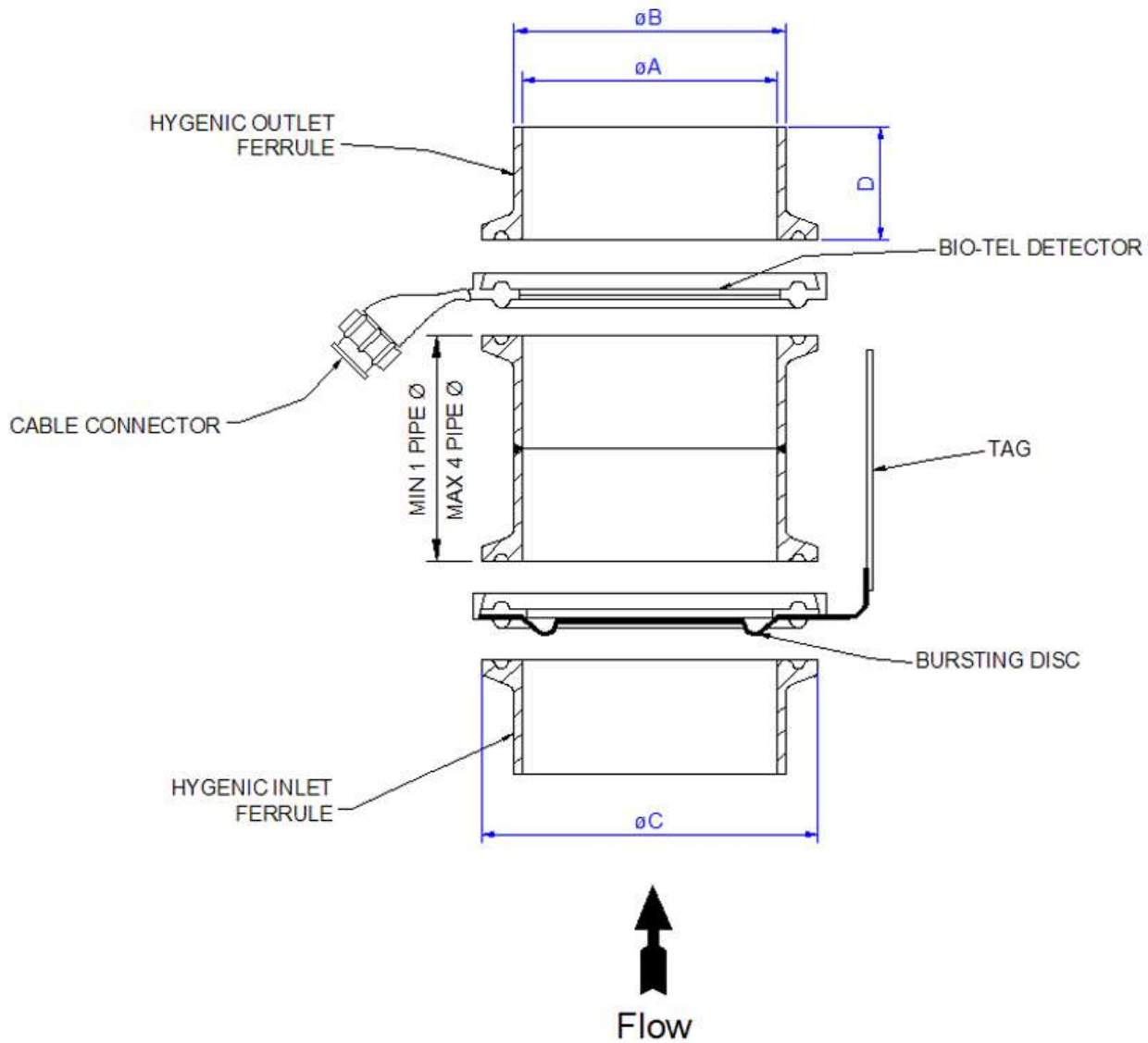
Material	Min temp	Max temp
PFA	-200 (-392)	200 (392)*
PTFE	-200 (-392)	200 (392)*
Graphite MXAS600	-50 (-58)	180 (356)

*Low temperature embrittlement is at -268°C (-450.4°F)

Standard testing ranges °C (°F)

Discs up to 200mm	-45°C (-49°F) to 450°C (842°F)
Discs up to 500mm	Ambient to 450°C (842°F)
OEM products	-75°C (-103°F) to 450°C (842°F)

Product Schematic



ISO 2852 clamp liners					
Nominal bore		A	B	C	D
mm	inch	mm	mm	mm	mm
25	1	22.6	25.6	50.5	21.5
40	1.5	35.6	38.6	50.5	21.5
50	2	48.6	51.6	64	21.5