

Opti-Gard (OPM) Technical Information

Including specifications, performance data, temperature ranges and schematic

General specifications

Size range	50mm to 600mm (2" to 24")
Burst pressure range	0.9 barg to 60 barg (13 psig to 870 psig)
Materials available	Full range for disc suitable with 25cr duplex holder only
Temperature range	Maximum 140°C when used in conjunction with Flo-Tel detection
Maximum operating ratio	95% of minimum burst pressure (92% of nominal burst pressure)
Performance tolerance	+/- 3% (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	Tested to over 100,000 pressure vacuum cycles*
Reversal ratio	n/a with offset tag and System-Loc
Damage ratio	<1 fail-safe
Protective linings	Available on vent and process side
Relief valve isolation	Excellent
Leak tightness	Excellent
Disc surface finish	n/a

(*from full vacuum to 95% of the minimum burst pressure)

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

Nominal bore		Material					
		Hastelloy		Stainless Steel/Inconel		Nickel/Monel	
mm	inch	min	max	min	max	min	max
50	2	0.9 (13)	60 (870)	1.0 (14)	60 (870)	1.0 (14)	45 (652)
65	2.5	0.9 (13)	60 (870)	1.0 (14)	60 (870)	1.0 (14)	45 (652)
80	3	0.5 (7)	50 (725)	0.5 (7)	50 (725)	0.5 (7)	38 (551)
100	4	0.35 (5)	50 (725)	0.35 (5)	50 (725)	0.35 (5)	38 (551)
150	6	0.9 (13)	40 (580)	0.9 (13)	40 (580)	0.9 (13)	30 (435)
200	8	0.9 (13)	30 (435)	0.9 (13)	30 (435)	0.9 (13)	23 (334)
250	10	0.9 (13)	20 (290)	0.9 (13)	20 (290)	0.9 (13)	15 (217)
300	12	0.9 (13)	15 (217)	0.9 (13)	15 (217)	0.9 (13)	11 (159)
350	14	0.9 (13)	12 (174)	0.9 (13)	12 (174)	0.9 (13)	9.5 (137)
400	16	0.9 (13)	6 (87)	0.9 (13)	6 (87)	0.9 (13)	4.5 (65)
450	18	0.9 (13)	6 (87)	0.9 (13)	6 (87)	0.9 (13)	4.5 (65)
500	20	0.9 (13)	6 (87)	0.9 (13)	6 (87)	0.9 (13)	4.5 (65)
600	24	0.9 (13)	6 (87)	0.9 (13)	6 (87)	0.9 (13)	4.5 (65)

Free flow area / Minimum net flow area (MNFA)

Nominal bore		MNFA with no vacuum support (XXX)	
mm	inch	mm ²	inch ²
25	1	494	0.766
40	1.5	1065	1.651
50	2	1799	2.789
65	2.5	2657	4.119
80	3	4336	6.722
100	4	7047	10.923
150	6	15046	23.322
200	8	28625	44.37
250	10	42095	65.248
300	12	61294	95.006
350	14	81278	125.982
400	16	110674	171.545
450	18	137932	213.795
500	20	167571	259.735
600	24	240048	372.075

Performance tolerance (Zero manufacturing design range)

Burst Pressure	Tolerance	Burst Pressure	Tolerance
≤4.48 barg	+/- 0.14 barg	≤65 psig	+/- 2.0 psig
>4.48 barg	+/- 3%	>65 psig	+/-3%

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

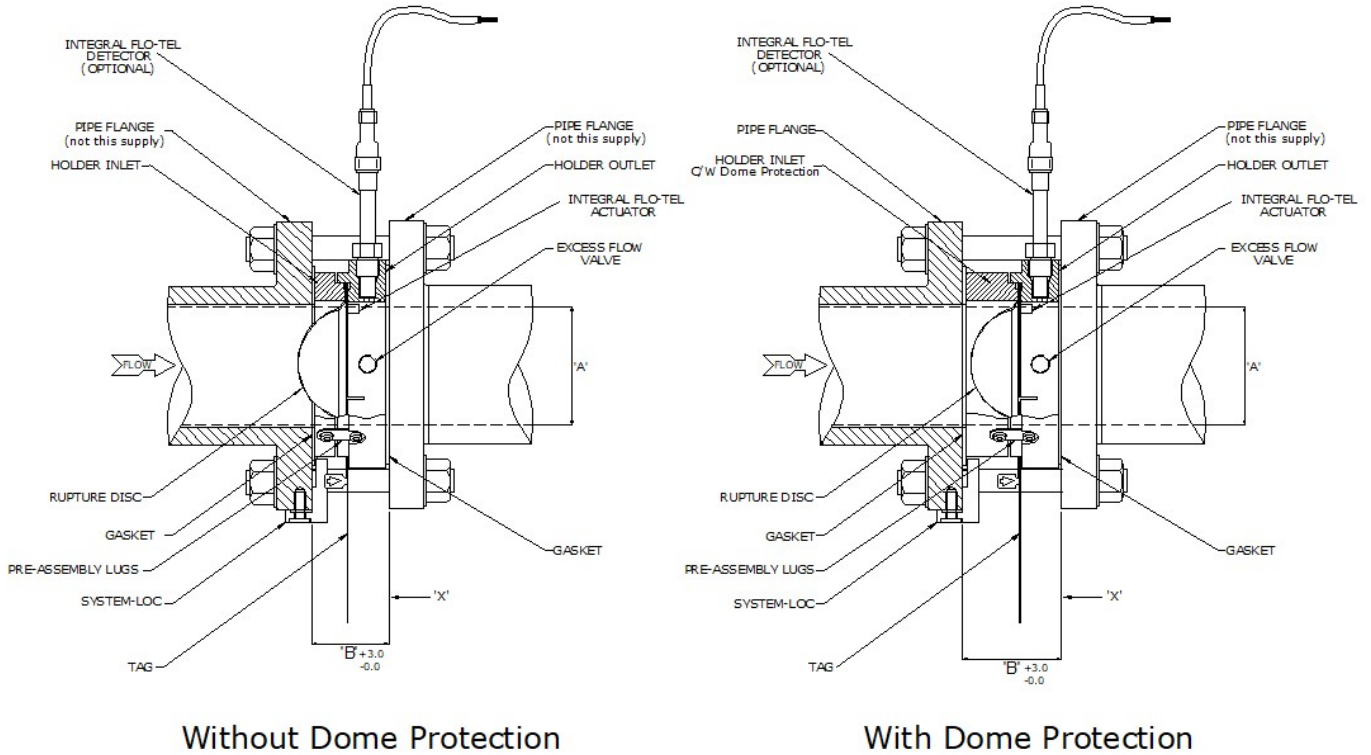
Material	Min temp	Max temp
PFA	-200 (-392)	200 (392)*
PTFE	-200 (-392)	200 (392)*
Graphite MXAS600	-50 (-58)	180 (356)

*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



Without Dome Protection

With Dome Protection

Nominal Bore (A)		Face to face (B)	
mm	Inch	Dome Protection mm	No Dome Protection mm
25	1	40.4 (Std)	-
40	1.5	42.4 (Std)	-
50	2	44.4 (Std)	-
65	2.5	50 (Std)	-
80	3	55 (Std)	-
100	4	58 (Std)	-
150	6	74.5 (Std)	-
200	8	90.5	51.5 (Std)
250	10	105.5	51.5 (Std)
300	12	120.5	51.5 (Std)
350	14	145	51 (Std)
400	16	166	51 (Std)
450	18	182	51 (Std)
500	20	201	51 (Std)
600	24	238	51 (Std)

Flange Specifications	
EN 1092-1 PN Designated	BS EN 1759-1 ANSI Designated
PN 6	ANSI 150
PN 10	ANSI 300
PN 16	ANSI 600
PN 20	ANSI 900
PN 25	ANSI 1500
PN 40	ANSI 2500
PN 50	-
PN 63	-
PN 100	-

Face to face dimensions account for the disc and holder assembly only. They do not account for gasket thickness.