Graphite G2 Disc (G2D) Technical Information

Including specifications, performance data, temperature ranges and schematic

General specifications

Size range	25mm to 300mm (1" to 12")
Burst pressure range	0.07 barg to 20 barg (1 psig to 290 psig)
Materials available	Graphite
Maximum operating ratio	85% of minimum burst pressure (76.5% of nominal burst pressure)
Performance tolerance	+/- 10% (zero manufacturing design range)
Fragmenting / non-fragmenting	Fragmenting
Vacuum service	Support not required above 1.7 barg (24.6 psig)
Fluid compatibility	Liquid, gas, vapour
K_r value	n/a
Torque sensitive	Yes
Cycle life	Average
Reversal ratio	n/a
Damage ratio	<1 fail-safe
Protective linings	Available on both faces
Relief valve isolation	No
Leak tightness	Average
Disc surface finish	n/a

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

Nominal bore		**Material**	
		Graphite	
mm	**inch**	**min**	**max**
25	*1*	0.7 (10)	20 (290)
40	*1.5*	0.48 (7)	15 (217)
50	*2*	0.28 (4.1)	11 (159)
65	*2.5*	0.21 (3)	10 (145)
80	*3*	0.21 (3)	9 (130)
100	*4*	0.14 (2)	6.9 (100)
150	*6*	0.14 (2)	5.2 (75)
200	*8*	0.14 (2)	2.8 (41)
250	*10*	0.14 (2)	2.4 (35)
300	*12*	0.14 (2)	2.1 (30)

Free flow area / Minimum net flow area (MNFA)

Nominal bore		**MNFA without vacuum dial**		**MNFA with vacuum dial (NVS)**	
mm	**inch**	**mm²**	**inch²**	**mm²**	**inch²**
25	*1*	507	0.79	270	0.42
40	*1.5*	1140	1.78	665	1.04
50	*2*	2027	3.16	1347	2.09
65	*2.5*	3167	4.94	2148	3.35
80	*3*	4560	7.11	2924	4.56
100	*4*	8107	12.63	4911	7.65
150	*6*	18241	28.43	10779	16.80
200	*8*	32429	50.54	17295	26.95
250	*10*	50671	78.96	29943	46.66
300	*12*	72966	113.71	43118	66.19

Performance tolerance (Zero manufacturing design range)

Burst Pressure	*Tolerance*	Burst Pressure	*Tolerance*
0.14 – 0.21 barg	*+/-0.07 barg*	2 – 3 psig	*+/- 1 psig*
>0.21 – 1.7 barg	*+/- 0.18 barg*	>3 – 24.7 psig	*+/- 2.5 psig*
>1.7 barg	*+/- 10%*	>24.7 psig	*+/- 10%*

Standard temperature ranges ºC (ºF)

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

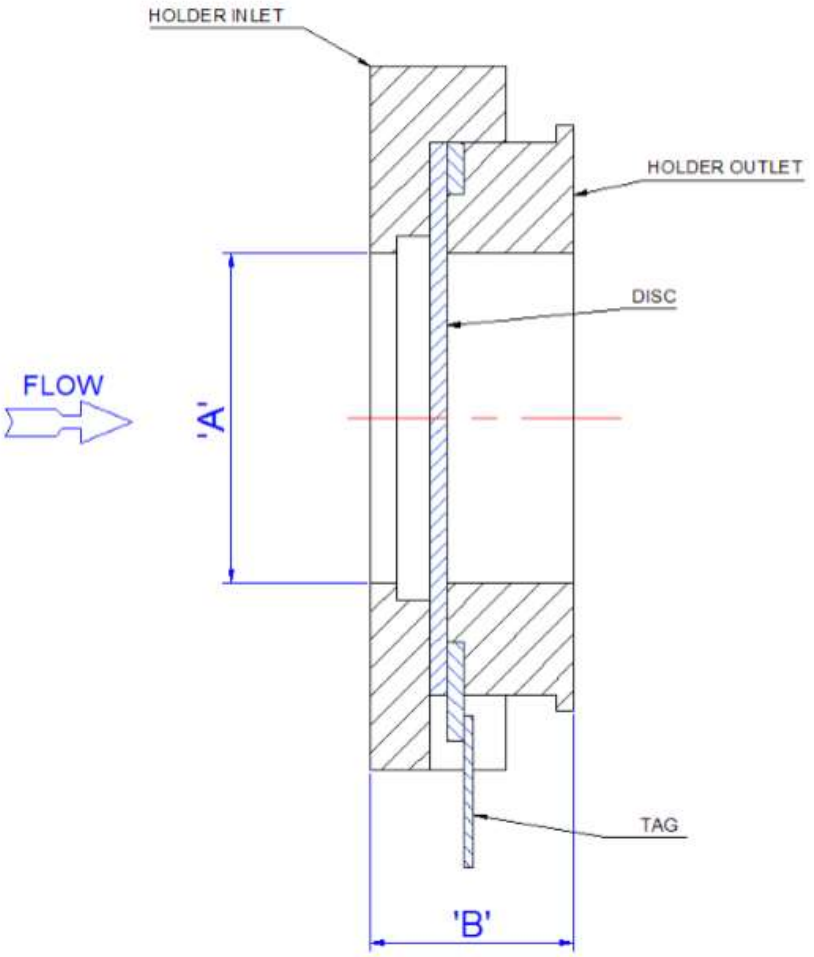
Material	Min temp	Max temp
PFA	-200 (-392)	200 (392)*
PTFE	-200 (-392)	200 (392)*
Graphite MXAS600	-50 (-58)	180 (356)

*Low temperature embrittlement is at -268ºC (-450.4ºF)

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



Nominal Bore (A)		Face To Face (B) (without gaskets)
mm	Inch	mm
25	1	20.8-23.7
40	1.5	22.7-26.2
50	2	24-27.9
65	2.5	26.7-31.5
80	3	31.2 - 36.5
100	4	32.8 - 40.7
150	6	38.1 - 46
200	8	44.6 - 55.5
250	10	47.6 - 58.5
300	12	52.5 - 63

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	-