Domed Composite (DCD) Technical Information

Including specifications, performance data, temperature ranges and schematic

General specifications

Size range	25mm to 800mm (1" to 32")
Burst pressure range	0.3 barg to 20 barg (5 psig to 290 psig)
Materials available	Stainless Steel as standard, others available on request
Maximum operating ratio	85% of minimum burst pressure (81% of nominal burst pressure)
Performance tolerance	+/- 5% (zero manufacturing design range)
Fragmenting / non-fragmenting	Non-fragmenting
Vacuum service	Back pressure support required
Fluid compatibility	Liquid, gas, vapour
K_r value	Not available
Torque sensitive	No
Cycle life	Good
Reversal ratio	<1 fail-safe (dependent on back pressure support)
Damage ratio	<1 fail-safe
Protective linings	Not available
Relief valve isolation	Good
Leak tightness	Good
Disc surface finish	n/a

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

Nominal bore		Material			
		Nickel top section (Fluoropolymer seal)		Stainless Steel/Inconel top section (Fluoropolymer seal)	
mm	**inch**	**min**	**max**	**min**	**max**
25	*1*	1.04 (15)	6.9 (100)	2.1 (30)	13.8 (200)
40	*1.5*	0.7 (10)	6.9 (100)	1.4 (20)	13.8 (200)
50	*2*	0.7 (10)	6.9 (100)	1.4 (20)	13.8 (200)
65	*2.5*	0.7 (10)	6.9 (100)	1.4 (20)	13.8 (200)
80	*3*	0.7 (10)	5.2 (75)	1.4 (20)	18 (261)
100	*4*	0.7 (10)	5.2 (75)	1.4 (20)	17 (247)
150	*6*	0.35 (5)	5.2 (75)	0.7 (10)	13 (189)
200	*8*	0.35 (5)	5.2 (75)	0.7 (10)	10 (145)
250	*10*	0.35 (5)	3.45 (50)	0.7 (10)	8.5 (123)
300	*12*	0.35 (5)	3.45 (50)	0.7 (10)	5.5 (80)
350	*14*	0.35 (5)	4 (58)	0.7 (10)	5.5 (80)
400	*16*	0.3 (4.4)	3.8 (55)	0.55 (8)	5.5 (80)
450	*18*	0.3 (4.4)	3.8 (44)	0.55 (8)	5.5 (80)
500	*20*	0.3 (4.4)	3.8 (44)	0.55 (8)	5.5 (80)
600	*24*	0.3 (4.4)	3 (44)	0.5 (7.3)	5.5 (80)
700	*28*	0.3 (4.4)	2.7 (39)	0.5 (7.3)	4.7 (68)
800	*32*	0.3 (4.4)	2.5 (36)	0.5 (7.3)	4.3 (62)

Free flow area / Minimum net flow area (MNFA)

Nominal bore		With no vacuum support (XXX)		With non-opening vacuum support (NVS)		With opening vacuum support (OVS)	
mm	**inch**	**mm²**	**inch²**	**mm²**	**inch²**	**mm²**	**inch²**
25	*1*	448	0.607	270	0.42	376	0.58
40	*1.5*	1,164	1.655	721	1.12	1,046	1.62
50	*2*	1,908	2.774	1,199	1.86	1,611	2.49
65	*2.5*	3,166	4.678	1,912	2.96	2,780	4.30
80	*3*	4,839	7.216	3,412	5.29	4,359	6.75
100	*4*	7,869	11.81	4,736	7.34	7,253	11.24
150	*6*	17,319	26.246	9,253	14.34	16,399	25.41
200	*8*	30,946	47.19	17,182	26.63	29,711	46.05
250	*10*	48,500	74.22	28,084	43.53	46,951	72.77
300	*12*	69,980	107.4	-	-	68,118	105.6
350	*14*	94,569	146.5	-	-	91,863	142.39
400	*16*	123,785	191.9	-	-	120,687	187.07
450	*18*	156,929	243.2	-	-	153,438	237.83
500	*20*	188,574	292.3	-	-	184,745	286.36
600	*24*	273,397	422.6	-	-	268,782	416.61
700	*28*	373,928	578.9	-	-	368,528	571.22
800	*32*	490,167	764.77	-	-	430,083	666.63

Performance tolerance (Zero manufacturing design range)

Burst Pressure	*Tolerance*	Burst Pressure	*Tolerance*
≤2 barg	*+/- 0.1 barg*	≤29 psig	*+/- 1.45 psig*
>2 barg	*+/- 5%*	>29 psig	*+/-5%*

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

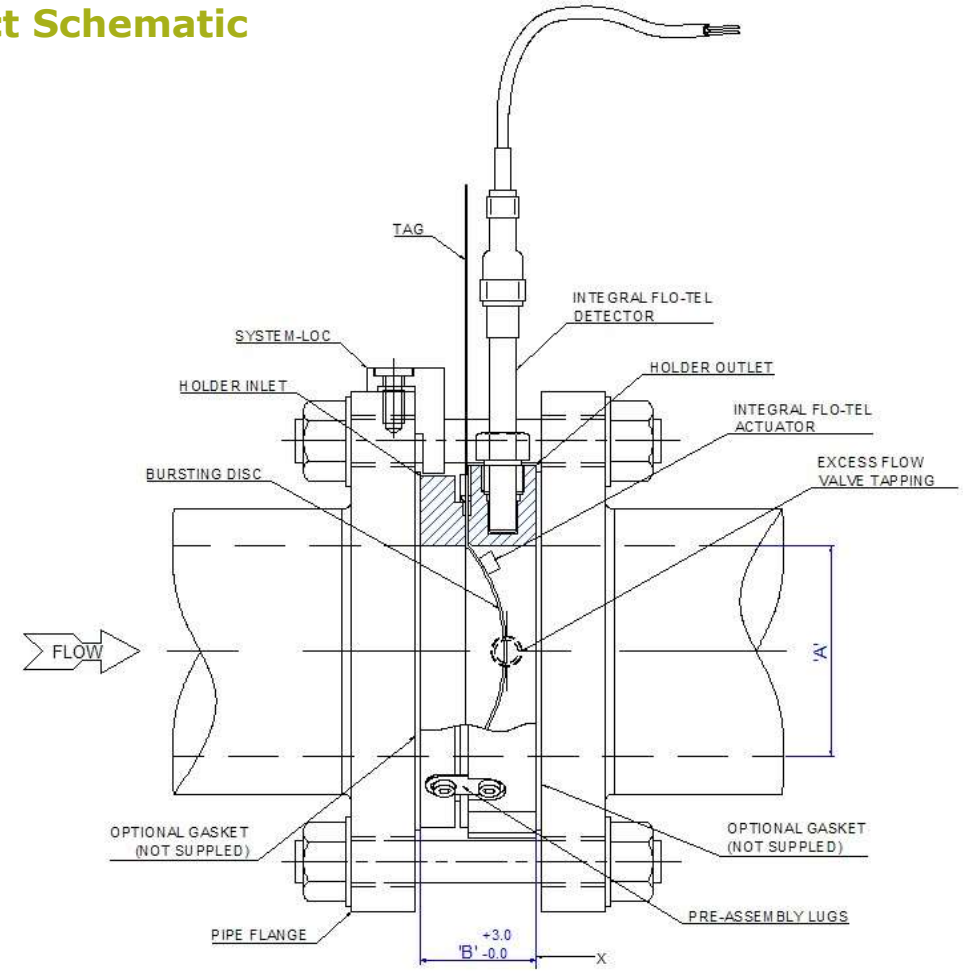
Material	Min temp	Max temp
PFA	-200 (-392)	200 (392)*
PTFE	-200 (-392)	200 (392)*
Graphite MXAS600	-50 (-58)	180 (356)

*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)
mm	inch	mm
25	1	37.9
40	1.5	37.9
50	2	37.9
65	2.5	40
80	3	42
100	4	46.5
150	6	62
200	8	58
250	10	58
300	12	58
350	14	50
400	16	50
450	18	50
500	20	50
600	24	50

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.