

Milli-Gard (MIL) Technical Information

Including specifications, performance data, temperature ranges and schematic

General specifications

Size range	50mm to 300mm (2" to 12")
Burst pressure range	3 mbarg to 500 mbarg (0.044 psig and 7.25 psig)
Temperature range	-40°C to 150°C
Materials available	Stainless Steel as standard, others available on request
Maximum operating ratio	60% of minimum burst pressure (45% of nominal burst pressure)
Performance tolerance	+/- 25% (zero manufacturing design range)
Fragmenting / non-fragmenting	Non-fragmenting
Vacuum service	Full vacuum
Fluid compatibility	Gas, vapour
K _r value	n/a
Torque sensitive	No
Cycle life	Good
Reversal ratio	n/a with standard holder
Damage ratio	<1 fail-safe
Protective linings	n/a
Relief valve isolation	Suitable
Leak tightness	Good
Disc surface finish	n/a

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

Nominal bore		Material	
		Stainless Steel	
mm	inch	min	max
50	2	50 (0.72)	500 (7.25)
80	3	25 (0.36)	400 (5.80)
100	4	18 (0.26)	250 (3.63)
150	6	10 (0.15)	200 (2.90)
200	8	5 (0.07)	150 (2.18)
250	10	5 (0.07)	150 (2.18)
300	12	3 (0.044)	150 (2.18)

Free flow area / Minimum net flow area (MNFA)

Nominal bore		MNFA	
mm	inch	mm ²	inch ²
50	2	1,023	1.59
80	3	2,665	4.15
100	4	4,264	6.64
150	6	9,230	14.38
200	8	16,802	26.18
250	10	26,955	42.01
300	12	38,961	60.72

Performance tolerance (Zero manufacturing design range)

Burst Pressure	Tolerance	Burst Pressure	Tolerance
<14 mbarg (0.2 psig)	+/- 3.5 mbarg (0.05 psig)	>14 mbarg (0.2 psig)	+/- 25%

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

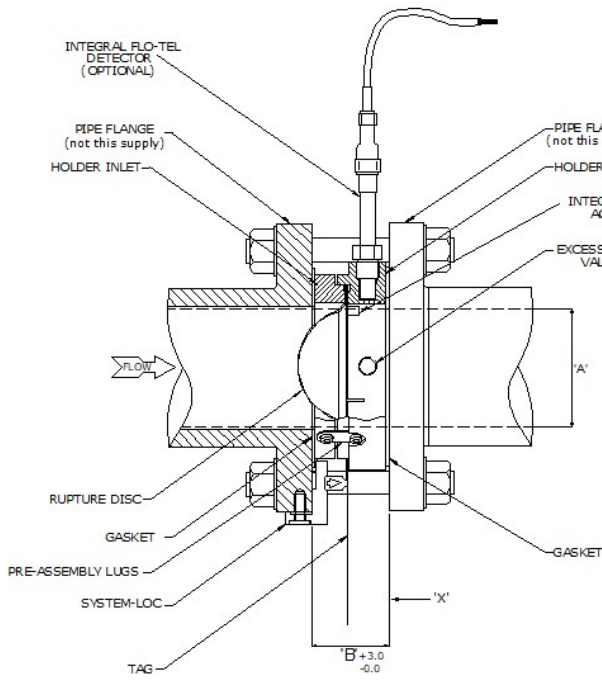
Material	Min temp	Max temp
PFA	-200 (-392)	200 (392)*
PTFE	-200 (-392)	200 (392)*
Graphite MXAS600	-50 (-58)	180 (356)

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

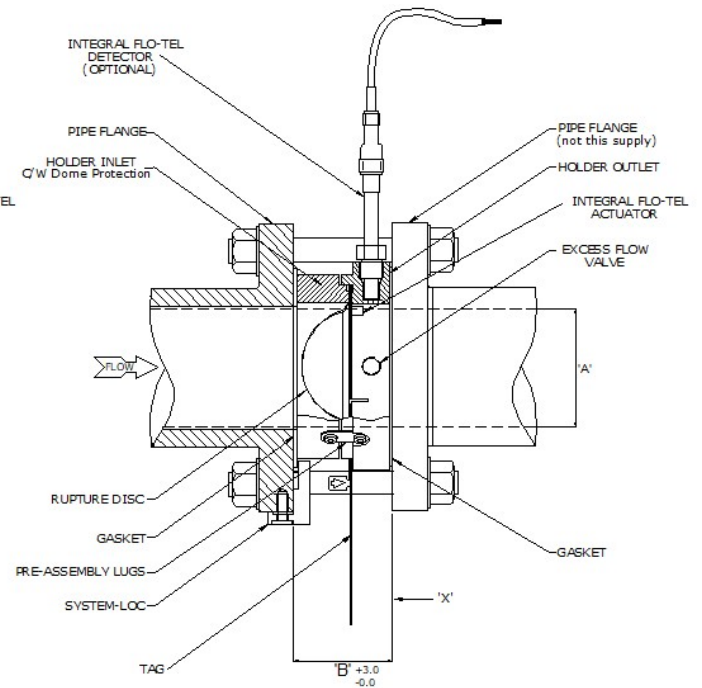
Standard testing ranges °C (°F)

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
50	2	44.4 (Std)	-
65	2.5	50 (Std)	-
80	3	55 (Std)	-
100	4	58 (Std)	-
150	6	74 (Std)	-
200	8	91	52 (Std)
250	10	106	52 (Std)
300	12	121	52 (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.