

TWO-WAY FLAT COMPOSITE

BIDIRECTIONAL LOW-PRESSURE RUPTURE DISC

A single installation for positive and negative pressure protection, particularly suited to low pressure applications



OsecoElfab's Two-Way Flat Composite disc acts as a single design for both positive and negative pressure protection. Manufactured with various slotting arrangements to meet specific application requirements, it is compatible with liquid, gas and vapour applications.

The tri-membrane construction enables the disc to prevent vessel damage from under-vacuum or overpressure conditions. The disc can withstand either the same pressure on both sides of the disc (2WS) or different burst pressures on each side (2WD).

The Two-Way Flat Composite is provided as standard with an actuator for our non-invasive burst sensors Flo-Tel and Flo-Tel XD in one direction only. Burst detection for both directions is possible, subject to process conditions. This requires a customized holder and two Flo-Tel or Flo-Tel XD sensors.

Size	25mm - 300mm
Burst Pressure	0.07 - 2.07 barg
Operating Ratio	40%
Performance Tolerance	+/- 10%
Manufacturing Range	0%

**Let us help you with all
your pressure relief questions.**

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TECHNICAL SPECIFICATIONS



Size range	25mm to 300mm (1" to 12")
Burst pressure range	2WS: 0.07 barg to 2.07 barg (1 psig to 30 psig) 2WD: 0.14 barg to 2.07 barg (2 psig to 30 psig)
Burst pressure ratio (FWD:REV)	2WS: 1:1 2WD: 1:5 maximum
Standard materials	Stainless Steel (others available on request)
Max. Operating Ratio	40% of minimum burst pressure (36% of nominal burst pressure)
Performance Tolerance	+/-10%
Manufacturing Range	0%
Fragmentation	Non-fragmenting design
Vacuum Service	Dependent on disc burst pressure
Fluid compatibility	Gas service, liquid service, vapour service
Torque requirements	Not torque sensitive
Cycling or static service	Static
Protective linings	Available for discs with the same burst pressure in both directions (2WS) only
Relief Valve Isolation	Suitable for safety relief valve isolation
Design Standards	Designed to meet ISO 4126-2:2019 or ASME XIII

Certifications

CE
SIL

Related Products

Sensors

Flo-Tel
Flo-Tel XD

Holders

Forward holders

Accessories

Test-Tel
System-Loc
Excess Flow Valves
Tel-Tale Gauge

Burst Pressure Ranges

Two-Way Flat Composite Min/Max Burst Pressure @ 15-30°C (59-86°F)



SIZE		TOP SECTION MATERIAL *	MIN barg (psig)	MAX barg (psig)
DN (mm)	inches			
25	1	Nickel Stainless Steel / Inconel	0.21 (3) 0.42 (6)	1.04 (15) 2.07 (30)
40	1.5	Nickel Stainless Steel / Inconel	0.14 (2) 0.28 (4)	0.7 (10) 1.38 (20)
50	2	Nickel Stainless Steel / Inconel	0.14 (2) 0.28 (4)	0.7 (10) 1.38 (20)
65	2.5	Nickel Stainless Steel / Inconel	0.14 (2) 0.28 (4)	0.7 (10) 1.38 (20)
80	3	Nickel Stainless Steel / Inconel	0.14 (2) 0.28 (4)	0.7 (10) 1.38 (20)
100	4	Nickel Stainless Steel / Inconel	0.14 (2) 0.28 (4)	0.7 (10) 1.38 (20)
150	6	Nickel Stainless Steel / Inconel	0.07 (1) 0.14 (2)	0.35 (5) 0.7 (10)
200	8	Nickel Stainless Steel / Inconel	0.07 (1) 0.14 (2)	0.35 (5) 0.7 (10)
250	10	Nickel Stainless Steel / Inconel	0.07 (1) 0.14 (2)	0.35 (5) 0.7 (10)
300	12	Nickel Stainless Steel / Inconel	0.07 (1) 0.14 (2)	0.35 (5) 0.7 (10)

*All with fluoropolymer seal

Notes

1) For two-way discs with the same burst pressure in both directions (2WS), the disc burst pressure may be specified anywhere between the minimum and maximum burst pressure ranges shown above. For example, for a 50mm disc you can specify a burst pressure anywhere between 2 psig and 20 psig.

2) For two-way discs with different burst pressures for forward and reverse operation (2WD), the maximum burst pressure specified may not exceed five times the specified low burst pressure. For example, if you specify a low burst pressure of 3 psig for a 50mm disc, the maximum burst pressure you specify may not exceed 15 psig.

Free Flow Area / Minimum Net Flow Area (MNFA)



NOMINAL BORE		HIGH-PRESSURE DIRECTION (2WS)		LOW-PRESSURE DIRECTION (2WD)	
DN (mm)	inches	mm ²	Sq. Inch	mm ²	Sq. Inch
25	1	491	0.76	152	0.23
40	1.5	1,018	1.58	418	0.64
50	2	1,735	2.71	699	1.08
65	2.5	3,117	4.86	1,159	1.79
80	3	4,657	7.26	1,742	2.70
100	4	7,088	11.05	2,732	4.23
150	6	16,513	25.75	6,408	9.93
200	8	29,865	46.58	11,780	18.25
250	10	47,144	73.53	18,566	28.77
300	12	68,349	106.6	26,906	41.70

Notes

1) For two-way discs with the same burst pressure in both directions (2WS), please refer to the column 'High-pressure direction' for the free flow area. The free flow area will be the same for forward or reverse operation of the bursting disc.

2) For two-way discs with different burst pressures for forward and reverse operation (2WD), please refer to both the 'High-pressure direction' and 'Low-pressure direction' columns for the free flow area of the disc. The disc's free flow area will be significantly lower in the low-pressure direction.

Burst Tolerance

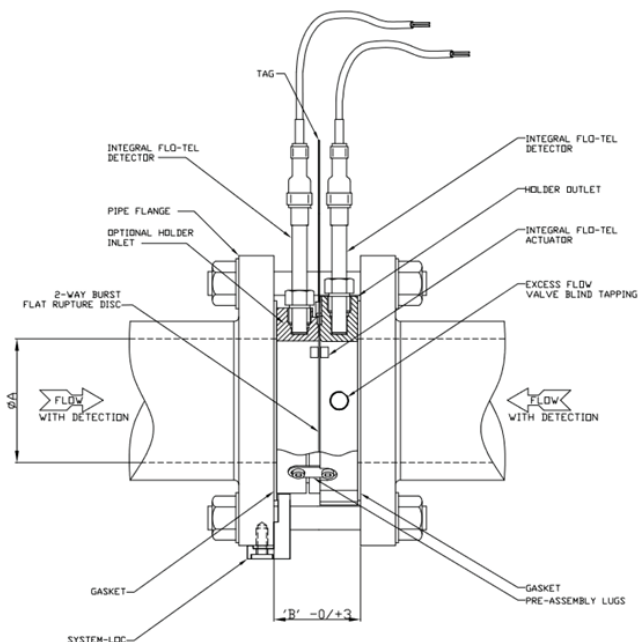
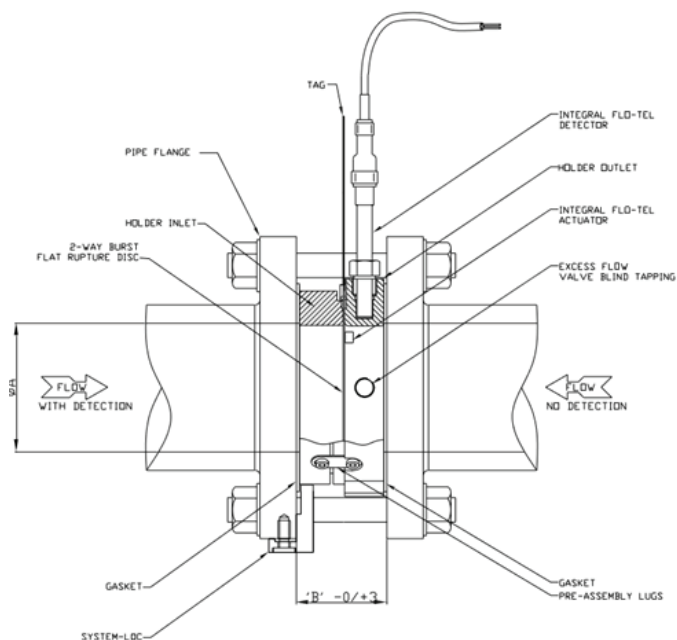
+/- 0.026 barg ≤ 0.24 barg
 +/- 0.053 barg > 0.24 - < 0.5 barg
 +/- 10% ≥ 0.5 barg

+/- 0.375 psig ≤ 3.5 psig
 +/- 0.75 psig > 3.5 - ≤ 7.25 psig
 +/- 10% > 7.25 psig



Detection in one direction only (2WS)

Detection in both directions (2WD)



NOMINAL BORE (A)		FACE-TO-FACE (B)
DN (mm)	inches	With dome protection (mm)
25	1	38.4
40	1.5	38.4
50	2	38.4
65	2.5	40
80	3	42
100	4	47
150	6	62
200	8	58
250	10	58
300	12	58

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	-