



VENT-SAF® Explosion Vent Technology

[Detailed Product Information >>>](#)

Explosions in process handling of combustible materials cost millions of pounds each year in lost production and damage to plant and equipment. Explosion hazards exist when most dusts, gases and mists are mixed with air during manufacture, handling and storage.

VENT-SAF® Explosion vents are designed to minimise damage to containers, ducts and other structures in the event of deflagrations of combustible dusts, gases, or mists. Explosion vents are low burst pressure membranes of calculated area fixed over an opening on the structure to be protected. In the event of a deflagration, the vents provide a rapid and unrestricted opening at a predetermined burst pressure (Pstat) allowing combustion gases to expand and flow through the open vent. The required relief area necessary to protect plant or equipment may be determined using the standards NFPA 68 (1994) or VDI 3673 (1993).

As BS&B offers vents in various designs and materials of construction, the correct vent can be chosen to meet your systems operating conditions. whether your service conditions involve cycling or pulsating process pressure, high operating temperatures, negative or back pressures, a VENT-SAF® vent can be selected to meet your requirements.

Types VSP™, VSS™ and VSE™

- Accurate, reliable and leak tight
- Superior dynamic performance opening in milliseconds, due to low mass compared with composite designs
- One piece metal construction without slits on the process side avoiding product accumulation
- Optional design for aseptic/sanitary applications
- No fragile PTFE seal which may puncture and admit moisture
- Maintenance free
- Operating pressures up to 60% of the minimum marked pressure rating (80% under certain conditions)
- Thermal insulation available to permit use in operating temperatures to 1093°C (2000°F), to reduce heat loss or prevent condensation
- Supplied with integral gaskets ready for installation
- Fail-safe design, if damaged it will provide a relief opening below its marked pressure
- The MBS type magnetic sensor is available to detect functioning of the vent

Sanitary/Aseptic Applications

Types VSP, VSS and VSE Explosion Vents of single section stainless steel construction and smooth internal surface finish are free of cavities. Solid white silicone gaskets are supplied fitted to the vent flange area and FDA approved RTV sealing material applied to the vent perimeter to achieve a sanitary/aseptic construction.

Standard VSP and VSE Explosion Vents are low mass designs. Both remain below the proposed 10 kg/m² European and 2-1/2 Lbs/ft² American NFPA 68 explosion vent mass limits. Below these mass limits, the 'vent efficiency' is deemed to be 1.0. Standard set pressures for VSP and VSE Explosion Vents are 0.1 Bar (1-1/2psi) or lower. Urethane thermal insulation and type MBS electrical open vent sensors can be added within the proposed mass limits.

Typical vent mass data is as follows:

Type	Option	Size		Burst Pressure		Specific Weight		Vent Efficiency
		mm	inch	Bar	Psig	Kg/m ²	Lb/ft ²	
VSP	---	920 x 920	36 x 36	0.1	1.5	9.2	1.9	1.0
VSP	Urethane Insulation. 50 mm Thick	920 x 920	36 x 36	0.1	1.5	10.8	2.2	1.0
VSP	---	920 x 586	36 x 23	0.1	1.5	7.0	1.4	1.0
VSP	Urethane Insulation. 50 mm Thick	920 x 586	36 x 23	0.1	1.5	8.6	1.8	1.0
VSE	---	1130x1130	44 x 44	0.1	1.5	4.0	0.8	1.0
VSE	Urethane Insulation. 50 mm Thick	1130x1130	44 x 44	0.1	1.5	5.6	1.1	1.0
VSE	---	920 x 586	36 x 23	0.1	1.5	4.0	0.8	1.0
VSE	Urethane Insulation. 50 mm Thick	920 x 586	36 x 23	0.1	1.5	5.6	1.1	1.0
EXP	---	920 x 920	36 x 36	0.1	1.5	4.4	0.9	1.0
EXP/V	---	920 x 920	36 x 36	0.1	1.5	8.5	1.7	1.0

For larger explosion vents or burst pressures above 0.1 Barg (1-1/2psi), consult BS&B Safety Systems Ltd, BS&B Safety Systems, Inc.

High mass Explosion Vents may still be used and are necessary for certain very high vacuum resistance levels or for high opening set pressures. Consult BS&B Safety Systems Ltd, BS&B Safety Systems, Inc. for information regarding their proper use.

Rectangular Explosion Vent Standard Metric Sizes.

Standard Products Type VSP,VSE,EXP,EXP/V & LCV.

Size (Internal Frame Dimension) (A X B) (mm. X mm.)	Relief Area * (m. sq.)
645 X 365	0.223

920 X 586	0.520
590 X 320	0.176
305 X 229	0.063
385 X 340	0.122
580 X 354	0.194
520 X 420	0.207
457 X 305	0.130
457 X 457	0.197
850 X 500	0.408
932 X 522	0.468
590 X 490	0.270
645 X 645	0.400
610 X 580	0.340
600 X 300	0.169
610 X 457	0.265
600 X 500	0.286
659 X 659	0.417
653 X 653	0.405
1020 X 720	0.714
495 X 795	0.394
1060 X 760	0.784
1220 X 762	0.904
890 X 457	0.390
910 X 760	0.671
920 X 920	0.823
910 X 910	0.805
1240 X 910	1.101
960 X 915	0.853
990 X 310	0.291
998 X 998	0.976
1040 X 590	0.593
1060 X 300	0.302
1070 X 600	0.622
1130 X 1130	1.248
1350 x 649	0.877

Also Available :

254 X 914
279 X 914*
300 X 800
305 X 305*
305 X 610
305 X 914*
330 X 711

340 X 440*
354 X 589*
356 X 508
363 X 1232
375 X 910*
381 X 381*
381 X 610
385 X 385*
406 X 406
406 X 610
406 X 1118
406 X 1219
432 X 432
432 X 559
432 X 584
448 X 838*
457 X 762*
457 X 838
457 X 889*
457 X 914*
457 X 1181*
476 X 711
480 X 711
483 X 991
483 X 1499*
500 X 610*
500 X 800
500 X 1000
508 X 508
508 X 762*
508 X 965*
508 X 1118
520 X 870
521 X 546
527 X 914
533 X 610
533 X 889*
546 X 546*
500 X 590
575 X 603
584 X 610
591 X 959
599 X 933

600 X 1000*
610 X 610*
610 X 762*
610 X 838
610 X 914*
610 X 1118*
610 X 1194*
610 X 1219*
610 X 1295
620 X 620*
635 X 991
660 X 914*
686 X 1854
711 X 711*
711 X 730
711 X 813
711 X 1016
737 X 889
737 X 1499*
737 X 1562
749 X 749
753 X 1601
762 X 762
762 X 864*
762 X 914*
762 X 1016*
762 X 1118
762 X 1219*
762 X 1372
785 X 997*
800 X 800*
810 X 1510*
826 X 826*
826 X 1080*
826 X 1651*
840 X 1120*
864 X 1130*
915X915*
915 X 1067
915 X 1118*
915 X 1219
915 X 1372
915 X 1524*

(Internal Frame Dimension) (in. x in.)	VSE (ft. sq.)	VSP (ft. sq.)
10 X 36	2.37	N/A
11 X 36	2.62	2.59
11.81 X 23.62	1.84	N/A
11.81 X 31.5	2.47	N/A
12 X 12	0.94	0.92
12 X 18	1.42	1.40
12 X 24	1.90	N/A
12 X 36	2.87	2.83
12.56 X 23.23	1.93	1.90
13 X 28	2.42	N/A
13.39 X 15.16	1.33	1.32
13.39 X 17.32	1.53	1.51
13.93 X 22.83	2.10	2.08
14 X 20	1.85	N/A
14.3 X 48.5	4.65	N/A
14.37 X 25.39	2.42	2.40
14.76 X 35.83	3.53	3.50
15 X 15	1.48	1.46
15 X 24	2.40	N/A
15.16 X 15.16	1.51	1.49
16 X 16	1.69	N/A
16 X 24	2.56	N/A
16 X 44	4.72	N/A
16 X 48	5.16	5.11
17 X 17	1.92	N/A
17 X 22	2.49	N/A
17 X 23	2.60	N/A
17.63 X 33	3.90	3.87
18 X 18	2.15	2.13
18 X 24	2.88	2.85
18 X 30	3.62	3.58
18 X 33	3.99	N/A
18 X 35	4.23	4.19
18 X 36	4.35	4.31
18 X 46.5	5.63	5.59
18.75 X 28	3.51	N/A
18.89 X 28	3.54	3.51
19 X 39	4.99	N/A
19 X 59	7.57	7.51
19.29 X 23.23	2.99	2.97
19.68 X 24	3.16	3.13
19.68 X 31.5	4.17	N/A
19.68 X 39.37	5.22	N/A
20 X 20	2.40	N/A
20 X 30	4.03	3.99
20 X 38	5.12	5.08
20 X 44	5.94	N/A
20.38 X 34.13	4.68	N/A
20.5 X 21.5	2.94	N/A
20.75 X 36	5.03	N/A

21 X 24	3.38	N/A
21 X 35	4.95	4.91
21.5 X 21.5	3.09	3.06
21.65 X 23.25	3.38	N/A
22.63 X 23.75	3.60	N/A
23 X 24	3.70	N/A
23.07 X 36.22	5.64	5.60
23.25 X 37.75	5.92	N/A
23.58 X 36.73	5.85	N/A
23.63 X 39.38	6.29	6.24
24 X 24	3.87	3.83
24 X 30	4.85	4.81
24 X 33	5.34	N/A
24 X 36	5.83	5.79
24 X 44	7.15	7.10
24 X 47	7.64	7.59
24 X 48	7.80	7.75
24 X 51	8.29	N/A
24.38 X 24.38	3.99	3.96
25 X 39	6.60	N/A
25.55 X 53.14	9.21	9.15
26 X 36	6.33	6.28
27 X 73	13.41	N/A
28 X 28	5.29	5.25
28 X 28.75	5.43	N/A
28 X 32	5.87	N/A
28 X 40	7.59	N/A
29 X 35	6.88	N/A
29 X 59	11.64	11.58
29 X 61.5	12.19	N/A
29.5 X 29.5	5.88	N/A
29.65 X 63.03	12.72	12.66
30 X 30	6.08	N/A
30 X 34	6.91	6.86
30 X 36	7.32	7.27
30 X 40	8.14	8.09
30 X 44	8.97	N/A
30 X 48	9.78	9.73
30 X 54	11.02	N/A
30.91 X 39.25	8.23	8.18
31.5 X 31.5	6.72	6.67
31.89 X 59.45	12.91	12.85
32.5 X 32.5	7.15	7.11
32.5 X 42.5	9.38	9.33
32.5 X 65	14.40	14.33
33.1 X 44.1	9.92	9.87
34 X 44.5	10.29	10.24
36 X 36	8.80	8.75
36 X 42	10.28	N/A
36 X 44	10.78	10.72
36 X 48	11.77	N/A
36 X 54	13.25	N/A

36 X 60	14.74	14.67
36 X 72	17.70	N/A
36.18 X 49.32	12.15	12.10
36.22 X 36.22	8.91	8.86
36.22 X 59.84	14.78	14.72
39.5 X 45.5	12.24	N/A
42 X 44	12.60	N/A
42 X 65	18.66	N/A
44 X 44	13.20	13.14
44 X 54	16.23	N/A
44 X 69	20.77	N/A
44.5 X 44.5	13.51	13.63
44.5 X 47.13	14.31	N/A
44.5 X 48.25	14.65	N/A
44.5 X 68	20.70	N/A
44.5 X 81	24.68	N/A
45 X 45	13.81	N/A
48 X 60	19.70	N/A
48 X 97	31.93	N/A
48 X 48	15.74	N/A
52 X 52	18.49	N/A
52 X 53.5	19.03	N/A
6 X 36	1.38	N/A
6 X 9	0.33	0.32
60 X 60	24.67	N/A
7.20 X 3.15	0.13	N/A
7.63 X 7.88	0.38	0.36
77 X 77	40.75	N/A
8.74 X 16.73	0.94	N/A
9 X 12	0.69	0.68
9 X 14	0.81	N/A
9 X 9	0.51	0.50
9.72 X 24	1.53	1.51
9.75 X 25.63	1.64	1.61

*** Notes:**

1. EXP, EXP/V and LCV type vents are available in the sizes indicated for type VSE, contact BS&B Safety Systems, Inc. for applicable relief areas.

Round Explosion Vent							
Standard Inch & Metric Sizes							
INCH	METRIC	VSP	VSE	EXP	EXP/V	EXP-D	EXP-DV
6.00	150	✓	✓	✓	✓	✓	✓
8.00	200	✓	✓	✓	✓	✓	✓
10.00	254	✓	✓	✓	✓	✓	✓
12.00	300	✓	✓	✓	✓	✓	✓
13.00	330		✓	✓	✓		

13.78	350	✓	✓	✓	✓	✓	✓
14.00	356	✓	✓	✓	✓	✓	✓
16.00	406	✓	✓	✓	✓	✓	✓
18.00	457	✓	✓	✓	✓	✓	✓
19.50	495	✓	✓	✓	✓	✓	✓
20.00	508	✓	✓	✓	✓	✓	✓
22.00	559	✓	✓	✓	✓	✓	✓
22.82	580	✓	✓	✓	✓	✓	✓
23.00	584	✓	✓	✓	✓	✓	✓
23.39	600	✓	✓	✓	✓	✓	✓
24.00	610	✓	✓	✓	✓	✓	✓
26.00	660	✓	✓	✓	✓	✓	✓
28.00	711	✓	✓	✓	✓	✓	✓
30.00	762	✓	✓	✓	✓	✓	✓
32.00	813	✓	✓	✓	✓	✓	✓
34.00	864	✓	✓	✓	✓	✓	✓
36.00	914	✓	✓	✓	✓	✓	✓
37.00	940	✓	✓	✓	✓	✓	✓
38.00	965	✓	✓	✓	✓	✓	✓
39.45	1000	✓	✓	✓	✓	✓	✓
40.00	1016	✓	✓	✓	✓	✓	✓
41.00	1041	✓	✓	✓	✓	✓	✓
42.00	1067	✓	✓	✓	✓	✓	✓
42.75	1086		✓	✓	✓		
44.00	1118	✓	✓	✓	✓	✓	✓
48.00	1219	✓	✓	✓	✓	✓	✓
51.00	1295		✓	✓	✓		
54.00	1372		✓	✓	✓		
55.00	1397		✓	✓	✓		
55.12	1400		✓	✓	✓		

66.00	1676	✓	✓	✓
72.00	1829	✓	✓	✓

Detailed Product Information >>>

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