DATA SHEET

LO-V RUPTURE DISC ASSEMBLY

LO-V Rupture Disc and Bolt-Type Holder

DESCRIPTION

The Fike LO-V is a bi-directional rupture disc that is designed to relieve undesired pressure conditions in two different directions. Certain types of applications, such as storage tanks, need protection from vacuum pressure as well as from potential overpressure. The primary relief can be via the reverse-buckling section, which is typically extremely low vacuum pressure, or the higher pressure-activated, forward-acting section. Depending on how the holder is oriented, the LO-V can perform the tasks of two different rupture discs.

NEGATIVE PRESSURE RELIEF

In a typical storage tank application, when there is negative system pressure that is nearing the marked reverse-acting burst pressure of the disc, the buckle section begins to reverse, and the disc seal is contacted by the knife blades located in the holder inlet. This contact causes the seal to be penetrated at the touch point and a triangular pattern is cut to relieve the negative pressure. This buckle section controls the minimum to maximum vacuum relieving pressures. After reversing, the pre-punched holes in the perforated metal top section provide flow through the disc.

Single Blade LO-V Holder

POSITIVE PRESSURE RELIEF

The perforated metal top features 6 holes at the apex of the rupture disc. These holes control the burst pressure in a forward-acting burst scenario. The rupture disc itself has six pre-cut sections that, in relieving positive overpressure, will open in a flower petal arrangement allowing quick relief. The LO-V is a non-fragmenting rupture disc and will withstand an 80% operating to stamped burst pressure ratio in the positive direction.

FEATURES AND BENEFITS

- Bi-directional rupture disc - one rupture disc, two jobs
- Unique blade design offers superior opening and flow relief - patent pending
- Sanitary and bolt-type configurations
- Non-fragmenting
- 3A approved by third party verification
- Optional single-direction burst
- Available with integral burst indicator (optional). For technical specifications, please refer to BurstCheck Line of Rupture Disc Burst Indicators, data sheet R.1.02.01

APPROVAL:

- 3-A

ACCESSORIES

Both options mentioned below come with the unique Fike LO-V holder design which provides superior flow relief in the B-Burst direction. By removing the 3rd blade, the LO-V holder actually becomes a single blade that is bent in the middle. Less blade in contact with the seal material means that there is less resistance to cutting and testing shows that this unique blade design relieves pressure up to 3 times more effectively than conventional 3-blade models! Another benefit to this design is that a critical weld joint is eliminated. Stringent sanitary requirements can make weld joints problematic, making it necessary to grind and polish them to prevent crevices that would otherwise be potential hideouts for material build-up. Fike's ferrule-style LO-V holder has the most current 3-A authorization and is an excellent choice for your special applications.

- Up to 3 times better flow relief in the "B-burst" or reverse direction
- Patents-pending blade design offers less resistance to cutting
- One less knife blade eliminates a weld joint and a potential trap for contaminants
- Sanitary-style holder and disc combination is 3-A authorized
- Two LO-V holder options are available depending on your application(s)

BOLTED TYPE HOLDERS

Designed for installation between ANSI, JIS or DIN class flanges and are available in sizes 3" to 8". Proper rupture disc alignment is secured with the use of locator pins and the knife blade assembly is permanently affixed in the holder inlet. This holder is available in 316 SST.

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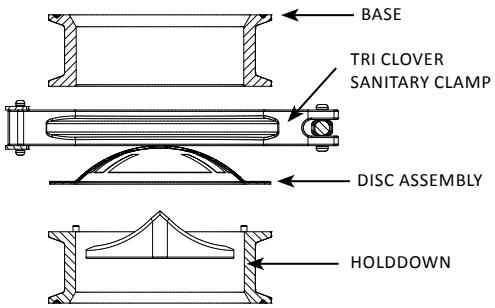
SANITARY/HYGIENIC FERRULE TYPE HOLDERS

The first of the knife blade rupture disc holders to be designed specifically with no crevices or ledges, making it one of the most current 3-A authorized devices in its class. This holder is designed to operate leak-free, helping to protect your process from contamination and the release of hazardous product into the surrounding environment. The included sanitary-type quick disconnect clamp allows for fast installation and rupture disc replacement. This holder is available in 316 SST.



Lo-V sanitary rupture discs are designed for disassembly for manual or COP (Clean out of Place) cleaning. Lo-V rupture discs are not designed for CIP (Clean In Place) applications.

Note: The LO-V rupture disc and LO-V sanitary holder match up to the corresponding ferrule sizes shown in the table below.

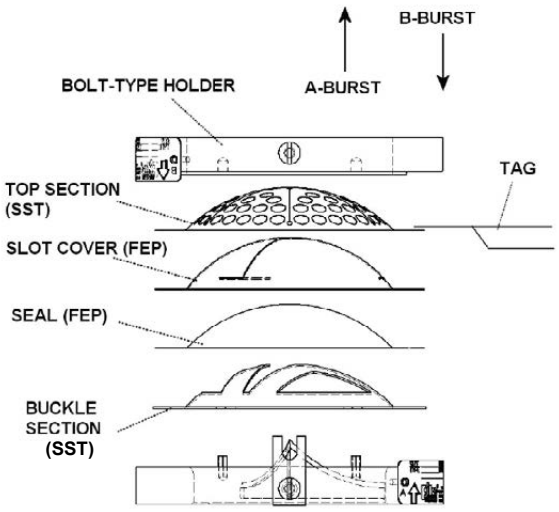
Rupture Disc Sizing	**IN**	3	4	6	8
	DN	80	100	150	200
Corresponding Sanitary Ferrule Sizing	**IN**	4	6	8	10
	DN	100	150	200	250

RECOMMENDED TEMPERATURE LIMITS

Buckle Section	**Temperature Limits**	
316 SST	-40°F/200°F	-40°C/93°C

Note: For higher temperatures, please consult Fike.

EXPLODED VIEW OF LO-V DISC AND BOLT-TYPE HOLDER



A-burst:	High pressure direction
B-burst:	Low pressure direction
Top section:	The controlling element in the “A-burst” direction. Process pressure is applied to the top section through the seal
Slot Cover:	Protects the seal from abrasion on the hole edges of the top section. Pre-slit so it adds no strength to the burst pressure in either direction
Seal:	The seal transfers differential pressure to either the top or the buckle section
Buckle Section:	The controlling element “B-burst” direction. Pressure applied through the seal to the buckle section eventually results in reversal

“A” DIRECTION (TOP SECTION) BURST PRESSURES PSIG (BARG) @ 72°F/22°C

“A” Direction Burst Pressure Range				
IN (DN)	3 (80)	4 (100)	6 (120)	8 (200)
Min. BP	8 (.55)	7 (.48)	4 (.28)	3 (.21)
Max. BP Bolted Holder	150 (10)	120 (8.6)	100 (6.9)	75 (5.2)
Max. BP Sanitary Holder	100 (6.9)	75 (5.2)	50 (3.4)	40 (2.8)

“A” DIRECTION MANUFACTURING RANGES AND RUPTURE TOLERANCES

Burst Pressure		Mfg. Range	Rupture Tolerance	Performance Tolerance
PSIG	BARG			
3 - 5.9	.21 - .41	± 40%	± 25%	± 2 PSIG (.14 BARG)
6 - 8.9	.41 - .61		± 20%	
9 - 12.9	.62 - .89	± 30%	± 15%	
13 - 14.9	.9 - 1.02	+20/-10%	± 10%	
15 - 19.9	1.03 - 1.37		± 2 PSIG	
20 - 39.9	1.38 - 2.75	+14/-4%		± 10%
40 - 50.9	2.76 - 3.51		± 5%	
51 - 100.9	3.52 - 6.96	+10/-4%		
101 - 170	6.97 - 11.72	+7/-4%		

“B” DIRECTION (BUCKLE SECTION) BURST PRESSURES AND TOLERANCES

Disc Size IN (DN)	“B” Direction Burst Pressure Ranges and Rupture Tolerances		
	Initial Relief (in WC @ 72°F)		Rupture Tolerance
	316 Buckle Section Recommended Temperature Limits: -40°F/200°F (-40°C/93°C)		
	Min	Max	
3 (DN80)	4	30	+6 in WC from initial relief rating
4 (DN100)	4	30	
6 (DN150)	1	30	
8 (DN200)	1	30	

Note: Minimum burst pressure required for use of a burst indicator is 6 in WC for all sizes.

“B” DIRECTION OPERATING RATIO

≤ 10 in WC = (initial relief rating -1 in WC)
> 10 in WC = (initial relief rating x 0.90)

RELIEF AREA SPECIFICATIONS

Disc Size IN (DN)	“A” Direction Flow Area		
	Specified Buckle Section Burst Pressure (in WC)		
	From	Up to	Area (in^2)
3 (DN80)	4	15	6.39
	15	26	6.45
	26	34	6.74
4 (DN100)	4	17	11.21
	17	34	10.89
6 (DN150)	1	10	26.32
	10	20	26.07
	20	34	25.71
8 (DN200)	1	12	44.71
	12	34	41.12

Note: Sanitary holder uses one disc size smaller than the mating ferrule size.

RELIEF AREA SPECIFICATIONS (CONTINUED)

Requested "B" Burst Pressure (In. WC)	"B" Direction Flow Area (in2) by Size* at Maximum Relieving Pressure (i.e. Requested BP + 6 in WC)			
	3 IN	4 IN	6 IN	8 IN
1	n/a	n/a	0.414	1.555
2	n/a	n/a	0.815	2.223
3	n/a	n/a	1.142	2.768
4	0.053	0.265	1.149	3.230
5	0.072	0.312	1.659	3.629
6	0.090	0.353	1.870	3.982
7	0.106	0.390	2.059	4.297
8	0.120	0.423	2.230	4.583
9	0.133	0.454	2.386	4.843
10	0.144	0.482	2.530	5.083
11	0.156	0.508	2.663	5.304
12	0.166	0.532	2.787	5.511
13	0.175	0.554	2.903	5.704
14	0.184	0.576	3.012	5.886
15	0.193	0.596	3.114	6.057
16	0.201	0.615	3.211	6.218
17	0.208	0.633	3.303	6.372
18	0.216	0.650	3.391	6.518
19	0.223	0.666	3.474	6.657
20	0.229	0.681	3.554	6.790
21	0.236	0.696	3.631	6.918
22	0.242	0.711	3.704	7.040
23	0.247	0.724	3.774	7.157
24	0.253	0.738	3.842	7.270
25	0.258	0.750	3.907	7.379
26	0.264	0.763	3.970	7.484
27	0.269	0.774	4.031	7.585
28	0.274	0.786	4.090	7.684
29	0.278	0.797	4.147	7.779
30	0.283	0.808	4.202	7.871

Note: The "A' direction flow is limited by the open area of the buckle section which is variable based on the "B" direction burst pressure.

Performance Attributes			Process Media	Rupture Disc Holders	
Operating Ratio	Non-Fragmenting	Sanitary	Vapor Gas	Bolted	Ferrules
					
A - 80% B - 90%	yes	yes	yes	yes	yes

HOW TO SPECIFY

Previous Lot Number:	
OR	
Size:	
Holder Type*:	
Flange Rating (if applicable):	
"A" Burst Pressure:	@ (Temperature)
Manufacturing Range:	Std: Other:
"B" Burst Pressure:	
Integral BI:	Yes / No
Certification:	Yes / No

** LO-V holder part number designations:* *A8840-1-x For sanitary configuration ("x" denotes size)*
A8840-2-x For bolted type configuration ("x" denotes size)

Form No. R.1.07.01-10, October 2014. Specifications are subject to change without notice.