

Flat Composite Discs Type AD, AD-V, AD-V-RI, AD-H

Description

The Fike AD Series Bursting Discs are low-pressure relief devices, specifically designed for overpressure protection of atmospheric vessels and for isolating equipment such as safety relief valves from downstream conditions. The flat composite discs consist of several component parts, which form a single unit. The design principle used to ensure a predictable bursting pressure is a tension failure of a mechanically weakened top section.

Available Types

General Purpose - Model AD

The basic AD Series Bursting Disc will offer controlled burst pressure throughout a wide range of sizes and pressures without the need for using a holder.

Vacuum Service - Model AD-V

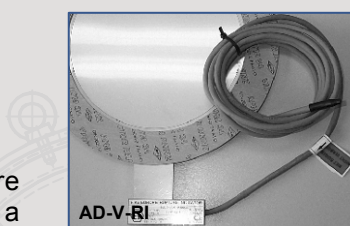
The AD-V Series Bursting Disc has the same burst characteristics as the AD, but in addition it provides full vacuum resistance throughout the entire range.

Rupture Indicator - Model AD-V-RI

The bursting of a low-pressure disc will often go unnoticed, especially when it is used for sealing atmospheric vessels. Similarly when low pressure bursting discs are used to isolate safety valves from downstream conditions it may be difficult to detect that the disc has burst as the relief valve will reseat when pressure returns to normal conditions. In order to solve this problem an AD type disc is available with a built-in bursting indicator.

Hygienic Service - Model AD-H

For applications where the process requires smooth surfaces, the model AD-H offers an outstanding solution.

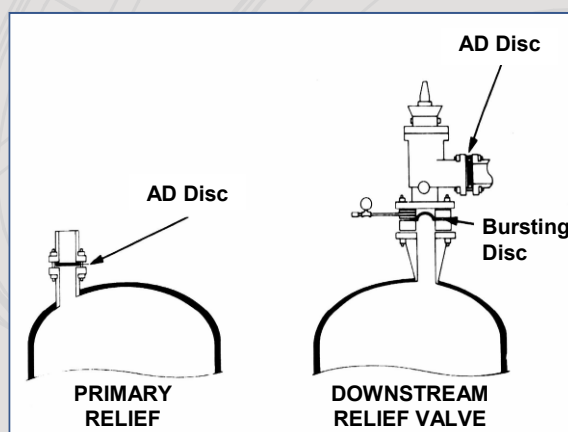


Features and Benefits

- No holder required
- Compact design
- Torque / installation insensitive
- Good corrosion resistance

Applications

The Fike AD Series bursting discs are used for sealing atmospheric vessels to eliminate environmentally harmful emissions and to protect them against slight over- or vacuum pressures. The AD Series discs are also used to isolate the atmospheric side of safety relief valves in order to protect them from downstream conditions.



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Specifications

Type of Disc		AD	AD-H	AD-V	AD-V-RI
Action		Forward-acting			
Available Size Range		DN40-DN600 (1 1/2"-24")			DN40-DN300 (1 1/2"-12")
Material	Gasket (1)	Non-Asbestos	Non-Asbestos	Non-Asbestos	Non-Asbestos
	Top Section (2)	SST			
	Top Alignment Ring (2)	SST			
	Seal	Fluoropolymer			
	Bottom (2)	SST	-	-	-
	Vacuum Support (2)	-	-	SST	SST
	Retaining Ring (2)	-	-	SST	SST
	Gasket (1)	Non-Asbestos	Non-Asbestos	Non-Asbestos	Non-Asbestos
Max. Operating Temperature		260°C	180°C	260°C	260°C
Operating Ratio		55%			
Same Burst Pressure both directions (3)		No	No	No	No
Rupture Indicator		No	No	No	Yes
Max. Voltage		-	-	-	24V AC/DC
Max. Current		-	-	-	50mA
Max. Resistance before Bursting		-	-	-	30 Ohm
Max. Ambient Temperature		-	-	-	80°C
Cycling Duty (pos. to neg.)		MC			
Pulsating Duty (light)		R			
Pulsating Duty (heavy)		MC			
Full or Partial Vacuum Rating		Partial	NR	Full	Full
Polymerisation Process		NR	R	NR	NR
Hydraulic Service		R			
Minimal Fragmentation (4)		R			
Seat Configuration		Flat			
Use between Standard Flanges	ANSI 150	Yes			
	PN10/16 (EN/ISO/DIN)	Yes			

R = RECOMMENDED MC = MARGINAL CONDITIONS NR = NOT RECOMMENDED

- (1) Standard gaskets are asbestos-free. Other materials (such as fluoropolymer) can be supplied on request.
- (2) Standard material of construction is AISI 300 series stainless steel (AISI 316L and/or AISI 304). Other materials are available on request.
- (3) Same burst pressure both directions : consult factory.
- (4) The AD series bursting discs will, subject to rates of pressure rise, give minimal fragmentation of the metallic parts. Seal, however, may be ejected.

Burst Pressure in mbarg at 22°C ⁽¹⁾

Size	DN	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
	Inch	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
Minimum Burst Pressure (mbarg)	AD, AD-H (2), AD-V (3)	515	355	230	160	245	160	125	50	40	35	35	35	35	50	40
	AD-V-RI	800	600	500	430	350	300	260	210	175	160	-	-	-	-	-
Maximum Burst Pressure (barg)	All	10	6	3	2.0	1.5	1.5	1.3	1.3	1.3	1.3	1.3	1.3	1.0	1.0	1.0
Relief Area (cm²)	AD, AD-H	9.6	15.9	25.2	38.7	70.4	120.8	169	300.8	480.7	693.7	858.4	1142.5	1467.1	1832.2	2684.2
	AD-V, AD-V-RI	7.1	13.9	22.1	34.7	65.8	115	161.7	286.5	461.9	615.8	-	-	-	-	-

- (1) If AD series bursting discs are used in combination with other types of bursting discs, the bursting pressure of the AD type disc should be sufficiently lower than the minimum relief pressure of the upstream disc to ensure proper functioning.
- (2) AD-H not available for sizes > DN250
- (3) AD-V not available for DN25/1" & sizes > DN300

Performance Tolerances ^{(1) (2)}

Nominal BP ≤ 250 mbarg : ± 25 mbar
250 mbarg < Nominal BP ≤ 500 mbarg : ± 50 mbar
500 mbarg < Nominal BP ≤ 700 mbarg : ± 70 mbar
Nominal BP > 700 mbarg : ± 10%

- (1) Consult Fike for possibility to reduce tolerances.
- (2) Consult Fike for tolerances on AD-H.

Performance tolerance as specified by ISO/EN is a total tolerance which includes both manufacturing and bursting tolerance.

As per ISO/EN the bursting discs can be marked with:
Specified burst pressure with a performance tolerance (in % or a value).

E.g.: 10 barg at 22°C ± 10% (± 1 barg)

Maximum and minimum burst pressure

E.g.: Max 11 barg at 22°C - min 9 barg at 22°C

On request bursting discs can be marked as per ASME code section VIII with the average burst test result and the bursting tolerance of ± 5% for burst pressures ≥ 2.76barg, (0.15 barg for burst pressures < 2.76 barg).

Type	Performance Attributes			Process Media		Bursting Disc Holders	
	Operating ratio	Vacuum resistance	Sanitary	Liquid	Vapour/gas	Ferrules	Companion Flanges
AD / AD-V	55%	Yes	D.N.A.	Yes	Yes	D.N.A.	Yes
AD-H	55%	No	Yes	Yes	Yes	Yes	Yes

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