

FLAT COMPOSITE DISCS

TYPE AD, AD-V, AD-V-RI, AD-H, AD-H TC

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.

BURSTING 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 reseal when pressure returns to normal conditions. In order to solve this problem an AD type disc is available with a built-in bursting indicator.



APPROVALS:

- CE marked
- 3A (only AD-H & AD-H TC)



HYGIENIC SERVICE – MODEL AD-H / AD-H TC

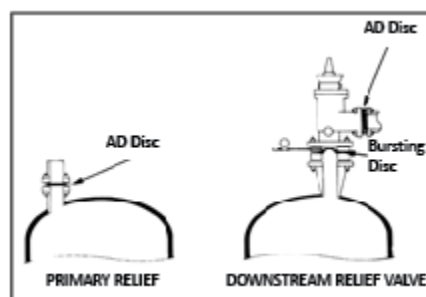
For applications where the process requires smooth surfaces, the models AD-H and AD-H TC offer an outstanding solution. AD-H TC is designed for use in industry standard TriClover, ASME BPE, DIN 32676 and ISO 2852 sanitary fittings.

FEATURES AND BENEFITS

- No special holder required
- Compact design
- Torque / installation insensitive
- Good corrosion resistance
- Standard burst in one direction – optionally burst in two directions
- AD-H TC can be supplied 3A compliant – specify when ordering


APPLICATIONS

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





SPECIFICATIONS

Type of Disc		AD	AD-H	AD-V	AD-V-RI 	AD-H TC
Action		Forward-acting				
Available Size Range		DN40 – DN600 (1.5” – 24”)		DN40 – DN300 (1.5” – 12”)		1.5” – 4”, DN40 & DN50
Material	Gasket ¹	Non-asbestos				Silicone, EPDM, Viton or PTFE ²
	Top Section ³	AISI 300 series stainless steel				
	Top Alignment Ring ³	AISI 300 series stainless steel				
	Seal ³	Fluoropolymer				
	Bottom ³	SST	-	-	-	-
	Vacuum Support ³	-	-	SST	SST	-
	Retaining Ring ³	-	-	SST	SST	-
	Gasket ¹	Non-asbestos				Silicone, EPDM, Viton or PTFE ²
Max. Operating Temperature		260°C	180°C	260°C	260°C	For gasket material EPDM -40°C to 149°C Silicone -40°C to 232°C Viton -28°C to 232°C PTFE -28°C to 232°C
Operating Ratio		55%				
Same BP Both Directions ⁴		No				
Burst Indicator		No	No	No	Yes	Yes
Max. Voltage		-	-	-	24V AC/DC	-
Max. Current		-	-	-	50 mA	-
Max. Resistance Before Bursting		-	-	-	30 ohm	-
Max. Ambient Temperature		-	-	-	80°C	-
Cycling Duty (pos to neg)		NR				
Pulsating Duty (light)		NR				
Pulsating Duty (heavy)		NR				
Full or Partial Vacuum Rating		Partial	NR	Full	Full	Partial
Polymerisation Process		NR	R	NR	NR	R
Hydraulic Service		R				
Minimal Fragmentation ⁵		R				
Seat Configuration		Flat				Ferrule Type
Use between Standard Flanges		ANSI 150 and PN10/16 (EN/ISO/DIN)				ASME BPE, DIN 32676, ISO 2852

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) All gaskets are virgin type USP class VI & 3A approved (except white EPDM), compliant with EU regulations 1935/2004 and 2023/2006.

(3) Standard material of construction is AISI 300 series stainless steel (AISI 316L and/or AISI 304). Other materials are available on request.

(4) Same burst pressure both directions: consult factory.

(5) 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 2}

Size	DN	25	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
	INCH	1	1.5	2	2.5	3	4	5	6	8	10	12	14	16	18	20	24
Minimum Burst Pressure (mbarg)	AD	1860	515	355	230	160	245	160	125	50	40	35	35	35	35	50	40
	AD-V	-	515	355	230	160	245	160	125	50	40	35	-	-	-	-	-
	AD-V-RI	-	800	600	500	430	350	300	260	210	175	160	-	-	-	-	-
	AD-H	-	-	483	-	345	276	-	207	172	138	138	103	86	69	69	69
	AD-H TC	-	689 ³	552 ⁴	-	413	345	-	-	-	-	-	-	-	-	-	-
Maximum Burst Pressure (barg)	AD	5.0	10.0	6.0	3.0	2.0	1.5	1.5	1.3	1.3	1.3	1.3	1.3	1.3	1.0	1.0	1.0
	AD-V, AD-V-RI	-	10.0	6.0	3.0	2.0	1.5	1.5	1.3	1.3	1.3	1.3	-	-	-	-	-
	AD-H	-	-	1.03	-	1.03	1.03	-	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
	AD-H TC	-	1.03	1.03	-	1.03	1.03	1.03	-	-	-	-	-	-	-	-	-
Relief Area (cm ²)	AD, AD-H	3.4	9.6	15.9	25.2	38.7	70.4	120.8	169.0	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	115.0	161.7	286.5	461.9	615.8	-	-	-	-	-
	AD-H TC	-	7.7 ⁵	14.1 ⁶	-	36.3	66.4	-	-	-	-	-	-	-	-	-	-

(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) FEP and PFA are optional seal materials but should be selected based on burst pressure and temperature requirements. Maximum rated temperature for FEP is 205°C and 260°C for PFA. Please consult factory for additional information.

(3) Minimum burst pressure is 620 with DN40 in DIN 32676 / ISO 2852 ferrules.

(4) Minimum burst pressure is 483 with DN50 in DIN 32676 / ISO 2852 ferrules.

(5) Relief area is 9.2 cm² with DN40 in DIN 32676 / ISO 2852 ferrules.

(6) Relief area is 16.1 cm² with DN50 in DIN 32676 / ISO 2852 ferrules.

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 and AD-H TC.

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 ≥ 2.76 barg. (0.15 barg for burst pressures < 2.76 barg).

Type	Performance Attributes			Process Media		Holders	
	Operating Ratio	Vacuum Resistance	Sanitary	Vapour / Gas	Liquid	Ferrules	Companion Flanges
							
AD / AD-V	55%	Yes	N/A	Yes	Yes	N/A	Yes
AD-H / AD-H TC	55%	No	Yes	Yes	Yes	Yes	Yes