

## IMPERVIOUS GRAPHITE TYPE GD, GDV, GDL, GDHT, GDVHT

### DESCRIPTION

Fike graphite bursting discs are manufactured from high purity carbon, impregnated with a phenolic resin rendering the graphite virtually impermeable. This results in excellent corrosion resistance to most acids and corrosive media, resistance to temperature and long term stability. These discs install directly between pipe flanges eliminating the need for a holder and have a variety of gasket material and attachment options.

Fike graphite bursting discs are easily customizable to the customer's exact specifications.

There are different basic series of Fike graphite bursting discs available, each offering specific product features allowing selection of the most suitable type for each individual application.

### GD SERIES

GD discs suit most processing applications, they fit directly between PN10/16/25/40 or ANSI Class 150/300 flanges and are available in diameters from DN 25 (1") to DN 600 (24"). Burst pressures from 0.02 to 10.34 barg and for temperatures up to 200°C. For GD discs used in vacuum service, a vacuum support will be required if the burst pressure is below 1.38 barg. If vacuum support is needed the type will change to GDV series.





### GDV SERIES

GDV discs are typically supplied for applications where vacuum resistance is required, especially when the required burst pressure is below 1.38 barg. The GDV Series are produced for PN10/16/25/40 and ANSI Class 150/300 flanges. The vacuum support grid comes in 4 different configurations and has a reducing effect on the available free flowing area after burst.



### GDI SERIES

GDI discs are designed to fit standard PN10/16/25/40 and ANSI Class 150/300 flanges. Inverted discs have the same temperature characteristics as GD discs but offer higher burst pressure ranges.

### GDL SERIES

GDL discs offer extended corrosion resistance to highly oxidizing agents, halogens and other corrosives, except free fluorine. A sheet of PTFE is used as a chemical barrier on the process side of the disc. GDL series are available for temperatures up to 220°C. In case GDL series are required to withstand vacuum, the burst pressure will need to exceed 1.5 barg.



### GDT SERIES

GDT discs have two ratings, one for overpressure and the other for vacuum protection. GDT discs have a temperature range of -179°C to 220°C and are most commonly used on single entry storage vessels or manifold vents.



### GDHT, GDHVT SERIES

High temperature rated discs are available in GD, GDV and GDI styles to accommodate specified temperatures up to 350°C. They are furnished as an attached unit as shown because the nameplate rating of the disc must be established at the cold face temperature of the insulation. GDHT, GDVHT, GDIHT discs utilize fibrous silica and alumina which is not suitable with liquid applications, these can be attacked by hydrofluoric and phosphoric acids and concentrated alkalis.





## FEATURES AND BENEFITS

- Low burst pressures available
- Excellent corrosion resistance (except for free fluorine); additional protection against corrosion offered by fluoropolymer® lining on process side
- Common sizes and burst pressures available from stock
- Mounted directly between companion flanges

## SPECIAL CONSIDERATIONS

1. Carbon steel or stainless steel armouring is optional for all graphite bursting discs. For added safety and reliable performance armouring is strongly recommended for higher pressures.
2. Carbon steel armouring is mandatory on the following discs:
  - a. All discs for PN25/40 and ANSI Class 300 flanges
  - b. All discs rated above 165°C
  - c. For toxic or flammable environments
  - d. All high temperature rated discs
  - e. GDT series discs
  - f. All discs above the following pressure ratings

Disc Size		Burst Pressure at 22°C (barg)
DN	Inch	
15 – 80	0.5 – 3	10.34
100	4	6.89
150 – 250	6 – 10	5.17
300 – 600	12 – 24	3.45

3. The GDHT, GDIHT and GDVHT models are provided with compressed fibre gaskets standard for temperatures above 220°C.
4. Attached and loose gaskets are available in the following materials:

Standard gasket materials	Thickness (mm)	Max. Temperature
Compressed fibre (non-asbestos)	3.18	204°C
Neoprene	3.18	100°C
PTFE (solid)	3.18	232°C
PTFE (envelope)	3.18	232°C

Consult Fike for other available gasket materials.

5. PTFE coatings are available on the process side, downstream side, or both sides.
6. All graphite discs will fragment upon burst.
7. ASME UD certification is available for the following disc models: GD, GDV, GDI, GDL
8. CE certification is available for the following disc models: GD, GDV, GDI, GDL, GDT



**BURST PRESSURES AND DIMENSIONS  
GD, GDV, GDHT SERIES**

ANSI		DIN		Diameter (mm)		Thickness (mm) <sup>1</sup>		Burst Pressure (barg)		Gasket (mm)	
Inch	ANSI	DN	PN	I.D.	O.D.	GD, GDV	GDHT	Min.	Max.	I.D.	O.D.
0.5	150	15	6	12.7	44	16	45	1.70	10.3	22	44
		15	10-40	12.7	51	16	45	1.70	10.3	22	51
0.75	150	20	6	19.1	54	16	45	1.70	10.3	28	54
		20	10-40	19.1	61	16	45	1.70	10.3	28	61
1	150	25	6	25.4	63	23	57	0.69	10.3	33	63
		25	10-40	25.4	70	23	57	0.69	10.3	33	70
1.5	150			38.1	82	23	57	0.48	10.3	48	82
		40	6	38.1	86	23	57	0.48	10.3	48	86
		40	10-40	38.1	92	23	57	0.48	10.3	48	92
2	150			50.8	101	23	57	0.21	10.3	63	102
		50	10-40	50.8	106	23	57	0.21	10.3	63	106
3	150	80	6	76.2	132	23	57	0.14	10.3	95	133
		80	10-40	76.2	141	23	57	0.14	10.3	95	141
		100	10-16	101.6	162	23	57	0.10	10.3	127	162
4	150			101.6	171	23	57	0.10	10.3	127	171
6	150	150	10-16	152.4	217	23	57	0.07	10.3	181	219
		200	10-16	203.2	273	29	70	0.03	10.3	225	273
8	150			203.2	276	29	70	0.03	10.3	225	276
		250	6	254.0	317	40	86	0.02	8.6	295	317
		250	10-16	254.0	328	40	86	0.02	8.6	295	328
10	150			254.0	336	40	86	0.02	8.6	295	336
		300	6	304.8	373	51	112	0.02	8.6	349	373
		300	10	304.8	376	51	112	0.02	8.6	349	376
12	150			304.8	406	51	112	0.02	8.6	349	406
14	150			336.6	448	57	124	0.02	3.5	368	447
16	150			387.4	511	64	137	0.02	3.5	432	511
18	150			438.2	546	70	149	0.02	3.5	495	546
20	150			489.0	603	76	162	0.02	2.8	552	603
24	150			590.6	714	76	162	0.02	1.7	635	714

(1) GD and GDV disc thicknesses do not include gaskets. GDHT and GDVHT disc thicknesses include all gaskets.



## GDV REQUIRED VACUUM SUPPORT CONFIGURATION <sup>1</sup>

Size <sup>2</sup>		Burst Pressure (BP) (barg)	Support Type
DN	Inch		
25	1	BP < 1.38	Ring
40	1.5	BP < 1.38	Bar
50 – 350	2 – 14	0.62 ≤ BP ≤ 1.31	Bar
50 – 350	2 – 14	0.34 ≤ BP ≤ 0.55	Cross
50 – 350	2 – 14	BP < 0.34	Plate

(1) GDV discs are required for all burst pressures under 1.38 barg for full vacuum service. Not available in sizes DN15 / DN20 (0.5" / 0.75")

(2) Consult Fike for sizes larger than DN350 (14").

## GDI, GDL <sup>1</sup>, GDIHT SERIES

ANSI		DIN		Diameter (mm)		Thickness (mm) <sup>2</sup>		Burst Pressure (barg)		Gasket (mm)	
Inch	ANSI	DN	PN	I.D.	O.D.	GDI, GDL	GDIHT	Min.	Max.	I.D.	O.D.
0.5	150	15	6	12.7	44	16	45	1.72	69.0	22	44
0.5	300	15	10-40	12.7	51	16	45	1.72	69.0	22	51
0.75	150	20	6	19.1	54	16	45	1.72	69.0	28	54
		20	10-40	19.1	61	16	45	1.72	69.0	28	61
0.75	300			19.1	64	16	45	1.72	69.0	28	64
1	150	25	6	25.4	63	23	57	0.69	69.0	33	63
1	300	25	10-40	25.4	70	25	63	0.69	69.0	33	70
1.5	150			38.1	82	23	57	0.48	69.0	48	82
		40	6	38.1	86	23	57	0.48	69.0	48	86
1.5	300	40	10-40	38.1	92	25	63	0.48	69.0	48	92
2	150			50.8	101	23	57	0.21	28.7	63	102
2	300	50	10-40	50.8	106	25	63	0.21	34.5	63	106
3	150	80	6	76.2	132	23	57	0.14	28.7	59	133
		80	10-40	76.2	141	32	76	0.14	34.5	95	141
3	300			76.2	146	32	76	0.14	34.5	95	146
		100	10-16	101.6	162	23	57	0.10	17.2	127	162
		100	25-40	101.6	166	32	76	0.10	34.5	127	166
4	150			101.6	171	23	57	0.10	17.2	127	171
4	300			101.6	177	32	76	0.10	34.5	127	177
6	150	150	10-16	152.4	217	23	57	0.07	11.7	181	219
		150	25-40	152.4	224	45	100	0.07	31.0	181	224
6	300			152.4	247	45	100	0.07	31.0	181	247
		200	10-16	203.2	273	29	70	0.03	11.7	225	273

Table continues on the next page



ANSI		DIN		Diameter (mm)		Thickness (mm) <sup>2</sup>		Burst Pressure (barg)		Gasket (mm)	
Inch	ANSI	DN	PN	I.D.	O.D.	GDI, GDL	GDIHT	Min.	Max.	I.D.	O.D.
8	150			203.2	276	29	70	0.03	11.7	225	276
		200	25	203.2	282	57	125	0.03	31.0	225	282
		200	40	203.2	289	57	125	0.03	31.0	225	289
8	300			203.2	305	57	125	0.03	31.0	225	305
		250	6	254.0	317	40	86	0.02	10.3	295	328
		250	10-16	254.0	328	40	86	0.02	10.3	295	336

(1) GDL Disc are supplied standard with a PTFE liner, FEP, PFA, KYNAR® and Halar® are available upon request.

(2) GDI and GDL disc thicknesses do not include gaskets, GDIHT disc thicknesses include all gaskets.

Note: External Vacuum Supports are available for the GDL model. ASME not available with external vacuum support configuration. Consult Fike for more information.

## GDT SERIES

ANSI		DIN		Diameter (mm)		Thickness (mm) <sup>1</sup>	Burst Pressure (barg)
Inch	ANSI	DN	PN	I.D.	O.D.		Min
1.5	150			38.1	82	28.6	0.48
		40	6	38.1	86	28.6	0.48
		40	10-40	38.1	92	28.6	0.48
2	150			50.8	101	28.6	0.21
		50	10-40	50.8	106	28.6	0.21
3	150	80	6	76.2	132	28.6	0.14
		80	10-40	76.2	141	28.6	0.14
		100	10-16	101.6	162	28.6	0.10
4	150			101.6	171	28.6	0.10
		150	10-16	152.4	217	28.6	0.07
6	150	200	10-16	203.2	273	34.9	0.03
				203.2	276	34.9	0.03
		250	6	254.0	317	44.5	0.02
8	150	250	10-16	254.0	328	44.5	0.02
				254.0	317	44.5	0.02
10	150	300	10	304.8	376	57.2	0.02
		300	16	304.8	384	57.2	0.02
				304.8	406	57.2	0.02





(1) Disc thickness includes all gaskets.

Note: A minimum differential of 0.69 barg is required between burst pressures. For other burst pressure combinations, consult factory.

## PERFORMANCE TOLERANCES (EN/ISO) <sup>1</sup>

Specified burst pressure	Performance tolerance
0.017 barg < BP < 0.069 barg	± 0.05 barg
0.07 barg < BP < 0.99 barg	± 0.05 barg
BP > 1 barg	± 10%

(1) Consult factory for smaller tolerances.

Performance Attributes		Process Media	
Operating Ratio <sup>1</sup>	Vacuum Resistance	Liquid <sup>2</sup>	Vapour / Gas
			
90%	Yes	Yes	Yes

(1) Operating ratio varies based on burst pressure and heavy cyclic duty.

(2) GDHT, GDVHT and GDIHT are not suitable with liquid applications.