

## POLY-SD SERIES

### DESCRIPTION

The Fike Poly-SD rupture disc is a versatile disc. The Poly-SD can be used in liquid, vapor and two phase flow and is available in a large variety of materials. The patented, smooth design of this rupture disc (free from ledges or crevices preventing material buildup on the disc), also makes the Poly-SD ideal for polymerization processes. In addition, the non-fragmenting Poly-SD rupture disc is well suited for pressure relief valve isolation from process contaminants and corrosion.



Poly-SD Rupture Disc

### FEATURES AND BENEFITS

- Patented, smooth annular seating design helps prevent material build-up on disc.
- Created with a failsafe design which provides pressure relief at or below its rated burst pressure even if damaged or installed upside down.
- Scoring on the downstream side controls the burst pressure and opening characteristics. The Poly-SD series includes 3 different scoring configurations to optimize performance over a wide range of pressures.
- Can be used in liquid, vapor or multi-phase media applications.
- Can be operated as high as 90% of its rated burst pressure.
- Withstands full vacuum without a vacuum support in a wide range of pressures.
- Designed to be non-fragmenting.
- Available with a zero manufacturing range.

### PRESSURE RELIEF VALVE APPLICATION

The Poly-SD Series is ideal for relief valve isolation. By isolating the valve from the process, the risk of corrosion or material build-up within the valve is minimized.

When Poly-SD discs are used to isolate pressure relief valves, a combination capacity factor of 0.9 may be used. Higher combination capacity factors may be established by testing and certification in accordance with the ASME Code, Section VIII, Div I. See Fike Technical Bulletin TB8103 for more information.

### OPTIONS

- Available with fluoropolymer liner with a maximum temperature of 450°F (232°C)
- Polyurethane 250°F (121°C) and Teflon 450°F (232°C) protective coatings also available

### ACCESSORIES AND HOLDERS

#### **Poly-SD Holder:**

The Poly-SD Rupture Disc is mounted in a unique Poly-SD type holder that fits between standard piping flanges. Carbon steel and 316 SST materials are standard materials of construction. Other materials and configurations are available on request. The Poly-SD rupture disc is commonly used with the Viscous Tee. For more information on the Viscous Tee, please see data sheet R.1.10.01.

Form No. R.1.11.01-4

MINIMUM/MAXIMUM BURST PRESSURES<sup>1</sup> IN PSIG (BARG) @ 72°F (22°C)

**Will not withstand full vacuum**

In	DN	316/316L SST		Inconel <sup>®</sup> 600		Monel <sup>®</sup> 400		Nickel 200/201		Hastelloy <sup>®</sup> C276		Tantalum		Aluminum 1100 <sup>1</sup>		Silver <sup>1</sup>	
		Min. BP	Max. BP	Min. BP	Max. BP	Min. BP	Max. BP	Min. BP	Max. BP	Min. BP	Max. BP	Min. BP	Max. BP	Min. BP	Max. BP	Min. BP	Max. BP
		Max Temp: 900°F (482°C)		Max Temp: 1100°F (593°C)		Max Temp: 900°F (482°C)		Max Temp: 800°F (427°C)		Max Temp: 900°F (482°C)		Max Temp: 500°F (260°C)		Max Temp: 250°F (121°C)		Max Temp: 250°F (121°C)	
.50	15	CF	CF	300 (20.68)	350 (24.13)	300 (20.68)	350 (24.13)	251 (17.31)	300 (20.68)	620 (42.74)	1000 (68.95)	250 (17.23)	360 (24.82)	45 (3.10)	90 (6.21)	100 (6.89)	185 (12.76)
.75	20	CF	CF	200 (13.79)	300 (20.68)	250 (17.24)	300 (20.68)	200 (13.79)	360 (24.82)	521 (36.92)	750 (51.71)	200 (13.79)	245 (16.89)	40 (2.75)	80 (5.52)	96 (6.61)	125 (8.62)
1	25	200 (13.79)	250 (17.23)	130 (8.96)	155 (10.68)	75 (5.17)	185 (12.75)	60 (4.14)	80 (5.52)	400 (27.57)	700 (48.26)	100 (6.89)	150 (10.34)	34 (2.34)	70 (4.83)	60 (4.14)	75 (5.17)
1.5	40	150 (10.34)	200 (13.78)	100 (6.89)	150 (10.34)	80 (5.52)	130 (8.96)	60 (4.14)	80 (5.52)	365 (25.16)	600 (41.37)	80 (5.52)	130 (8.96)	30 (2.06)	55 (3.79)	35 (2.41)	60 (4.14)
2	50	140 (9.65)	200 (13.78)	95 (6.55)	180 (12.41)	75 (5.17)	160 (11.03)	50 (3.44)	60 (4.14)	365 (25.16)	425 (29.30)	60 (4.14)	120 (8.27)	23 (1.58)	35 (2.41)	30 (2.06)	70 (4.83)
3	80	100 (6.89)	190 (13.10)	80 (5.52)	150 (10.34)	70 (4.83)	140 (9.65)	36 (2.48)	60 (4.14)	CF	CF	45 (3.10)	110 (7.58)	15 (1.03)	45 (3.10)	25 (1.72)	50 (3.45)
4	100	80 (5.52)	180 (12.41)	65 (4.48)	150 (10.34)	60 (4.14)	140 (9.65)	30 (2.06)	50 (3.45)	CF	CF	40 (2.75)	100 (6.89)	15 (1.03)	50 (3.45)	25 (1.72)	50 (3.45)
6	150	80 (5.52)	150 (10.34)	60 (4.14)	150 (10.34)	55 (3.79)	125 (8.61)	25 (1.72)	50 (3.45)	CF	CF	35 (2.41)	100 (6.89)	15 (1.03)	50 (3.45)	20 (1.37)	50 (3.45)
8	200	75 (5.17)	135 (9.30)	55 (3.79)	130 (8.96)	55 (3.79)	110 (7.58)	30 (2.06)	70 (4.83)	CF	CF	CF	CF	CF	CF	CF	CF
10	250	60 (4.14)	135 (9.30)	44 (3.03)	115 (7.93)	44 (3.03)	95 (6.55)	24 (1.65)	70 (4.83)	CF	CF	CF	CF	CF	CF	CF	CF
12	300	50 (3.45)	130 (8.96)	37 (2.55)	110 (7.58)	37 (2.55)	90 (6.20)	20 (1.37)	70 (4.83)	CF	CF	CF	CF	CF	CF	CF	CF
14	350	43 (2.96)	115 (7.93)	32 (2.20)	110 (7.58)	32 (2.20)	90 (6.20)	17 (1.17)	70 (4.83)	CF	CF	CF	CF	CF	CF	CF	CF
16	400	85 (5.86)	115 (7.93)	65 (4.48)	110 (7.58)	65 (4.48)	90 (6.20)	30 (2.06)	70 (4.83)	CF	CF	CF	CF	CF	CF	CF	CF
18	450	75 (5.17)	115 (7.93)	55 (3.79)	110 (7.58)	55 (3.79)	90 (6.20)	25 (1.72)	70 (4.83)	CF	CF	CF	CF	CF	CF	CF	CF
20	500	65 (4.48)	115 (7.93)	50 (3.45)	110 (7.58)	50 (3.45)	90 (6.20)	25 (1.72)	70 (4.83)	CF	CF	CF	CF	CF	CF	CF	CF
24	600	55 (3.79)	115 (7.93)	45 (3.10)	110 (7.58)	45 (3.10)	90 (6.20)	20 (1.37)	70 (4.83)	CF	CF	CF	CF	CF	CF	CF	CF

1. Aluminum and Silver max operating ratio is 80%

**Notes:**

CF=Consult Factory

- Larger sizes and higher burst pressures are available. Please consult Fike.

MINIMUM/MAXIMUM BURST PRESSURES<sup>1</sup> IN PSIG (BARG) @ 72°F (22°C)

Will withstand full vacuum

In	DN	316/316L SST		Inconel <sup>®</sup> 600		Monel <sup>®</sup> 400		Nickel 200/201		Hastelloy <sup>®</sup> C276		Tantalum		Aluminum 1100 <sup>2</sup>		Silver <sup>2</sup>	
		Min. BP	Max. BP	Min. BP	Max. BP	Min. BP	Max. BP	Min. BP	Max. BP	Min. BP	Max. BP	Min. BP	Max. BP	Min. BP	Max. BP	Min. BP	Max. BP
.50	15	550 (37.92)	3000 (206.84)	350 (24.13)	3000 (206.84)	350 (24.13)	3000 (206.84)	300 (20.69)	3000 (206.84)	1000 (68.95)	3000 (206.84)	360 (24.82)	1000 (68.95)	90 (6.21)	450 (31.02)	185 (12.75)	450 (31.02)
.75	20	450 (31.02)	2500 (172.37)	300 (20.68)	2500 (172.37)	300 (20.69)	2500 (172.37)	250 (17.24)	2500 (172.37)	750 (51.71)	2500 (172.37)	245 (16.89)	833 (57.43)	80 (5.52)	375 (25.85)	125 (8.61)	375 (25.85)
1	25	250 (17.24)	2250 (155.13)	155 (10.69)	2250 (155.13)	185 (12.76)	2250 (155.13)	80 (5.52)	2250 (155.13)	700 (48.26)	2250 (155.13)	150 (10.34)	750 (51.71)	70 (4.83)	338 (23.30)	75 (5.17)	338 (23.30)
1.5	40	200 (13.79)	1800 (124.10)	150 (10.34)	1800 (124.10)	130 (8.96)	1800 (124.10)	80 (5.52)	1800 (124.10)	600 (41.37)	1800 (124.10)	130 (8.96)	600 (41.37)	55 (3.79)	270 (18.61)	60 (4.14)	270 (18.61)
2	50	200 (13.79)	1600 (110.31)	180 (12.41)	1600 (110.31)	160 (11.03)	1600 (110.31)	60 (4.14)	1600 (110.31)	425 (29.30)	1600 (110.31)	120 (8.27)	533 (36.74)	35 (2.41)	240 (16.54)	70 (4.83)	240 (16.54)
3	80	190 (13.10)	1300 (89.63)	150 (10.34)	1300 (89.63)	140 (9.65)	1300 (89.63)	60 (4.14)	1300 (89.63)	315 (21.72)	1300 (89.63)	110 (7.58)	433 (29.85)	45 (3.10)	195 (13.44)	50 (3.45)	195 (13.44)
4	100	180 (12.41)	1100 (75.84)	150 (10.34)	1100 (75.84)	140 (9.65)	1100 (75.84)	50 (3.45)	1100 (75.84)	315 (21.72)	1100 (75.84)	100 (6.89)	367 (25.30)	50 (3.45)	165 (11.37)	50 (3.45)	165 (11.37)
6	150	150 (10.34)	500 (34.47)	150 (10.34)	500 (34.47)	125 (8.62)	500 (34.47)	55 (3.79)	500 (34.47)	315 (21.72)	500 (34.47)	100 (6.89)	233 (16.06)	50 (3.45)	105 (7.23)	50 (3.45)	105 (7.23)
8	200	135 (9.31)	450 (31.02)	130 (8.96)	450 (31.02)	110 (7.58)	450 (31.02)	70 (4.83)	450 (31.02)	CF	CF	CF	CF	CF	CF	CF	CF
10	250	135 (9.31)	400 (27.57)	115 (7.93)	400 (27.57)	95 (6.55)	400 (27.57)	70 (4.83)	400 (27.57)	CF	CF	CF	CF	CF	CF	CF	CF
12	300	130 (8.96)	350 (24.13)	110 (7.58)	350 (24.13)	90 (6.21)	350 (24.13)	70 (4.83)	350 (24.13)	CF	CF	CF	CF	CF	CF	CF	CF
14	350	115 (7.93)	300 (20.68)	110 (7.58)	300 (20.68)	90 (6.21)	300 (20.68)	70 (4.83)	300 (20.68)	CF	CF	CF	CF	CF	CF	CF	CF
16	400	115 (7.93)	250 (17.23)	110 (7.58)	250 (17.23)	90 (6.21)	250 (17.23)	70 (4.83)	250 (17.23)	CF	CF	CF	CF	CF	CF	CF	CF
18	450	115 (7.93)	200 (13.78)	110 (7.58)	200 (13.78)	90 (6.21)	200 (13.78)	70 (4.83)	200 (13.78)	CF	CF	CF	CF	CF	CF	CF	CF
20	500	115 (7.93)	150 (10.34)	110 (7.58)	150 (10.34)	90 (6.21)	150 (10.34)	70 (4.83)	150 (10.34)	CF	CF	CF	CF	CF	CF	CF	CF
24	600	CF	CF	CF	CF	90 (6.21)	100 (6.89)	70 (4.83)	100 (6.89)	CF	CF	CF	CF	CF	CF	CF	CF

1. For coated discs derate stated maximum burst pressure by 50%
2. Aluminum and Silver max operating ratio is 80%

**Notes:**

CF=Consult Factory

- Larger sizes and higher burst pressures are available. Please consult Fike.

AVAILABLE MANUFACTURING RANGES

Specified Rupture Pressure		Manufacturing Range % @ 72°F (22°C)
PSIG @ 72°F	BARG @ 22°C	
15 to 45.9	1.03 to 3.16	+14% to -7%
46 to 90.9	3.17 to 6.26	+12% to -6%
91 to 270.9	6.27 to 18.68	+10% to -5%
271 to 500.9	18.68 to 34.54	+8% to -4%
501+	34.55+	+6% to -3%

\* Zero range optional

BURST/PERFORMANCE TOLERANCE

Marked Burst Pressure		Tolerance	
PSIG	BARG	PSIG	BARG
≤ 40	≤ 2.76	± 2	± .14
> 40	> 2.76	± 5%	± 5%

Performance Attributes			Process Media			Rupture Disc Holders	
Operating Ratio	Non-Fragmenting	Vacuum Resistant	Polymerization	Liquid	Vapor/Gas	Bolted/Type	Pre-Torque
90%	yes	yes	yes	yes	yes	yes	yes

HOW TO SPECIFY

Previous Lot Number:	
OR	
Size:	
Vacuum:	Yes / No
Burst Pressure:	@ (Temperature)
Seal Material	
Certifications:	ASME CE

CERTIFICATIONS



ASME Authorized  
Specify When Ordering



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