Reverse-acting with knifeblades
Type MRK

Description

The Fike MRK bursting disc is a reverse-acting disc that opens upon contact with a knifeblade assembly.

The holder holddown flange or outlet contains a knifeblade assembly which faces the concave side of the bursting disc. Once reversal pressure is reached, the crown of the disc is reversed and the disc comes in contact with the knifeblade assembly and is cut open, providing instant pressure relief.

Data Sheet

Features and Benefits

- 3-sweep knifeblade design offers lower bursting pressures for a specific material
- Will in all cases withstand backpressures in excess of its burst pressure
- Operating ratio of 95%
- Predetermined bursting patterns of the knifeblade design allow a non-fragmenting opening of the disc
- Generally 3 to 5 times thicker than the standard conventional forward-acting disc of the same material and therefore offers better corrosion resistance

Technical Data

Type of Disc		**MRK**				
Action		**reverse-acting with knifeblades**				
Dimensions (1)		**1"- 44"/ DN25-DN1100**				
Disc Material		**1.4401 (316 SST) / 1.4404 (316L SST)**	**Nickel 200/201**	**Monel 400**	**Inconel 600**	**Hastelloy C276**
Max. Operating Temperature		**482°C**	**427°C**	**482°C**	**593°C**	**482°C**
Protective Coating (2)		Yes				
Operating Ratio	**95%**	R	R	R	R	R
Cycling Duty		R	R	R	R	R
Pulsating Duty (light)		R	R	R	R	R
Pulsating Duty (heavy)		R	R	R	R	R
Partial or Full Vacuum		R	R	R	R	R
Polymerisation Processes		NR	NR	NR	NR	NR
Hydraulic Service (3)		MC	MC	MC	MC	MC
Non Fragmentation (4)		R	R	R	R	R
Seat Configuration		Flat				
Use in Flanged Holders	**Type BT**	Yes				
Use in Union Type Holders	**Type UT**	No				
Use in Screw Type Holders	**Type ST**	No				

R = RECOMMENDED MC = MARGINAL CONDITIONS NR = NOT RECOMMENDED

Notes:
(1) Consult Fike for discs > 24" (DN600).
(2) Maximum temperature for various coatings: Urethane Acrylic 65°C, Urethane 120°C, Teflon 230°C.
(3) Reverse-acting bursting discs always need a minimum vapour volume to assure proper and complete opening (consult table with burst pressures for minimum values) and should not be used for hydraulic service.
(4) Specify when ordering.

Data Sheet

Burst pressures in barg at 22°C (1) (2)

Disc Material	Max. Temp.	Bursting Disc Size													
		ANSI	1"	1½"	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
		DN	25	40	50	80	100	150	200	250	300	350	400	450	500	600
1.4401 (316 SST) / 1.4404 (316L SST)	482°C	MIN	4.1	2.4	1.9	1.7	1.4	1.0	0.8	0.7	0.5	0.5	0.4	0.3	0.3	0.3
Nickel 200/201	427°C															
Monel 400	482°C															
Inconel 600	593°C	MAX	49.6	49.6	49.6	49.6	49.6	49.6	3.5	3.1	2.8	2.4	2.1	1.7	1.4	0.7
Hastelloy C276	482°C															
Min Vessel Free Vapour Volume (in dm³)			11	11	11	28	48	113	193	300	425	586	765	963	1189	1727
Max.Relief Area (in cm²)			5	11.4	21.7	47.7	81.9	187	323	510	729	890	1181	1510	1871	2742

Notes:
(1) Minimum burst pressures given are for full opening. Consult Fike for lower burst pressures with partial opening.
(2) Maximum burst pressures given are non-fragmenting opening. For higher burst pressures, consult Fike.

Performance Tolerances (*)

Burst Pressure in barg at 22°C	Performance Tolerance at 22°C
≤ 1.5	± 0.15 barg
1.5 < burst pr. < 2.76	stand. ± 10% / red. ± 0.15 barg
≥ 2.76	stand. ± 10% / red. ± 5%

(*) Consult Fike for possibility to reduce tolerances.

Performance tolerance as specified by ISO/EN is a total tolerance which includes both manufacturing and burst 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 ± 10% at 22°C (± 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 burst tolerance of ± 5% for burst pressures ≥ 2.76 barg (±0.15 barg for burst pressures < 2.76 barg).

Performance attributes				Process media		Bursting Disc Holders
Operating ratio	Non-fragmenting	Vacuum resistance	Pulsating / cycling	Liquid	Vapour / gas	Bolted type
95%	Yes	Yes*	Yes	No (*)	Yes	Yes

(*) Minimum vapour volume required, see table with burst pressures.