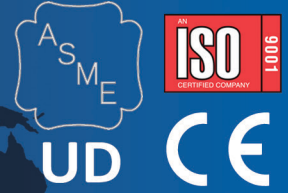




SSR™ Reverse Buckling Disks



Introduction

The type SSR reverse buckling rupture disk offers superior resistance to operating pressure fluctuations as well as resistance to vacuum at all burst pressures. The SSR disk comprises three integral components:

- Reverse buckling dome whose shape, thickness and material properties control burst pressure.
- Hinge ring attached to the downstream side of the disk dome that interacts with the circular line of weakness located at the circumference of the disk dome when bursting to provide full single petal opening.
- Three-dimensional tag that identifies the disk performance characteristics and provides its lot number for traceability.



The SSR disk is available in a wide range of materials that offers the relief system designer options for corrosion resistance. These materials are identified in the table below along with their recommended maximum service temperatures.

Material	F°	C°
Nickel alloy 200	750	399
Monel® alloy 400	900	482
Inconel® alloy 600	1100	593
316 stainless steel	900	482
Hastelloy® alloy C-276	900	482
Titanium	572	300
Tantalum	500	260

Plastic liners that offer additional corrosion resistance options are available for all type SSR disk sizes on the process side. The operating temperature ranges of the plastic materials available are:

FEP: -40° to 400°F (-40° to 205°C)

PTFE: -40° to 500°F (-40° to 260°C)

All type SSR disks use a standard 316 stainless steel hinge ring on the downstream, non process side. Alternatives are available upon request.

US patents 5,167,337; 5,996,605; 6,178,983; 6,446,653; International patents pending

Features

- Designed for gas, liquid or vapor service
- Operable up to 95% of minimum burst pressure
- Designed for non fragmentation
- Individually boxed
- Employs SAF™ technology (structural apex forming) for optimal control of burst pressure
- Fail-safe; damage safety ratio < 1
- Vacuum resistant

Burst Tolerance / Performance Tolerance

The tolerance on burst pressure depends upon the pressure selected. Standard tolerances are as follows:

+/-5% > 40 psig (2.76barg)

+/-2 psig (0.138barg) ≤ 40 psig (2.76barg)

Savings are available for those applications where a larger performance tolerance or combination of burst tolerance and a manufacturing design range (MDR) is acceptable. When performance tolerance is employed (typically for "CE" marked rupture disks), optional values of +/- 7.5% or +/- 10% are offered in addition to the standard of +/- 5%. As required, the performance tolerance can be expressed as a minimum and maximum burst pressure. Special performance tolerances will be considered upon request. When an optional MDR is selected (typically when following North American standards), both "-10%" and "-5%" are offered. Placed all on the minus side of the requested disk pressure rating, the MDR is additional to the applicable burst tolerance.

Flow Characteristics

Disk size		in²*	cm²**
in	mm		
1	25	0.86	4.8
1.5	40	1.93	11.3
2	50	3.36	19.7
3	80	7.39	40.8
4	100	12.74	69.7

*Use MNEA in in² when sizing according to ASME code.

**Use Net Relief Area in cm² when sizing according to European Standards.

Minimum / Maximum Burst Pressures at 72°F (22°C)

Disk size		Nickel alloy 200				316 stainless steel				Hastelloy® alloy C-276				Inconel® alloy 600 & Monel® alloy 400			
in	mm	Min		Max		Min		Max		Min		Max		Min		Max	
		psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
1	25	55	3.8	350	24.1	60	4.2	350	24.1	60	4.2	350	24.1	60	4.2	350	24.1
1.5	40	40	2.8	350	24.1	45	3.1	350	24.1	45	3.1	350	24.1	45	3.1	350	24.1
2	50	25	1.8	300	20.6	30	2.1	300	20.6	30	2.1	300	20.6	30	2.1	300	20.6
3	80	20	1.4	250	17.2	25	1.8	250	17.2	25	1.8	250	17.2	22	1.5	250	17.2
4	100	16	1.1	250	17.2	20	1.4	250	17.2	20	1.4	250	17.2	18	1.3	250	17.2
6	150	15	1	250	17.2	20	1.4	250	17.2	20	1.4	250	17.2	15	1	250	17.2
8	200	15	1	200	13.8	20	1.4	200	13.8	15	1.4	200	13.8	15	1	200	13.8
10	250	15	1	150	10.3	20	1.4	150	10.3	15	1.4	150	10.3	15	1	150	10.3

Disk size		Tantalum				Titanium			
in	mm	Min		Max		Min		Max	
		psig	barg	psig	barg	psig	barg	psig	barg
1	25	55	3.8	350	24.1	90	6.2	350	24.1
1.5	40	40	2.8	350	24.1	60	4.2	350	24.1
2	50	25	1.8	300	20.6	35	2.4	300	20.6
3	80	20	1.4	250	17.2	25	1.8	250	17.2
4	100	16	1.1	250	17.2	20	1.4	250	17.2
6	150	15	1	250	17.2	20	1.4	250	17.2
8	200	15	1	150	10.3	20	1.4	150	10.3
10	250	15	1	150	10.3	20	1.4	150	10.3

Safety Head Options

The type SSR rupture disk must be applied in one of the following pre-assembled safety head types: SRB-7RS

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Monel® and Inconel® are trademarks of Inco Alloys International, Inc

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