



Vent Side



Process Side



The type GR-C™ outlet that provides quick installation of the LSR-S reverse buckling disk onto existing standard sanitary inlet fittings. The uniquely designed gasket helps eliminate inverted installation of the rupture disk.

US and International patents pending.

1" (25mm) LSR-S™ Reverse Buckling Rupture Disk

The LSR-S™ rupture disk is a circular scored reverse buckling rupture disk. At the marked burst pressure, the disk's dome reverses and opens by shearing around the circular score line. The LSR-S series uses SAF™ (Structural Apex Forming) technology, the central "dimple" which aids in the control of burst pressure. The LSR-S™ is used for hygienic/aseptic applications in the pharmaceutical, biotechnology and food industries.

Features

- Designed for gas, liquid and multi-phase service.
- Damage safety ratio < 1.0.
- Ideal for CIP / SIP service.
- Integral sanitary gaskets.
- 8 to 16 micro-inch typical disk surface finish.
- Suitable for operating pressure to 90% of the minimum burst pressure.
- Install to ASME BPE / DIN 32676 Series C sanitary fittings.
- Available with ASME "UD" (select 0%, -5%, -10% Manufacturing Design Range).
- Available with "CE" marking, European Pressure Equipment Directive compliance
- Designed for non-fragmentation.
- Withstands full vacuum at all available burst pressures.
- Available SAS™ (Sanitary Alert Sensor) for burst indication or LDS (Leak Detector Sensor) with leak sensing capability.

Materials

The LSR-S reverse buckling rupture disk and GR-C outlet fitting are available in 316L stainless steel as standard. Alternative materials are available on request.

Sensors

The LSR-S rupture disk family is available with an integral Burst Alert(R) sensor (see model designations on next page) as an alternative to a separate downstream sensor as illustrated."

Minimum / Maximum Pressures

Disk Specification Min / Max Burst Pressure at 72°F (22°C)									
Sanitary Fitting		Burst Pressure				Overall Height		OD	
Nominal Disk Size		Min		Max					
in	mm	psi	bar	psi	bar	in	mm	in	mm
1	25	18	1.24	300	20.7	1.62	41	1.98	50.3

Other sizes and burst pressures may be available - consult BS&B

Flow Performance

The LSR-S Series reverse buckling disk has been specifically developed to produce superior flow performance at all burst pressures in gas or liquid service. The circular score on the disk's dome ensures an excellent pressure relief opening in all service phases.

Flow resistance factor, K_R may be used to determine the relieving capacity of a system according to the ASME and CE codes and standards. Individual K_R values have been established for both gas and liquid service for the disk. K_R values are available at www.bsbsystems.com.

Gaskets

Material	Service temperature	
Silicone	-67°F (-55°C)	450°F (232°C)
Viton® (white or Black)	-40°F (-40°C)	400°F (204°C)
EPDM (white or Black)	-67°F (-55°C)	300°F (149°C)
PTFE blended with stainless steel	-20°F (-29°C)	450°F (232°C)

Liners

Liners are available in all sizes as optional on the process side of the disk. FEP or PFA are generally used.

The LSR-SW installs between standard (ASME BPE) sanitary fittings. An optional Sanitary Alert Sensor (SAS) may be installed downstream to indicate an overpressure event. For installation between non ASME BPE fittings consult factory.



LSR-SW

Burst Tolerance

Burst Pressure		Burst Tolerance (per ASME)
psig	bar	
28 and higher	1.93 and higher	±5%
20 to <28	1.38 to <1.93	±7%
10 to <20	0.69 to <1.38	±10%
<10	<0.69	±15%
Alternate:		±2 psi (0.138 bar)
<40	<2.76	

Installation

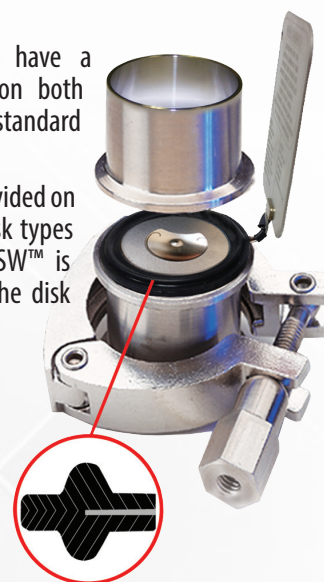
The GR-C™ outlet ensures correct disk orientation and a leak tight rupture disk installation. BS&B recommends the assembly of LSR-S rupture disk uses a Tri-Clamp® 13 MHHS clamp (or equivalent) with a hexagonal nut enabling control of installation torque. The LSR-S reverse buckling rupture disk range exhibits minimum sensitivity to changes in clamp loading on the disk induced by service temperature variations.

LSR-S Disk Types

LSR-S™ and LSR-SS™, with uniquely designed FDA approved gaskets, are installed between a standard inlet ferrule and the GR-C™ outlet ensuring correct orientation of disk and leak tight installation.

The LSR-SM™ and LSR-SMS™ have a symmetric gasket configuration on both sides of the disk and fit between standard Tri-Clamp® (or equivalent) fittings.

An integral burst alert sensor is provided on the outlet side of the disk with disk types LSR-SS, and LSR-SMS. The LSR-SW™ is a welded ferrule assembly with the disk welded between standard fittings.



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