

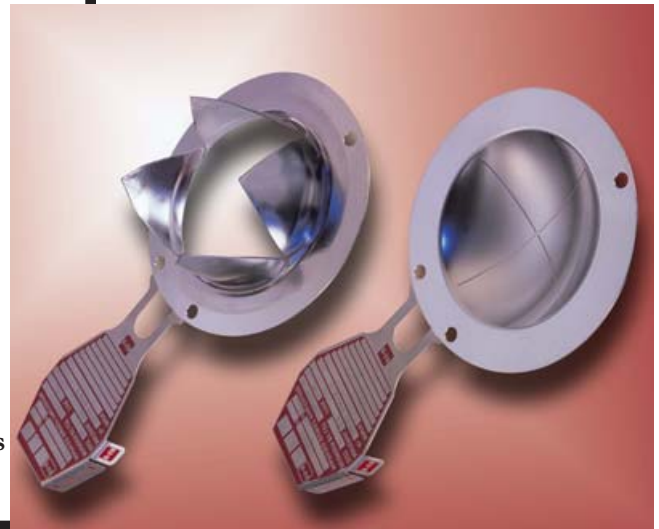
# Precision Cross-Scored Reverse Buckling Rupture Disk

# S-90™

The S-90 is a domed, solid metal, precision scored reverse buckling disk, which, upon over-pressure, reverses and opens along pre-weakened cross-score lines to provide a full relief opening.

The compression loaded S-90 disk offers an extended service life under pressure cycling conditions compared to a conventional tension loaded disk. The S-90 disk exhibits excellent fatigue resistance in cyclic pressure service, surviving 1,000,000 pressure cycles from 0-90% of its marked burst pressure.

- ♦ Designed for non-fragmentation
- ♦ Withstands full vacuum and back pressure equal to or less than burst pressure (higher upon request)
- ♦ Suitable for operating pressure to 90% of the marked burst pressure and 95% of the minimum burst pressure (CEN ISO 4126-2 standard pending)
- ♦ Gas service (acceptable for liquid service with a compressible gas/vapor pocket between the liquid and disk)
- ♦ Damage safety ratio 1.5. An S-90 disk damaged or installed incorrectly will burst at or below 1.5 times its marked burst pressure
- ♦ Reversal safety ratio equal to or less than 1.5. An S-90 disk and Safety Head installed upside down in the pressure system will burst at 1.5 times its marked burst pressure or less
- ♦ Optimum fatigue resistance in pressure pulsating or cycling conditions
- ♦ Ideal for safety relief valve isolation
- ♦ Inconel material has the lowest published  $K_R$  (Gas) of 0.232
- ♦ Optional TEF liners to enhance corrosion resistance (on the inlet/process and/or down-stream side of the disk). Order as "TEF Liner" or identify special material requirements



Disk Material

Disk Size	Disk Material																				
	Aluminum (Al)				Nickel Alloy 200 (Ni)				Hastelloy® Alloy C-276 (Hast C-276) & 316 Stainless (316SS)				Inconel® Alloy 600 (Inc)				Monel® Alloy 400 (Mon)				
	Min.		Max.		Min.		Max.		Min.		Max.		Min.		Max.		Min.		Max.		
in	mm	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
1	25	75	5.17	125	8.61	125	8.62	1000	68.9	328	22.6	1000	68.9	150	10.3	1000	68.9	150	10.3	1000	68.9
1.5	40	54	3.72	90	6.2	90	6.21	1000	68.9	282	19.4	1000	68.9	110	7.58	1000	68.9	110	7.58	1000	68.9
2	50	45	3.1	75	5.17	75	5.17	1000	68.9	230	15.9	1000	68.9	90	6.21	1000	68.9	90	6.21	1000	68.9
3	80	36	2.48	60	4.14	60	4.14	1000	68.9	167	11.5	1000	68.9	72	4.96	1000	68.9	72	4.96	1000	68.9
4	100	30	2.06	50	3.45	50	3.45	800	55.2	132	9.10	800	55.2	60	4.14	800	55.2	60	4.14	800	55.2
6	150	24	1.65	40	2.76	40	2.76	800	55.2	92	6.34	800	55.2	48	3.31	800	55.2	48	3.31	800	55.2
8	200	n.a.	n.a.	n.a.	n.a.	35	2.41	700	48.3	n.a.	n.a.	n.a.	n.a.	42	2.89	700	48.3	42	2.89	700	48.3
10	250	n.a.	n.a.	n.a.	n.a.	30	2.07	700	48.3	n.a.	n.a.	n.a.	n.a.	36	2.48	700	48.3	36	2.48	700	48.3
12	300	n.a.	n.a.	n.a.	n.a.	27	1.87	600	41.4	n.a.	n.a.	n.a.	n.a.	33	2.28	600	41.4	33	2.28	600	41.4
14	350	n.a.	n.a.	n.a.	n.a.	25	1.72	500	34.5	n.a.	n.a.	n.a.	n.a.	30	2.07	500	34.5	30	2.07	500	34.5
16	400	n.a.	n.a.	n.a.	n.a.	23	1.59	100	6.89	n.a.	n.a.	n.a.	n.a.	28	1.93	180	12.4	28	1.93	180	12.4
18	450	n.a.	n.a.	n.a.	n.a.	22	1.52	92	6.34	n.a.	n.a.	n.a.	n.a.	26	1.79	160	11.0	26	1.79	160	11.0
20	500	n.a.	n.a.	n.a.	n.a.	21	1.45	84	5.79	n.a.	n.a.	n.a.	n.a.	24	1.65	142	9.79	24	1.65	142	9.79
24	600	n.a.	n.a.	n.a.	n.a.	20	1.38	70	4.82	n.a.	n.a.	n.a.	n.a.	22	1.52	118	8.14	22	1.52	118	8.14
30	750	n.a.	n.a.	n.a.	n.a.	20	1.38	70	4.82	n.a.	n.a.	n.a.	n.a.	20	1.38	80	5.52	20	1.38	80	5.52

US Patent numbers: 4441350, 4481850 and other international patents apply. TEF liners available at all burst pressures. For burst pressures below S-90 minimums use the JRS, FRS, SKR or Sigma type disks. For pressures above the S-90 maximums use the RLS disk or the S90-HP (contact BS&B Safety Systems Inc. or BS&B Safety Systems Limited for details). Hastelloy is a trademark of Haynes International Inc., Monel and Inconel are trademarks of Inco Alloys International, Inc.