



**Continental Disc
Corporation**

TECHNICAL BRIEF

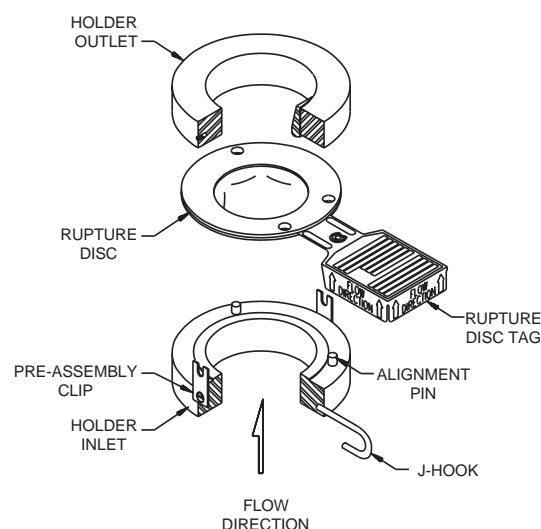
STAR X™* RUPTURE DISC

The STAR X Rupture Disc, one of Continental Disc Corporation's unique scored reverse acting rupture discs for protecting equipment, vessels and systems from potentially damaging overpressure, has been improved. **STAR X is now available in lower burst pressures with a wider choice of materials from which to choose.** This reverse acting rupture disc is ideal for primary and/or secondary system relief protection or, when used to isolate a safety relief valve, provides an effective means of fugitive emission control. Additional system protection applications include installation in *transfer piping, chemical reactors, pressure vessels, storage vessels, and heat exchangers.*

The STAR X Rupture Disc is a solid metal rupture disc incorporating a handling ring to reduce torque sensitivity. This rupture disc is specifically designed for *low pressure applications* that require an operating ratio of up to 90% of the disc's rated burst pressure. As with all our other reverse acting rupture discs, every STAR X Rupture Disc is proof pressure tested to 90% prior to shipment.

The STAR X Rupture Disc features:

- **Operation to 90%** of rated burst pressure for burst pressures 40 psig and above. Below 40 psig, operation is to 90% of the lower portion of the burst tolerance range.
- A **safety ratio of 1.5 or less** – designed so a damaged rupture disc will provide pressure relief at or less than 1.5 times the rated burst pressure of the rupture disc.
- Inherent with most reverse acting type of rupture discs on the market, the STAR X will **operate in pressure-to-full-vacuum cycling** without an additional vacuum support component compared to tension type rupture discs.
- Capable of operating in **gas or vapor service** (consult factory regarding liquid service application)
- A **ZERO manufacturing range** as standard with an optional **-5% or -10% manufacturing range** available
- A **three-dimensional flow direction tag** permanently attached allowing immediate visual verification of proper rupture disc orientation.
- Manufacturing techniques that combine **C.D.C.'s Patented Nonsymmetrical Failure Initiating Indents:**
 - * to precisely control disc buckling at a predetermined pressure
 - * to weaken thicker materials to achieve low reversal pressures (In addition, the use of thicker materials provide a disc which is sturdier and less susceptible to corrosion.)
 - * to initiate failure of the rupture disc dome to assure thicker material will properly collapse for a full opening along the score line
- **Precision Semicircular Scoring** (outside of the rupture disc dome)
 - * to help assure the rupture disc dome will not fragment
- **Arcuate Projection:** (located in the holder outlet, aligning with the tab region in the rupture disc)
 - * When reversal occurs, the rupture disc dome curves around the arcuate to help eliminate fragmentation and provide an unrestricted flow.
- **Available with Continental's patented B.D.I.®**** (Burst Disc Indicator) Alarm System which installs directly between the holder outlet and companion flange.



*STAR X rupture disc incorporates U.S. patent no. 4,597,505; 4,512,171; 4,759,460; 4,669,626; and 4,072,160; Australia patent no. 579833; Canada patent no. 1244315; Chile patent no. 35096; France, Netherlands, and United Kingdom patent no. EP 0 137 903; Germany patent no. P 3473633.6; India patent no. 160204; Ireland patent no. 55493; Mexico patent no. 161587; Spain patent no. 289581 and Venezuela patent no. 46.640.

**B.D.I. (Burst Disc Indicator) Alarm System incorporates U.S. patent no. Re. 34,308 and 4,408,194; Australia patent no. 539415; Germany patent no. 3174227.0; Belgium, France and United Kingdom patent no. EP 0 033 867; Canada patent no. 1199990; Japan patent no. 2032464.

STAR X RUPTURE DISC SPECIFICATIONS

- **Manufacturing Range:** Zero manufacturing range is standard.
-2.5 and -5 psig available for burst pressure ratings under 50 psig
-5% and -10% available for burst pressure ratings 50 psig and above
- **Burst Tolerance:** ± 2 psig less than 40 psig, ± 5% 40 psig and above.
- **Available Materials:** Rupture Disc: 316SS, Nickel, Monel^{®1}, Inconel^{®1},
Hastelloy C^{®2}, Tantalum, Aluminum
Outlet Ring: 316SS, Nickel, Monel, Inconel, Hastelloy C
- **Maximum Service Temperature:** Nickel and Monel -- 800°F (427°C)
316SS and Hastelloy C -- 900°F (482°C)
Inconel -- 1000°F (538°C)
Tantalum -- 500°F (260°C)
Aluminum -- 260°F (127°C)

Tri-State
 TECHNICAL SALES CORPORATION
 382 Lancaster Avenue • PO Box 4006 • Malvern, PA 19355
 Phone: 610-847-5700
 Fax: 610-847-3905
 E-mail: corp@tristatecorp.com
 Web: http://www.tristatecorp.com

Table I - Minimum - Maximum Pressures (psig/barg @ 72°F/22°C)

Nominal Size	DISC MATERIALS					
	Nickel / Monel / 316SS Inconel / Tantalum		Hastelloy C		Aluminum	
	Min	Max	Min	Max	Min	Max
1 "	20	125	40	140	14	90
25 mm	1,38	8,62	2,75	9,66	0,965	6,21
1 1/2 "	16	100	30	110	11	75
40 mm	1,10	6,90	2,07	7,59	0,758	5,17
2 "	15	89	25	94	10	70
50 mm	1,03	6,14	1,72	6,48	0,690	4,83
3 "	15	69	22	79	10	60
80 mm	1,03	4,75	1,52	5,44	0,690	4,14
4 "	15	59	22	69	10	50
100 mm	1,03	4,06	1,52	4,75	0,690	3,45
6 "	13	50	20	60	9	40
150 mm	0,896	3,45	1,38	4,14	0,620	2,76

- **STAR X Holder:** Materials -- Carbon Steel, 316SS, Monel, and Hastelloy C.
Other materials available upon request.
Accessories -- Gauge tap, nipple and tee, excess flow valve,
pressure gauge, special facings, and Teflon coating.

¹ Inconel and Monel are trademarks of the Inco family of companies. ² Hastelloy is a registered trademark of Haynes International.

CORPORATE HEADQUARTERS

EUROPE

Continental Disc Corporation
P.O. Box 172
2394 ZH Hazerswoude-Rijndijk
THE NETHERLANDS

Phone: (0) 71-5412221
FAX: (0) 71-5414361

Continental Disc Corporation
3160 W. Heartland Dr.
Liberty, Missouri 64068-3385

Phone: (816) 792-1500
FAX: (816) 792-2277 / 5447

GERMANY

Continental Disc Deutschland GmbH
Postfach 1310
D-41337 Korschenbroich
GERMANY

Phone: (0) 2161 642021
FAX: (0) 2161 64766

UNITED KINGDOM

Continental Disc UK Ltd.
Unit 12B, Bates Industrial Estate
Church Road
Harold Wood
Essex RM3 0HU
UNITED KINGDOM

Phone: (0) 1708 386444
FAX: (0) 1708 386486