

Continental Disc Corporation®

Rupture Disc Selection Guide

1-1100



Continental Disc Corporation manufactures rupture discs to our customers' specifications to help protect vessels, equipment and systems against damaging overpressure conditions.

QUALITY

Quality starts with our first contact with you. That quality is an integral part of every step we take to provide you with what you expect to receive. All manufacturing is performed under an approved ISO 9001 Quality Assurance System. C.D.C. can supply rupture discs certified to the standards of the ASME, the European Pressure Equipment Directive, the China Safety Quality Licensing Administration, the 3A Sanitary Standards Council, and many others.

SERVICE

A commitment to supply the services you expect:

- Technical assistance, training and support
- Fast, technical, easily understood quotations
- Providing the product to your specifications
- Shipping schedules that are unmatched in the industry

C.D.C. offers an emergency service program to meet your needs. Shipping schedules are adjusted daily to meet your emergency requirements.

QUALITY, SERVICE, TECHNICAL SUPPORT, INNOVATIVE PRODUCTS

These are the benchmarks that enable C.D.C. to provide you, our customer, with the best possible products and services.

TECHNICAL SUPPORT

Our policy is to continuously train in-house and field personnel. This has resulted in C.D.C.'s reputation as a **provider of correct, effective answers to special pressure relief application problems.** We offer technical seminars for:

- Rupture disc applications
- Custom manufactured products
- Installation and handling
- Maintenance procedures

With a world-wide representative network backed by an in-house technical staff, C.D.C. can assist in determining the best and most economical rupture disc for your specific needs.

INNOVATIVE PRODUCTS

We are leading the way to tomorrow! Exclusive products introduced to meet our customers' needs include:

ULTRX® Rupture Disc... A scored, reverse acting rupture disc for either GASEOUS or LIQUID systems.

LOTRX® Rupture Disc... A scored, reverse acting rupture disc with features that make it ideal for low pressure applications – as low as 1.5 psig (0,103 barg).

B.D.I.® ALARM SYSTEM... Immediately notifies operators that a rupture disc has burst.

CAL-VAC®/POS-A-SET® Rupture Discs... The industry's first ultralow pressure rupture disc capable of operating in inches of water column.

QUICK-CHANGE® HOLDER... For fast, easy rupture disc changeout.

3-D TAG... A three-dimensional flow tag of corrosion resistant stainless steel to provide visual verification the rupture disc is properly oriented in the system.

In many cases, the type of rupture disc for a given application may be found using the following steps:

1. To select the proper rupture disc for any application, it is important to begin by writing down specific data about your system.
 - a. Maximum allowable working pressure of the vessel (MAWP): psig, barg, kg/cm², etc.
 - b. Maximum operating conditions: Pressure: psig, barg, kg/cm², etc. Temperature: degree of Fahrenheit, Centigrade, etc.
 - c. Rupture disc burst conditions: Pressure: psig, barg, kg/cm², etc. Temperature: degree of Fahrenheit, Centigrade, etc.
 - d. Process media: liquid or gas
 - e. Backpressure and/or vacuum conditions: psig, barg, kg/cm², etc.
 - f. Service conditions: static, cyclic or pulsating. If known, what is the frequency of cycles or pulsations
 - g. Code/Standards requirements: ASME Section III or VIII, BSI, EN, ISO, TUV, JIS, DIN, etc.
 - h. Appropriate rupture disc and holder material to meet corrosive and/or temperature requirements of the application
 - i. Flange connection type and class at rupture disc installation
 - j. Other special conditions
2. Calculate the system operating to rupture disc burst pressure ratio.

$$\% \text{ Ratio} = \frac{\text{maximum operating pressure} \times 100}{\text{minimum rupture disc burst pressure}}$$
3. Refer to page 18, 19 & 20 of this guide and make a tentative rupture disc selection from the chart using the system data summarized in steps 1 and 2.
4. Check the appropriate C.D.C. product literature to assure the rupture disc burst pressure is within the minimum and maximum pressure capability of the selected rupture disc type and material.
5. Select required options or accessories for both the rupture disc and holder, such as coating, lining, J-Hook, excess flow valve, vacuum support, etc.
6. Refer to the specific C.D.C. product literature for detailed ordering information.

The final selection of a rupture disc and holder is the responsibility of the customer. If you need assistance or additional technical information, consult your C.D.C. representative or the factory.



TYPE OF DISC

No single type of rupture disc will meet all the numerous applications of an industry. Each type of rupture disc, Tension or Reverse Acting, has its own characteristics and capabilities.

Tension Type Rupture Discs

Fig. A

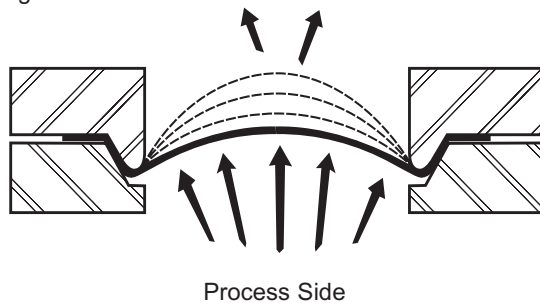
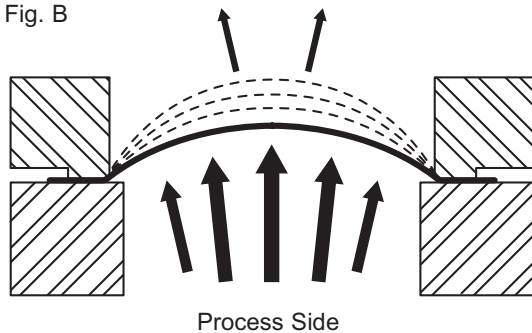


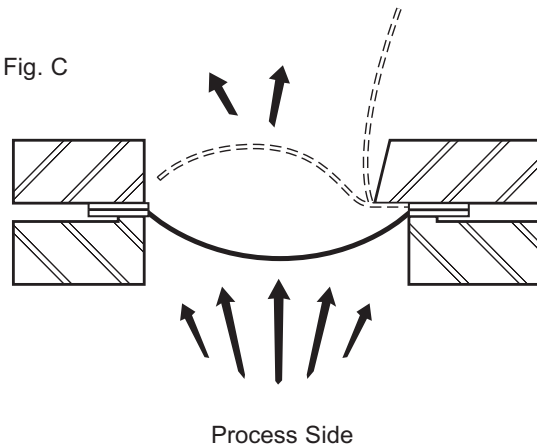
Fig. B



Tension Type rupture discs are oriented in a system with the process media pressure against the concave side of the rupture disc (Figure A, 30° Seat; Figure B, Flat Seat). As the process pressure increases beyond the allowable operating pressure, the rupture disc starts to grow. This growth will continue as the pressure increases, until the tensile strength of the material is reached and rupture occurs.

Reverse Acting Rupture Discs

Fig. C



Reverse Acting rupture discs are oriented in a system with the process media pressure against the convex side of the disc (Figure C), placing the rupture disc in compression. As the burst pressure rating of the disc is reached, the compression loading on the rupture disc causes it to reverse, snapping through the neutral position and causing it to open by a predetermined scoring pattern or knife blade penetration.

A reverse acting rupture disc provides some advantages, as compared to tension type rupture discs, which may warrant consideration when selecting a rupture disc. These advantages include:

- Zero manufacturing range allowing the rupture disc to operate to 90% of its stamped burst pressure
- Full vacuum capabilities without the need of an additional support member
- Longer service life under cyclic or pulsating conditions
- Constructed using thicker materials providing greater resistance to corrosion

Pages 5-17 of this guide provide a brief overview of the various tension and reverse acting design rupture discs, holders, accessories and options offered by Continental Disc Corporation. For detailed information regarding a specific design, refer to the bulletin noted at the end of each product overview, or contact the factory directly.

Standard Rupture Disc



A **Standard Rupture Disc** is a solid metal, differential pressure relief device with an instantaneous, full-opening, non-reclosing design.

SPECIFICATIONS

Sizes: 1/4" - 30"
(6,0mm - 750mm) diameter

Operating conditions:

Pressure: Up to 70% of rated burst pressure

Temperature: To 1000°F (538°C)

Depending on material

Burst pressure: 3 to 80,000 psig @ 72°F
(0,207 to 5516 barg @ 22°C)

Depending on size

Service: Liquid or gas, static, cyclic and pulsating conditions

Material: Aluminum, Nickel, Inconel[®]*, Monel[®]*, Silver, Tantalum, Hastelloy C and 316SS; other materials available

Tagging: Three-dimensional stainless steel flow tag attached to 1" (25mm) and above

Seat type: 30 degree or flat seat

Holders: Insert, Full Bolted, Union, Screw-Type, Tite-Seal or QUICK-CHANGE holders

Alarm system: B.D.I. Alarm System compatible

Options:

Rupture Disc: Liners, coatings, protective rings, gaskets, vacuum or handling supports and dent protectors

Holder: J-Hook, coating, special gasket surface finish, gauge tap

Composite Rupture Disc



The **Composite Rupture Disc** is designed for systems requiring a lower burst pressure than offered in Standard discs. C.D.C.'s patented seven-hole center pattern is designed for non-fragmentation when used with a Teflon seal.

SPECIFICATIONS

Sizes: 1" - 30"
(25mm - 750mm) diameter

Operating conditions:

Pressure: Up to 80% of rated burst pressure

Temperature: To 1000°F (538°C)

Depending on material

Burst pressure: 2 to 1440 psig @ 72°F
(0,138 to 99,3 barg @ 22°C)

Depending on size

Service: Liquid or gas, static, pulsating or cyclic conditions; may be used under pressure relief valves

Material:

Top Section: 316SS, Nickel, Inconel, Monel, Tantalum, Aluminum, or Hastelloy[®]** C.

Seal: Teflon[®]*** or metal

Other materials available

Tagging: Three-dimensional stainless steel flow tag attached to 1" (25mm) and above

Seat type: 30 degree

Holders: Insert, Full Bolted, Union, or QUICK-CHANGE holders

Alarm system: B.D.I. Alarm System compatible

Options:

Rupture Disc: Liners, protective rings, gaskets, vacuum or handling supports

Holder: J-Hook, coating, special gasket surface finish, gauge tap

For additional information:

Standard Type Rupture Disc bulletin #2-2201-2

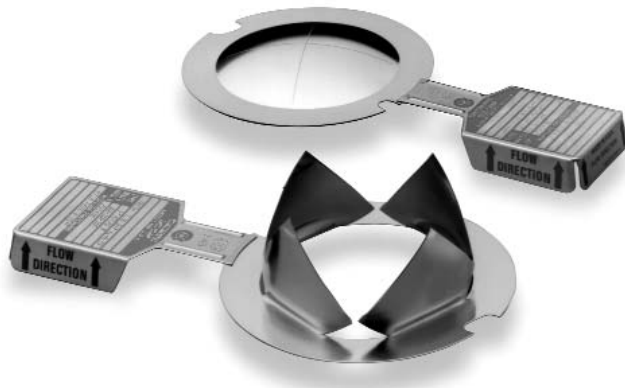
Composite Type Rupture Disc bulletin #2-2202-2

*Inconel and Monel are registered trademarks of the Inco family of companies.

**Hastelloy is a registered trademark of Haynes International.

***Teflon is a registered trademark of E.I. du Pont de Nemours and Company used under license.

MICRO X® Cross Scored Rupture Disc



The **MICRO X Rupture Disc** is a cross-scored flat seat tension type rupture disc. It is designed for non-fragmentation with a four-petal opening.

SPECIFICATIONS:

Sizes: 1" - 36"

(25mm - 900mm) diameter

Operating conditions:

Pressure: Up to 80% of rated burst pressure

Temperature: To 1000°F (538°C)

Depending on material

Burst pressure: 15 to 3600 psig @ 72°F

(1,03 to 248 barg @ 22°C)

Depending on size

Service: Liquid or gas, static, pulsating or cyclic conditions; may be used under a pressure relief valve

Material: Nickel, Monel, Inconel, Tantalum, Hastelloy C, or 316SS;
other materials available

Tagging: Three-dimensional stainless steel flow tag attached to all sizes

Seat type: Flat seat

Holder: UNISERT®, QUICK-CHANGE or CLEAN-SWEEP® holder

Alarm system: B.D.I. Alarm System compatible

Options:

Rupture Disc: Liners, coatings, vacuum support (vacuum support not required in 1"- 4" {25mm-100mm} size)

Holder: J-Hook, coating, special gasket surface finish, gauge tap, tantalum lining (UNISERT)

Composite Flat Seat Rupture Disc



The **Composite Flat Seat Rupture Disc** is designed for systems requiring a lower burst pressure than offered in a MICRO X Rupture Disc. C.D.C.'s seven-hole center pattern provides a non-fragmenting design when used with a Teflon seal.

SPECIFICATIONS:

Sizes: 1 1/16" - 36"

(17,5mm - 900mm) diameter

Operating conditions:

Pressure: Up to 80% of rated burst pressure

Temperature: To 1000°F (538°C)

Depending on material

Burst pressure: 2 to 1440 psig @ 72°F

(0,138 to 99,3 barg @ 22°C)

Depending on size

Service: Liquid or gas, static, pulsating or cyclic conditions; may be used under pressure relief valves

Material:

Top Section: 316SS, Nickel, Inconel, Monel, Tantalum, or Hastelloy C

Seal: Teflon or metal

Other materials available

Tagging: Three-dimensional stainless steel flow tag attached to 1" (25mm) and above

Seat type: Flat seat

Holders: UNISERT, Tite-Seal, Screw Type, QUICK-CHANGE, Sanitary or CLEAN-SWEEP holder

Alarm system: B.D.I. Alarm System compatible

Options:

Rupture Disc: Liners, protective rings, gaskets, vacuum support

Holder: J-Hook, coating, special gasket surface finish, gauge tap, tantalum lining (UNISERT)

For additional information:

UNISERT Assembly bulletin #2-2203-2

ENVIRO-SEAL Rupture Disc



The **ENVIRO-SEAL Rupture Disc** is a flat composite rupture disc, designed to provide economic isolation for low pressure atmospheric storage vessels or to isolate the downstream side of a pressure relief valve.

ENVIRO-SEAL Rupture Discs are available in three designs:

- Type I: Burst in one direction only
- Type II & III: Burst in either direction, positive or vacuum, at the same burst pressure

SPECIFICATIONS:

Sizes: 2" - 36"
(50mm - 900mm) diameter

Operating conditions:

Pressure: Up to 50% of rated burst pressure
 Temperature: To 400°F (204°C)
 Burst pressure: 1 to 59 psig @ 72°F
 (0,069 to 4,07 barg @ 22°C)
Depending on size

Service: Gas or liquid

Material:

Top section(s): 316SS, Nickel, Inconel,
 Monel, Tantalum, or Hastelloy C;
 other materials available
 Seal(s): Teflon or Polyethylene
 (at the discretion of C.D.C.)
 Gaskets: Non-asbestos both sides

Tagging: Three-dimensional stainless steel
 flow tag attached

Alarm system: B.D.I. Alarm System compatible

Seat type: Flat Seat

Holder: Designed to mount directly between
 standard bore ANSI, DIN or JIS
 companion flanges

Tite-Seal Rupture Disc Assemblies



The **Tite-Seal Rupture Disc Assembly** is an economical "throwaway" sealed unit available with 1/4", 3/8" or 1/2" MPT inlet connections and outlet configurations with an MPT connection, muffled or free vent.

SPECIFICATIONS:

Disc type:

1/2" Standard Preformed Rupture Disc:

Operating conditions:

Pressure: Up to 70% of rated burst pressure
 Temperature: To 400°F (204°C)
 Burst pressure: 65 to 3000 psig @ 72°F
 (4,48 to 207 barg @ 22°C)

Material: Silver, Aluminum, Monel, Nickel,
 Inconel, Hastelloy C[®]* or 316SS

Options: Vacuum support, Teflon coating or
 gasket

11/16" Composite Rupture Disc:

Operating conditions:

Pressure: Up to 80% of rated burst pressure
 Temperature: To 400°F (204°C)
 Burst pressure: 30 to 1000 psig @ 72°F
 (2,07 to 68,9 barg @ 22°C)

Material:

Top Section: 316SS, Monel, Inconel,
 Nickel or Hastelloy C;
 other materials available

Seal: Teflon or Silver

Vacuum support: 316SS or Hastelloy C

Holder material: Brass

For additional information:

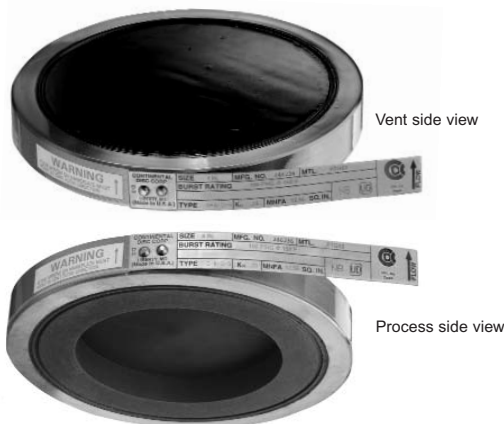
Composite Type Rupture Disc bulletin #2-2202-2

Tite-Seal Rupture Disc bulletin #2-2206-2

TENSION TYPE

GRAFSSERT® Rupture Disc

Graphite Rupture Disc with armored ring



GRAFSSERT Rupture Discs are machined from a monolithic piece of graphite and impregnated with phenolic. Graphite discs are corrosive resistant to many chemicals.

SPECIFICATIONS

Sizes: 1/2" - 24"
(13mm - 600mm) diameter

Operating conditions:

Pressure: Up to 80% of rated burst pressure. 90% available in specific static conditions; consult the factory for details

Temperature: To 700°F (371°C)

Burst pressure: 0.25 to 720 psig @ 72°F
(0,017 to 49,6 barg @ 22°C)
Depending on size

Service: Gas or liquid

Material: Graphite impregnated with phenolic

Seat configuration: Flat seat

Holder: Installs directly between 150# or 300# ANSI class flanges and equivalent classes DIN or JIS flanges (separate holder not required)

Tagging: Stainless steel tag attached

Alarm system: B.D.I. Alarm System compatible

Options: Coatings, liners, armor ring, vacuum support, gaskets, high temperature assembly

ICON™ Rupture Disc



The **ICON Rupture Disc** is a cross-scored, non-fragmenting design solid metal rupture disc specifically designed to protect transportation vessels like intermodal tank containers (common in Europe and Asia), railroad tank cars, tank trucks, and other vessels that transport liquids or gas products.

SPECIFICATIONS

Sizes: 65mm and 80mm

Operating conditions:

Pressure: Up to 80% of rated burst pressure; full vacuum

Standard Burst pressures:
3,67; 4,10 or 4,84 barg at 20°C;
other pressures available

Service: Liquid or gas

Material: Nickel disc standard, with 316SS inlet/outlet rings; other materials available

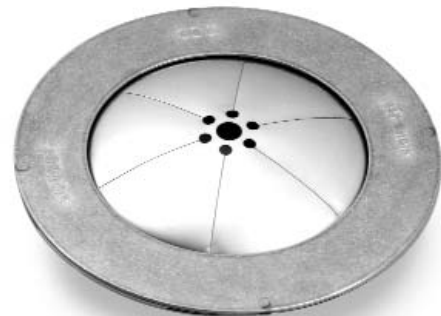
Option: Teflon liner

Seat type: Flat seat

Holders: Designed to mount directly to tank flanges

Tagging: Stainless steel tag attached

Tanksert Rupture Disc



The **Tanksert Rupture Disc** is designed for use on railroad tank cars, over the road tank trucks and other transportable vessels. It is designed to fit both threaded and bolted type **Safety Vent Assemblies**.

Two styles are available:

- 1. Tanksert Rupture Disc with Bee Screen** is used for applications that require protection against bees, insects or other airborne particles from entering the tank after a rupture disc opening has occurred.
- 2. Tanksert Rupture Disc without bee screen.**

SPECIFICATIONS

Size: 2" to fit Safety Vent Assembly

Operating pressure:

Up to 80% of rated burst pressure

Standard Burst pressures:

Stocked and available for immediate shipment in:

25 to 30	psig @ 72°F
40 to 45	" "
55 to 60	" "
70 to 75	" "
95 to 100	" "
155 to 165	" "

Material: Stainless steel rupture disc components with Teflon seal; Bee screen of #14 or #20 mesh stainless steel

For additional information:

Impervious Graphite Rupture Discs bulletin #2-2204-2
Icon Rupture Disc technical brief
Tanksert Rupture Disc bulletin #73-300

ULTRX®, MINTRX®, STAR X®, LOTRX® Rupture Discs

These scored reverse acting rupture discs are state of the art products utilizing our patented failure initiating indents, a highly accurate manufacturing method to achieve and control a burst pressure at close tolerances, plus a precision semicircular score to provide a clean, consistent opening pattern.



ULTRX Rupture Disc

Sizes: 1" - 12"
(25mm - 300mm) diameter

Burst pressure:
15 to 1000 psig @ 72°F
(1,03 to 68,9 barg @ 22°C)

MINTRX Rupture Disc

Sizes: 1" - 8"
(25mm - 200mm) diameter

Burst pressure:
20 to 139 psig @ 72°F
(1,38 to 9,58 barg @ 22°C)

STAR X Rupture Disc

Sizes: 1" - 6"
(25mm - 150mm) diameter

Burst pressure:
13 to 140 psig @ 72°F
(0,896 to 9,65 barg @ 22°C)

LOTRX Rupture Disc

Sizes: 1" - 8"
(25mm - 200mm) diameter

Burst pressure:
1.5 to 39.9 psig @ 72°F
(0,103 to 2,75 barg @ 22°C)

PROVEN FEATURES INCLUDE:

- **ULTRX** operates in GAS, VAPOR or FULL LIQUID service conditions.
- **MINTRX, STAR X, and LOTRX** operate in gaseous service conditions – consult the factory for liquid service applications.
- Zero manufacturing range as standard, allowing the disc to be operated to 90% of its 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).
- Safety ratio of 1.5 or less. In the event of rupture disc damage, burst will occur within 1.5 times the rated burst pressure (LOTRX safety ratio: 1.0).
- Inherent with most reverse acting type of rupture discs on the market, these discs will operate in pressure-to-vacuum cycling applications without an additional vacuum support component, for burst pressures 5 psig (0,34 barg) and above.
- Encapsulating rings on ULTRX, MINTRX, and LOTRX provide perfect alignment and minimize seal load sensitivity.
- Three-dimensional stainless steel flow tag provides immediate verification of proper installation. The tag is stainless steel for resistance to corrosion.
- Designed for non-fragmentation.
- Unique holder utilizes disc alignment pins to aid proper disc orientation in holder, and a J-Hook to aid proper orientation relative to flow direction between companion flanges.
- Thicker disc material (than tension type rupture disc of similar burst pressure) adds corrosion resistance.

SPECIFICATIONS:

- Sizes:** Shown above; consult the factory for larger sizes
- Operating pressure:**
Pressure: Up to 90% of rated burst pressure (for burst pressures 40 psig and above)
Temperature: To 1000°F (538°C)
- Service:** Static, pulsating or cyclic conditions; excellent for use under pressure relief valve
- Material:** Hastelloy C, Inconel, Nickel, Monel, or 316SS; other materials available
- Tagging:** Three dimensional stainless steel flow tag attached to all sizes
- Manufacturing range:** ZERO is standard; -5% or -10% optional
- Seat configuration:** Flat seat
- Holder:** ULTRX, MINTRX, STAR X and LOTRX holders, each with unique alignment pin pattern and J-Hook as standard, or Quick-Change
- Alarm system:** B.D.I. Alarm System compatible (consult factory for B.D.I. Alarm System with LOTRX Rupture Disc)
- Options:**
Rupture Disc: Process side - liner
Outlet side - protective cover
Holder: Gauge tap, Teflon coating, special gasket surface finish, tantalum lining

For additional information:

ULTRX Rupture Disc bulletin #3-2210-3
STAR X Technical Brief #TB-SRX-0394

MINTRX Rupture Disc bulletin #3-2218-3
LOTRX Technical Brief #TB-LTRX0101

RCS™ Rupture Disc Assembly



The **RCS Rupture Disc** is a reverse acting, cross-scored, solid metal rupture disc, providing reliable pressure relief protection, easy installation, and retrofit to your pre-existing piping arrangement.

SPECIFICATIONS:

Sizes: 1" - 32"

(25mm - 800mm) diameter

Operating conditions:

Pressure: Up to 90% of rated burst pressure

Temperature: To 1000°F (538°C)

Burst pressure: 20 to 1000 psig @ 72°F
(1,38 to 68,9 barg @ 22°C)

Depending on size

Service: Gaseous, static, pulsating or cyclic conditions; may be used under pressure relief valve

Material: Nickel, 316SS, Monel, Inconel and Hastelloy C

Tagging: Three-dimensional stainless steel flow tag attached to all sizes

Seat configuration: Flat seat

Holder: RCS Insert Holder

Alarm system: B.D.I. Alarm System compatible

Options:

Rupture Disc: Process side - Teflon liner
Outlet side - protective cover

Holder: J-Hook, coatings, special gasket surface finish

SANITRX® Rupture Disc



The **SANITRX Rupture Disc** is a reverse acting, solid metal rupture disc with Continental's patented "failure initiating indents," designed to provide overpressure protection in sanitary environments. Also available, the SANITRX LP™ Rupture Disc, with lower pressures and a much lower K_R factor, available in 1" - 3" (25-80mm) size.

SPECIFICATIONS:

Sizes: 1-1/2" - 4"

(40mm - 100mm) diameter

Operating conditions:

Pressure: Up to 90% of rated burst pressure

Temperature: Rated up to 450°F (232°C),
Depending on gasket material

Burst pressure: 14 to 500 psig @ 72°F
(0,965 to 34,5 barg @ 22°C)

Depending on size

Service: Gaseous, static, pulsating or cyclic conditions; may be used under pressure relief valve

Material:

Disc: Nickel, Monel, 316SS, Inconel, Hastelloy C, Aluminum and Tantalum

Gasket: Viton, Buna-N, Silicone, EPDM, PTFE Teflon, and Platinum Cured Silicone

Tagging: Three-dimensional stainless steel flow tag attached to all sizes

Seat configuration: Flat seat

Holder: Designed to install directly between sanitary tube O.D. connections using a sanitary clamping device

Alarm system: B.D.I. Alarm System compatible

For additional information:

RCS Rupture Disc Assembly bulletin #3-2225

SANITRX Rupture Disc bulletin #4-8803

ZAP® Reverse Acting Rupture Disc



The **ZAP Reverse Acting Rupture Disc** design utilizes replaceable knife blades in the holder outlet to cut open the rupture disc as reversal occurs.

Proven features include:

- Zero manufacturing range
- Exceptional cyclic or pulsating service life compared to tension type rupture discs
- Designed for non-fragmentation
- May be operated under full vacuum or backpressure to 110% of the rated burst pressure without an additional vacuum support compared to tension type rupture disc
- Encapsulating rings provide perfect alignment and minimize seal load sensitivity
- Replaceable knife blades for easy, quick replacement
- Thicker disc material adds corrosion resistance

SPECIFICATIONS:

Sizes: 1" - 8"
(25mm - 200mm) diameter

Operating conditions:
Pressure: Up to 90% of rated burst pressure
Temperature: To 1000°F (538°C)

Burst pressure: 15 to 1000 psig @ 72°F
(1,03 to 68,9 barg @ 22°C)
Depending on size

Service: Gaseous, static, pulsating or cyclic conditions; may be used under pressure relief valve

Material: Aluminum, Nickel, Monel, Inconel or 316SS; other materials available

Seat configuration: Flat seat

Holder: ZAP or QUICK-CHANGE holder

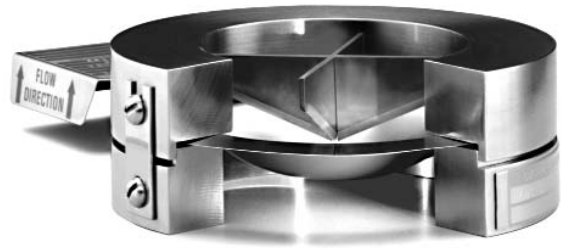
Encapsulating rings: 316SS Standard; other materials available

Alarm system: B.D.I. Alarm System compatible

Options:

- Disc: Process side - liner
Outlet side - protective cover
- Holder: Gauge tap, Teflon coating, replacement blade assembly, special gasket surface finish

KBA Reverse Acting Rupture Disc



The **KBA Reverse Acting Rupture Disc** utilizes permanently attached knife blades in the holder outlet to cut open the disc as reversal occurs.

Proven features include:

- Zero manufacturing range
- Exceptional cyclic or pulsating service life compared to tension type rupture discs
- Designed for non-fragmentation
- May operate under full vacuum or backpressure to 110% of the rated burst pressure without an additional vacuum support compared to tension type rupture disc
- Thicker disc material adds corrosion resistance
- Permanently attached knife blades

SPECIFICATIONS:

Sizes: 1" - 32"
(25mm - 800mm) diameter

Operating conditions:
Pressure: Up to 90% of rated burst pressure
Temperature: To 1000°F (538°C)

Burst pressure: 15 to 1000 psig @ 72°F
(1,03 to 68,9 barg @ 22°C)
Depending on size

Service: Gaseous, static, pulsating or cyclic conditions; may be used under pressure relief valves

Material: Aluminum, Nickel, Monel, Inconel or 316SS; other materials available

Holder: KBA holder

Alarm system: B.D.I. Alarm System compatible

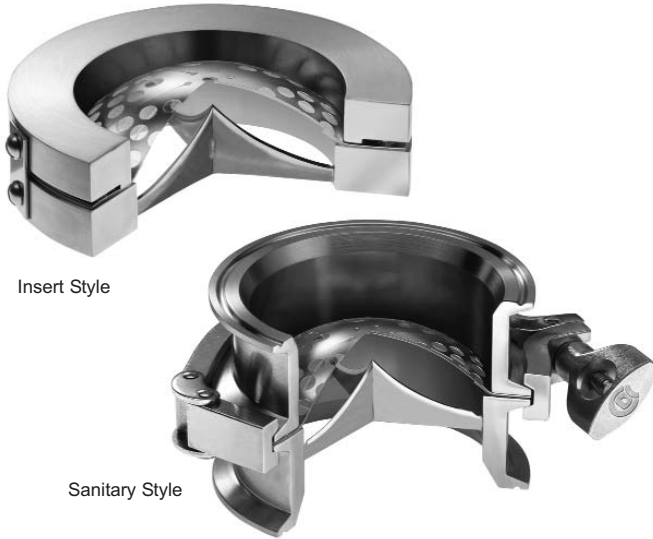
Options:

- Disc: Process side - liner
Outlet side - protective cover
- Holder: Gauge tap, Teflon coating, special gasket surface finish

For additional information:

ZAP & KBA Reverse Acting Rupture Discs bulletin #3-2220-3

CAL-VAC® Rupture Disc Assembly



POS-A-SET® Rupture Disc Assembly



The **CAL-VAC Rupture Disc Assembly** is a highly accurate pressure relief device for protecting vessels and equipment against damaging vacuum conditions.

Proven features include:

- Designed to open on vacuum within a 6" water column spread
- Pressure setting starting at 1" water column
- Can be operated to within 1" water column or 90%, dependent upon rating
- Dual directional pressure protection (positive or negative)
- Designed for non-fragmentation

SPECIFICATIONS:

Sizes: Insert Style 3" - 12"
(80mm - 300mm) diameter
Sanitary Style 3" - 10"
(80mm - 250mm) diameter

Operating conditions:

Vacuum Pressure: Up to 90% of minimum vacuum pressure set point or within 1" of water column, whichever is greater

Positive pressure: Up to 80% of rated burst pressure

Temperature: To 400°F (204°C)

Burst pressure:

Vacuum: 6" water column spread
between 1" to 30" of water column
Depending on size

Positive: 2 to 150 psig (0,138 - 10,3 barg)
Depending on size

Seat configuration: Flat seat

Holder: Sanitary, insert type or QUICK-CHANGE

Alarm system: B.D.I. Alarm System compatible

The **POS-A-SET Rupture Disc Assembly** is a highly accurate pressure relief device for protecting vessels and equipment against damaging positive pressure conditions.

Proven features include:

- Designed to open on positive pressure within a 6" water column spread
- Positive pressure setting starting at 1" water column
- Can be operated to within 1" water column or 90%, dependent upon rating
- Dual directional pressure protection (positive or negative)
- Designed for non-fragmentation

SPECIFICATIONS:

Sizes: Insert Style 3" - 12"
(80mm - 300mm) diameter
Sanitary Style 3" - 10"
(80mm - 250mm) diameter

Operating conditions:

Positive Pressure: Up to 90% of minimum positive pressure set point or within 1" of water column, whichever is greater

Vacuum: Up to 80% of rated pressure in the vacuum direction

Temperature: To 400°F (204°C)

Burst pressure:

Positive: 6" water column spread
between 1" to 30" of water column
Depending on size

Vacuum: To full vacuum.

Seat configuration: Flat seat

Holder: Sanitary, insert type or QUICK-CHANGE

Alarm system: B.D.I. Alarm System compatible

For additional information:

CAL-VAC / POS-A-SET Rupture Disc Assemblies bulletin #4-8804-4

The C.D.C. **Vent Panels** are designed to allow full, instantaneous opening, thus minimizing structural or mechanical damage that may be caused by the deflagration of dust, gas or mist.

Our Vent Panels feature:

- Full, instantaneous opening under dynamic or static pressure conditions
- Designed for non-fragmentation
- Available in square, rectangular or circular configurations
- Interchangeable with many existing applications
- B.D.I. Alarm System compatible

Vent Panel Types

C.D.C. vent panels are offered in the following types of construction:

VP Series:

The VP series vent panel is a flat, scored aluminum panel, epoxy coated, for applications requiring protection to as low as 1 psig. This panel may be used for positive pressure or vacuum pulsating conditions.

CP Series:

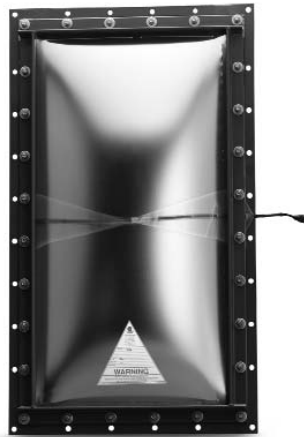
The CP series flat composite vent panel is excellent for applications requiring cyclic conditions (positive to negative pressures), low opening pressures and the need for stainless steel construction.

SFC and CFC Series:

The SFC and CFC series prebulged vent panels are excellent for applications operating up to full vacuum. The SFC series are prebulged, circular, solid aluminum vent panels with a handling or vacuum support. The CFC series are prebulged, circular composite vent panels with a handling or vacuum support, usually made of 316SS and Teflon components.

CFR and CFS Series Formed Vent Panels:

The CFR (rectangular) and CFS (square) series are prebulged 316SS vent panels with vacuum support and Teflon seal. The CFR and CFS vent panels have an operating ratio of up to 80% of the minimum tagged rating.



SPECIFICATIONS:

Sizes:

Rectangular or Square:
12" x 12" - 44" x 69".
(30 cm x 30 cm - 112 cm x 175 cm)

Circular: 10" - 44"
(25 cm - 112 cm) diameter

Operating conditions:

Flat panels: Up to 50% of rated burst pressure for positive or vacuum conditions

Preformed (prebulged): Up to 80% of rated burst pressure for positive pressure and up to full vacuum

Temperature: To 450°F (232°C)

Burst pressure: 1 to 10 psig @ 72°F
(0,069 to 0,689 barg @ 22°C)

Service: Gaseous, static, pulsating or cyclic

Holder: Lightweight flange construction

Alarm system: B.D.I. Alarm System compatible

Options: Coatings, vacuum support, dent protector, handling support, gaskets

For additional information:

Vent Panels bulletin #6-4401-6

Formed Vent Panels bulletin #6-4402



The Continental Disc state of the art **B.D.I. Alarm System** is designed specifically for use with Continental rupture discs or vent panels.

The B.D.I. Alarm System consists of an alarm strip, interfaced with a monitoring unit, computer, annunciator panel, control panel or other equipment. The alarm system is activated by the opening of a rupture disc or vent panel.

The B.D.I. Alarm System is a normally closed, low-powered circuit. When a rupture disc opens, the alarm strip is severed, interrupting the circuit which activates a monitoring device. This device is used to signal that an overpressure condition has occurred and that media is venting.

Proven features include:

- Signals instantly when a rupture disc or vent panel has opened.
- Positive signal of fugitive emissions and/or the occurrence of an overpressure relief condition.
- Signals emergency equipment, control room and/or operating personnel to alter or stop a process.
- Prevents an undetected open vent line once an overpressure condition occurs.



SPECIFICATIONS:

The B.D.I. Alarm may be used on the following C.D.C. products:

Tension type rupture discs

- Standard
- Composite (30° Seat or Flat Seat)
- MICRO X scored
- ENVIRO-SEAL
- Graphite

Reverse acting rupture discs

- ULTRX
- MINTRX
- STAR X
- LOTRX (3" and larger sizes)
- SANITRX
- SANITRX LP
- RCS
- ZAP
- KBA

Ultralow pressure rupture discs

- CAL-VAC
- POS-A-SET

Vent Panels

B.D.I. Alarm Strip operating limits:

Maximum current: 50 milliamps
 Maximum voltage: 24 VDC RMS
 Temperature: -40°F to 400°F
 (-40°C to 206°C)

Monitor operating limits:

Power source:
 115/230VAC @ 50/60 Hz or
 24 or 12 VDC ±1 volt
 Output relay contacts rating:
 2 AMPS @120 V resistive
 1 AMP @ 120 V inductive
 2 AMPS @ 24 V inductive
 Operating temperature range:
 To 122°F (50°C)

Construction:

- The standard monitor unit has a NEMA 1 wall mounted enclosure.
- Enclosures are available for other NEMA classifications.
- Models SB-100, BB-100, BB-400 and MTB-700 are intrinsically safe designs.
- Monitors specifically designed to meet special requirements are available.
- MTB-700 meets several international standards for intrinsically safe design.

For additional information:
B.D.I. Alarm System bulletin #5-7701-5



Solutions...for Tough Pressure Relief Problems

Whether it's from the standard product line, or a custom-manufactured rupture disc for a one-of-a-kind application, Continental Disc Corporation has built a 40-year reputation for solving the toughest pressure relief problems.

For OEM's. Defense Industries. Space exploration program. Aircraft and aerospace manufacturers. The chemical and petrochemical industries. Food processors. The electronics industry. And countless more.

Problem Solving

Continental Disc Corporation's custom manufacturing capabilities have been tapped for such wide-ranging projects as air conditioning units, oxygen supply systems, aircraft ejection seats, sonobuoys, and the space shuttle. The same engineering, testing, and manufacturing talent that has solved one-of-a-kind problems for worldwide industries is now available to deliver innovative solutions for your specific pressure relief problems.

Working With Specialized Technologies...Like Yours

Solving pressure relief problems for you is the special role played by C.D.C.'s Product Development Group and the Special Products Group. This pool of product development expertise has been retrofitting C.D.C. products into clients' systems for over 40 years. They are engineers who are at home with special or exotic materials, ultrahigh or ultralow burst pressures, as well as state-of-the-art processing and testing requirements.

Whether your needs are for quantities of one or one thousand, Continental Disc is ready to solve your pressure relief problems. Contact our Corporate Office in Liberty, Missouri, or one of our international offices located in The Netherlands, Germany and the United Kingdom.

For additional information:
CUSTOMIZED Pressure Relief Products bulletin #7-8803-7

RUPTURE DISC HOLDERS

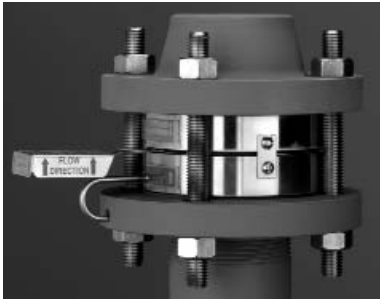
C.D.C. holders are available in a variety of types and styles to meet your needs. The product chart, as shown on pages 18, 19 and 20, shows which disc may be used in specific holders, and the holder options which are available.

C.D.C. offers an extensive line of holders including:

- Insert
- Bolted
- Screw Type
- Union Type
- CLEAN-SWEEP
- Sanitary Holders
- QUICK-CHANGE holders

Consult your C.D.C. representative or the factory for those applications needing additional features or modification.

Insert Holders



Insert type rupture disc holders are flat faced assemblies that fit between two ANSI, DIN, JIS or BSI companion flanges, as shown in the photograph above. Insert holders to fit other standards are available. These holders are designed for eleven different rupture disc styles, described in paragraphs 1 through 6 below. Common features of C.D.C.'s Insert Holders include:

- Fit within companion flange bolts, allowing easy installation and removal
- Preassembly clips are standard and provide means to assemble the rupture disc and holder together before installation in piping system
- Stainless steel flow direction nameplates permanently attached to the holder
- Stainless steel customer identification tag permanently attached

1. 7I Insert holders, designed for Standard and Composite rupture discs, are available in 30° light or heavy lip configurations, dependent upon size.

2. The UNISERT Insert holder has a flat seat configuration for use with either a MICRO X or Composite flat seat rupture disc. Holder alignment pins and matching notches in the rupture disc provide

correct rupture disc orientation in the holder. A J-Hook, along with flow direction arrows on the nameplate, aids in proper assembly installation between the companion flanges.

3. The RHI Insert holder has a flat seat configuration for use with either a MICRO X or Composite flat seat rupture disc. The minimal overall height of the assembly allows installation in tight piping arrangements, and retrofit in many existing installations, while still providing the benefits and features of the Continental flat seat rupture disc design (see UNISERT).

4. The ULTRX, MINTRX, STAR X, and LOTRX Insert holders are designed with either a tapered or flat raised seat on the holder inlet. This design allows a uniform seal load on the mating rupture disc. Each holder has a number of round and/or oblong pins and the mating rupture disc is identically notched, providing proper rupture disc orientation in the holder. A J-Hook and flow direction arrows on the nameplates aid in the correct assembly orientation between companion flanges.

5. The ZAP and KBA Insert holders have an integral mating interlock device which correctly orients the holder inlet and outlet with respect to each other. The ZAP Holder is available with either a replaceable or permanently welded knife blade assembly. The KBA Holder comes with permanently welded knife blades.

6. The RCS Insert holder is designed for simplicity and safety of installation with superior sealing capabilities. Three round pins located in the holder inlet and matching holes in the RCS Rupture Disc provide correct rupture disc and flow direction orientation. A tapered seat configuration allows a uniform seal load on the rupture disc.

Full Bolted Holders



Full Bolted Holders do not need companion flanges. The proper seat configuration is machined directly into the flange. Full bolted holders are available in 30° light or heavy lip seat

configurations, dependent upon size. Welded, threaded or flat faced inlets and outlets are available. Stainless steel flow directional nameplates are provided.

Screw Type Holders



Screw Type Holders are available for pressures ranging up to 20,000 psig. The Screw Type holder is supplied with 1/4" or 1/2" MPT inlet threads in combination with MPT, free or muffled outlets. The 1/2" Standard and 11/16" Composite Rupture Disc are used in these holders. Special high pressure designs are available.

Union Holders



Union Holders are available for pressure ranges up to 6000 psig, depending on disc size. All sizes are available with threaded or welded inlets in combination with threaded, welded or muffled outlets. Special unions are available.

Sealing Capabilities

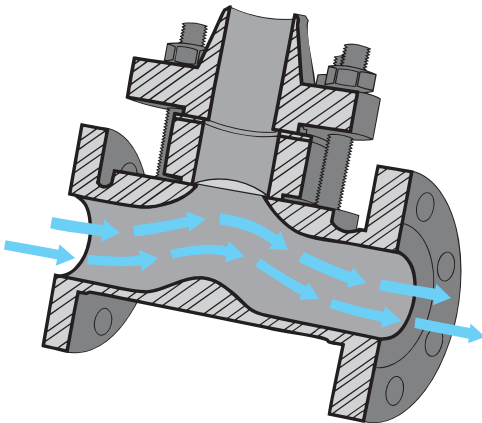
Continental's holder designs provide superior sealing capabilities to prevent product loss or contamination. The tapered seat configuration of Continental's UNISERT, RHI, ULTRX, MINTRX, STAR X and RCS holders outperforms other, similar designs, **without** the need for "pretorque" arrangements. A pretorque-able holder is available for those customers whose specifications require it.

CLEAN-SWEEP® Rupture Disc Holder



The CLEAN-SWEEP Holder is designed for systems handling viscous media processes, particularly where product build-up in a piping system may cause excessive overpressure conditions. This holder is an ideal replacement for rupture discs installed off the leg of a pipe tee where product build-up could affect the proper operation of the rupture disc.

The CLEAN-SWEEP Holder body is specifically designed for a rupture disc. The rupture disc is mounted directly on the holder body adjacent to the process flow. Compared to other designs, the CLEAN-SWEEP greatly reduces the possibility of product build-up under the rupture disc and it is available for pressures up to 1440 psig (99,3 barg).



Sanitary Holder



The C.D.C. Sanitary Rupture Disc Assembly is specifically suited for a wide range of process applications where product purity and corrosion resistance are required. These assemblies are used in dairy, distilling, brewery, food processing, pharmaceutical, canning, cosmetic, petrochemical and many other industries.

The complete assembly consists of a rupture disc, the sanitary holder and a quick release clamp. The holders are offered in straight-through, reducing or self-cleaning configurations and are available for CAL-VAC, POS-A-SET, Composite flat seat and MICRO X rupture discs.

Features include:

- Sanitary clamp connections for easy, quick installation and removal from a system
- Secure, leak-tight assembly
- Sizes 1" - 10" (25mm - 250mm)
- Available with No. 4 finish or electro polished internal, wetted surfaces
- Versatile configurations to suit many piping arrangements
- CAL-VAC and POS-A-SET sanitary holders may be built to 3-A standards.

QUICK-CHANGE Holder



The QUICK-CHANGE Holder allows fast, easy rupture disc changeout from a system, without having to remove a pressure relief valve or outlet piping. The QUICK-CHANGE rupture disc cartridge slips out of the permanently mounted housing and is replaced by a second preassembled cartridge in **seconds**.

The QUICK-CHANGE system:

- Reduces costly downtime to a minimum.
- Allows rupture disc replacement without having to disassemble the outlet piping.

SPECIFICATIONS:

- Size: 1-1/2" - 14"
(40mm - 350mm)
- Flange Class: ANSI 150# or 300#;
Lightweight design available;
Consult factory for details
- Material: Carbon steel, 300 series stainless steel;
other materials on request
- Rupture Disc: Compatible with C.D.C. tension type or reverse acting type rupture discs
- Alarm System: B.D.I. Alarm System compatible

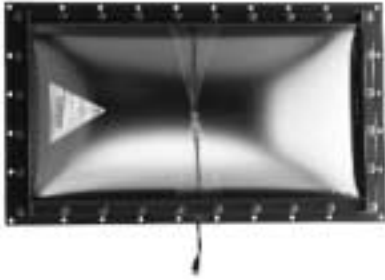
For additional information:

CLEAN-SWEEP Rupture Disc Assembly bulletin #2-3303

SANITARY Fitting Assembly bulletin #4-8802-7

CAL-VAC/POS-A-SET Rupture Disc Assemblies bulletin #4-8804-4

QUICK-CHANGE Contact factory for further information



VENT PANELS provide instantaneous overpressure relief to minimize structural or mechanical damage that may be caused by expanding gases as a result of deflagration of dust, gases or mists. These panels are available in a wide variety of styles, configurations and materials. Refer to page 13 for further information.



TITE-SEAL and SCREW TYPE Assemblies are complete rupture disc and holder units specifically designed for use on pressurized "mini systems." These units provide dependable, instantaneous overpressure relief.

The TITE-SEAL is a disposable design. The SCREW TYPE assembly is reusable. Each design is available with a variety of rupture discs including tension and reverse acting types. Refer to pages 7 and 16 for further information.



The **ICON Rupture Disc** is a cross-scored, non-fragmenting design rupture disc specifically for protection of intermodal tank containers. It is available in 65mm and 80mm sizes and conforms to IMO, ADR, RID, DOT and ISO standards. Refer to page 8 for further information.



The **TANKSERT Rupture Disc** is for railroad tank car service, is available in a full range of standard burst pressures and conforms with ICC regulations. Refer to page 8 for further information.

For additional information, please check the appropriate product categories and fill in your address. Thank you.

TENSION TYPE Rupture Discs

- STANDARD rupture disc
- COMPOSITE rupture disc
- MICRO X rupture disc
- COMPOSITE FLAT SEAT rupture disc
- ENVIRO-SEAL rupture disc
- TITE-SEAL rupture disc
- GRAPHITE rupture disc
- ICON rupture disc
- TANKSERT rupture disc

TENSION TYPE Disc Holders

- INSERT holder
- FULL BOLTED holder
- SCREW TYPE holder
- UNION TYPE holder
- CLEAN SWEEP holder
- SANITARY holder

REVERSE ACTING Rupture Discs / Holders

- ULTRX rupture disc
- MINTRX rupture disc
- STAR X rupture disc
- LOTRX rupture disc
- RCS rupture disc
- SANITRX rupture disc
- ZAP reverse acting rupture disc
- KBA reverse acting rupture disc

ULTRA-LOW PRESSURE Rupture Discs / Holders

- CAL-VAC rupture disc assembly
- POS-A-SET rupture disc assembly

VENT PANELS

- RECTANGULAR OR SQUARE vent panels
- CIRCULAR vent panels

QUICK-CHANGE Holder

- QUICK-CHANGE holder

ALARM SYSTEM

- B.D.I. ALARM SYSTEM

CERTIFICATION

- ASME  CERTIFICATION

Please have a Continental Disc Corporation Representative call. Yes No

NAME _____

TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

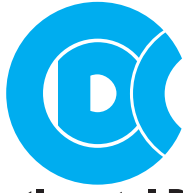
COUNTRY _____ POSTAL CODE _____

TELEPHONE NO. _____

FAX NO. _____

E-MAIL _____

Continental Disc Corporation has representatives located throughout the world.
Contact the C.D.C. office nearest you for the authorized representative in your area.



Continental Disc Corporation
Performance Under Pressure®

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Certified Quality System
First Certified In 1992



ASME Code Symbol Stamp
Available When Specified



Pressure Equipment Directive
Available When Specified



China Manufacture License
Available When Specified

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ALL GAS / LIQUID HANDLING SYSTEMS, I.E. ...CHEMICAL • PETROCHEMICAL • PETROLEUM REFINING
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