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Rupture Discs for Overpressure Protection

Established in 1965, Continental Disc Corporation manufactures rupture discs to our customers’ specifications to help protect vessels, equipment, and systems from damaging overpressure conditions. Continental is a leading manufacturer of rupture disc devices for a variety of process industries, including chemical, pharmaceutical, and petrochemical markets worldwide.

Continental Disc is committed to supplying the services you expect, including:

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

Continental Disc offers an emergency service program to meet your needs. Twenty-four hour emergency service is available 365 days a year.

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

Scored, Reverse Acting Rupture Discs

Continental’s solid metal, scored, reverse acting rupture discs are differential pressure relief devices that provide an instantaneous fully-open, non-reclosing design for protecting vessels, equipment, and systems from an overpressure condition. The ULTRX®, MINTRX®, STAR X®, and LOTRX® rupture discs offer a wide range of pressures and reliable features, including:

- A ZERO MANUFACTURING RANGE as a standard
- Recommended maximum operating pressure of 80% of the rated (marked) burst pressure. See page 6
- Solid metal design in a variety of available materials for corrosion resistance
- Encapsulating rings, which minimize torque sensitivity and provide a leak-tight metal-to-metal seal (handling ring for STAR X Rupture Disc)
- Permanently attached 3-dimensional flow direction tag, alignment pins, and J-Hook for proper rupture disc and holder orientation

The ULTRX, MINTRX, STAR X, and LOTRX rupture discs are all available with the full support and expertise of our Tech Team and Special Projects Group for special applications and new designs.

Seal Load Sensitivity

Continental’s encapsulating rings, proven to eliminate seal load (bolt torque) sensitivity, are components of the ULTRX, MINTRX, and LOTRX rupture discs (handling ring for STAR X). Encapsulating rings:

- Hold the rupture disc in the proper location
- Prevent rupture disc slippage when insufficient bolt load is applied to the companion flanges
- Provide a base to accept reasonable over-torquing of the companion flange bolts while protecting the rupture disc from being damaged
- Provide a superior metal-to-metal seal surface

Specifications:

1. Quantity
2. Size
3. Type
4. Materials
5. Options ... linings
6. Actual vacuum pressure or back pressure
7. Specified pressure/specified temperature
8. Manufacturing range, see page 6

To assure selection of the correct rupture disc and holder for your application, the following information should be supplied when placing an order. To discuss more specific information regarding the applicable rupture disc for your installation, a B.D.I. Alarm System, or accessory, call, write, or fax the nearest Continental Disc direct sales office listed on the back.

Quality Assurance/Documentation:

1. Codes: ASME, DIN, EN, JIS, BSI, or others
2. Special cleaning
3. Special packaging
4. Special tagging
5. Temperature testing
6. Material test reports
7. Other

Operating Specifications:

1. Maximum allowable working pressure (vessel MAWP)
2. Operating pressure
3. Operating temperature
4. Vacuum/backpressure
5. Cycle conditions
6. Flow rate required
7. Media
8. Molecular weight/specific gravity
9. For use under a relief valve
10. Previous manufacturing number (if known)

Please supply the following when ordering:

RUPTURE DISC: Quantity: ___________ Size: _______________

Description: ULTRX, MINTRX, STAR X, or LOTRX Rupture Disc

Material: _________________________________

Inlet and Outlet Rings: 316 SS

Manufacturing Range: Zero (2)

Rated Burst Pressure: _______ psig or ______ barg at ______ °F or ______ °C

Minimum and Maximum Burst Pressure: ______ min to ______ max (psig or barg at ______ °F or ______ °C)

Burst Tolerance: ______% or Performance Tolerance: ______%

Manufacturing Number: __________________________ for previously supplied rupture discs.

Options -

1. ASME testing required:
2. Teflon Liner: Inlet
3. Protective Cover: Outlet
4. B.D.I. Alarm System
5. Other requirements:

HOLDER:

Quantity: ___________ Size: _______________

Description: ULTRX, MINTRX, STAR X, or LOTRX Holder with J-Hook, to mate with ______ class flanges

Material: Inlet ________________________ Outlet ________________________

Manufacturing Number: __________________________ for previously supplied holders.

Options -

1. Accessories:
2. Other requirements:

Notes:

1. 316 SS is standard. Specify other material when required.
2. Zero (0) manufacturing range is standard. See page 6.
3. Specify class of flange that holder is to mate with, i.e., ANSI 150 or DIN 1094, etc.
4. Gauge tap, nipple and tee, excess flow valve, pressure gauge, special facing, tantalum lining, Teflon coating.
CODE COMPLIANCE

Code Compliance

When specified, ULTRX, MINTRX, STAR X, and LOTRX Rupture Discs will be manufactured in accordance with ASME Code Sections III or VIII, ISD, DIN, EN, BSI, JIS, or other codes as required. For these applications, C.D.C. will manufacture, temperature test, and mark the rupture discs to comply with specific code requirements.

Continental Disc Corporation has been accredited and is authorized by the ASME Code to utilize the Code Symbol Stamp for product built in accordance with the requirements of the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1.

The ULTRX, MINTRX, STAR X, and LOTRX flow performance was certified by The National Board of Boiler and Pressure Vessel Inspectors. The certified flow resistance factors (Ka) and minimum net flow area values are available from Continental Disc Corporation or The National Board of Boiler and Pressure Vessel Inspectors.

Continenital Disc maintains an in-house ASME accepted flow testing laboratory to conduct flow testing for rupture discs, relief valves, and rupture disc/valve combinations (Refer to C.D.C. Bulletin no. 1-1106 for details).

B.D.I. ® (Burst Disc Indicator) Alarm System

In situations where immediate notification of pressure relief is critical, Continental’s patented B.D.I. (Burst Disc Indicator) Alarm System should be used to automatically notify system operators that a rupture disc has burst.

The heart of the B.D.I. Alarm System is the B.D.I. Alarm Strip, a closed-path electrical strip adhered to a Teflon membrane, which installs in conjunction with the rupture disc. When the rupture disc bursts, the alarm strip is severed, disrupting the electrical current supplied from a connected monitoring device. This “open-circuit” creates a signal to initiate alarms or equipment controlled by the monitoring device.

The B.D.I. Alarm Strip is computer compatible, resistant to corrosives, and operational over a wide range of temperatures.

Continental Disc also offers a full line of B.D.I. Alarm Monitors providing several beneficial features including visual and/or auditory alarm signals, as well as multi-channel modular designs.

Table V – Minimum Pressure for B.D.I.

<table>
<thead>
<tr>
<th>Rupture Disc Size</th>
<th>Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>In.</td>
<td>mm.</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>1-1/2</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td>6</td>
<td>150</td>
</tr>
</tbody>
</table>

Optimum Flow

Continental Disc’s scored, reverse acting rupture discs have patented precision controlled indentations on the surface of the rupture disc dome to initiate reversal when the specified burst pressure is achieved. These rupture discs have a semicircular score to provide a clean, consistent opening pattern. At burst, the score pattern allows the disc to fully open, folding back against the holder, resulting in an optimum flow condition.

Corrosive Protection

Reverse acting rupture discs are superior for use in a corrosive media environment. A wide range of materials and the use of thicker rupture disc materials contribute to the superior corrosive resistance. A Teflon ® liner may be used on the process side of these rupture discs for additional corrosion protection. Consult the factory for available materials.

Safety Ratio

Should your reverse acting rupture disc be damaged during installation or handling, it has been designed to provide pressure relief at or less than the rated (marked) burst pressure for LOTRX and at or less than 1.5 times the rated (marked) burst pressure for ULTRX, MINTRX, and STAR X rupture discs.

REVERSE ACTING RUPTURE DISCS
ULTRX Rupture Disc

The ULTRX Rupture Disc is a scored, reverse acting rupture disc. It is a differential pressure relief device that provides an instantaneous full-open, non-reclosing design for protecting equipment, vessels and systems from an overpressure condition.

The ULTRX Rupture Disc has Continental Disc’s patented precision controlled indentation to initiate reversal when the specified burst pressure is achieved, and a semicircular score to provide a clean, consistent opening pattern.

**Excels in Both Gaseous and Liquid Service!**

The ULTRX Rupture Disc is a unique reverse acting rupture disc. It excels in gaseous, partial gas/liquid, or all liquid systems. Full opening occurs in liquid or gaseous systems, including those systems which have an extremely low rate of pressure rise or an exceptionally small volume.

The ULTRX Rupture Disc eliminates:
- The concern of applying the wrong type of rupture disc in a plant. An ULTRX Rupture Disc can be used in any system, whether gaseous or liquid
- The need for a gas pocket between the rupture disc and liquid media

**Wide Range of Applications**

The ULTRX Rupture Disc is an ideal choice for primary and/or secondary system relief protection and provides an effective means of fugitive emission control when used to isolate a safety relief valve. Additional system protection applications include installation in transfer piping, chemical reactors, pressure vessels, storage vessels, and heat exchangers.

The ULTRX Rupture Disc is available in standard nominal sizes ranging from 1\" through 12\" (25 - 300 mm). Larger sizes are available. Consult the factory or your Continental Disc Corporation representative for more information.

---

MINTRX Rupture Disc

The MINTRX Rupture Disc has many of the same benefits as the ULTRX Rupture Disc, but is specifically designed to operate at lower burst pressures. When the patented precision controlled indentation on the rupture disc surface initiates the reversal action, full opening will occur.

The MINTRX Rupture Disc excels in low pressure gaseous or partial gas/liquid systems. Consult the factory before using the MINTRX Rupture Disc in full-liquid applications.

---

### Table IV — Weights and Dimensions for Scored, Reverse Acting Holder Assemblies

<table>
<thead>
<tr>
<th>Holder Sizes Available</th>
<th>ANSI</th>
<th>DIN</th>
<th>JIS</th>
<th>ULTRX</th>
<th>MINTRX</th>
<th>STAR X</th>
<th>LOTRX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Diameter</td>
<td>Class</td>
<td>Diameter</td>
<td>Class</td>
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<td>Class</td>
<td>Diameter</td>
<td>Class</td>
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<tr>
<td></td>
<td>Interior</td>
<td>Outside</td>
<td>Interior</td>
<td>Outside</td>
<td>Interior</td>
<td>Outside</td>
<td>Interior</td>
</tr>
<tr>
<td></td>
<td>(in.)</td>
<td>(in.)</td>
<td>(in.)</td>
<td>(in.)</td>
<td>(in.)</td>
<td>(in.)</td>
<td>(in.)</td>
</tr>
<tr>
<td>1 in. 25 mm</td>
<td>100</td>
<td>2.5/6.3</td>
<td>100</td>
<td>2.5/6.3</td>
<td>100</td>
<td>2.5/6.3</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>3.5/8.9</td>
<td>3.5/8.9</td>
<td>3.5/8.9</td>
<td>3.5/8.9</td>
<td>3.5/8.9</td>
<td>3.5/8.9</td>
<td>3.5/8.9</td>
</tr>
<tr>
<td>1 1/2 in. 40 mm</td>
<td>100</td>
<td>4.0/8.9</td>
<td>100</td>
<td>4.0/8.9</td>
<td>100</td>
<td>4.0/8.9</td>
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<td></td>
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<td>2 in. 50 mm</td>
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<td>5.0/12.7</td>
<td>100</td>
<td>5.0/12.7</td>
<td>100</td>
<td>5.0/12.7</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>6.5/15.9</td>
<td>6.5/15.9</td>
<td>6.5/15.9</td>
<td>6.5/15.9</td>
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<tr>
<td>3 in. 75 mm</td>
<td>100</td>
<td>6.5/16.0</td>
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<td>8.0/20.3</td>
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<td>8.0/20.3</td>
<td>8.0/20.3</td>
<td>8.0/20.3</td>
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<tr>
<td>4 in. 100 mm</td>
<td>100</td>
<td>8.0/20.3</td>
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<td>8.0/20.3</td>
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<tr>
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<td>9.5/23.8</td>
<td>9.5/23.8</td>
<td>9.5/23.8</td>
<td>9.5/23.8</td>
<td>9.5/23.8</td>
<td>9.5/23.8</td>
<td>9.5/23.8</td>
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<tr>
<td>6 in. 150 mm</td>
<td>100</td>
<td>10.0/25.4</td>
<td>100</td>
<td>10.0/25.4</td>
<td>100</td>
<td>10.0/25.4</td>
<td>100</td>
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<tr>
<td></td>
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<td>11.5/29.2</td>
<td>11.5/29.2</td>
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<tr>
<td>8 in. 200 mm</td>
<td>100</td>
<td>12.5/31.8</td>
<td>100</td>
<td>12.5/31.8</td>
<td>100</td>
<td>12.5/31.8</td>
<td>100</td>
</tr>
<tr>
<td></td>
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<td>14.0/36.1</td>
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<tr>
<td>10 in. 250 mm</td>
<td>100</td>
<td>15.0/39.4</td>
<td>100</td>
<td>15.0/39.4</td>
<td>100</td>
<td>15.0/39.4</td>
<td>100</td>
</tr>
<tr>
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<td>16.5/44.5</td>
<td>16.5/44.5</td>
<td>16.5/44.5</td>
<td>16.5/44.5</td>
<td>16.5/44.5</td>
<td>16.5/44.5</td>
<td>16.5/44.5</td>
</tr>
<tr>
<td>12 in. 300 mm</td>
<td>100</td>
<td>17.5/44.5</td>
<td>100</td>
<td>17.5/44.5</td>
<td>100</td>
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<tr>
<td></td>
<td>19.0/49.0</td>
<td>19.0/49.0</td>
<td>19.0/49.0</td>
<td>19.0/49.0</td>
<td>19.0/49.0</td>
<td>19.0/49.0</td>
<td>19.0/49.0</td>
</tr>
</tbody>
</table>

#### Note:
The ULTRX Rupture Disc Holder may require a spool piece between the holder outlet and the inlet of a pressure relief valve for 1\" and 12\" (25 and 300 mm) sizes. Recommended spool piece lengths 6\" for a 1\" holder, and 6\" for a 12\" holder (125 mm for 25 mm holder, 150 mm for 300 mm holder). Consult the factory for more information.
REVERSE ACTING RUPTURE DISC HOLDERS

In order to provide a leak-tight seal in all conditions and to support and orient the rupture disc properly during operation, Continental Disc Corporation offers a holder assembly specifically designed for each of our scored, reverse acting rupture disc designs. These solid metal holders are insert type, meaning they were designed to fit directly between standard ANSI, DIN, or JIS companion flanges, as well as other flat or raised-face bolted flange arrangements. A holder assembly consists of two main parts: a holder inlet with attached J-Hook, and a holder outlet. Both parts are held together during installation by two or more preassembly clips.

The holder assembly allows optimum operation of the companion rupture disc, and has been designed for simplicity, superior seating capability, and safety:

- Alignment of the rupture disc in the holder is assured through the use of non-symmetrical locating pins outside the rupture disc sealing area.
- Stainless steel tags spot-welded to the outside of the holder inlet and outlet indicate the proper flow direction, to match that shown on the 3-D flow tag attached to the rupture disc. Plus, a J-Hook is welded to the holder inlet as a standard, to mate with a customer-drilled hole in the side of the companion flange. This combination virtually assures that the rupture disc assembly cannot be inserted in the system upside down.
- A tapered, raised seat on the inlet holder provides uniform load on the rupture disc, insuring a metal-to-metal leak-tight seal between the rupture disc and holder.
- An accurate projection, located inside the holder outlet, helps eliminate fragmentation and provides an unrestricted flow after reversal occurs.

Each scored, reverse acting rupture disc design — ULTRX, MINTRX, STAR X, or LOTR X — has specific holder design requirements. The customer must install the rupture disc properly in the appropriate holder assembly for optimum operation. The permanently attached stainless steel tags and unique locating pins make proper installation safe and easy.

HOLDER SPECIFICATIONS

Weights and dimensions for these holders in ANSI, DIN, and JIS configurations are shown in Table IV. Consult the factory for holders to fit other national or international standards.

Materials: Holder assemblies are machined from standard materials including carbon steel, 316SS, Monel, and Hastelloy C. Other materials are available on request.

Options: Holder assemblies are available with options including 1/4", 3/8", or 1/2" gauge tap, nipple and tee, excess flow valve, pressure gauge, special facings, or Teflon coating. A stainless steel customer identification tag can be permanently attached to the holder at no extra charge. Holder assemblies can also be manufactured in a pretorque design, at customer request. This design allows the rupture disc and holder to be "bolted up" prior to insertion in the system piping. For additional corrosion protection, tantalum lining is available on the inlet portion of the holder. Contact the factory for more information.

STAR X Rupture Disc

The STAR X Rupture Disc is designed to provide protection at even lower burst pressures than the ULTRX or MINT RX rupture discs. It has Continental Disc’s patented non-symmetrical failure initiating indent, to precisely control disc buckling at a predetermined pressure. The STAR X Rupture Disc incorporates a handling ring to reduce torque sensitivity. It is specifically designed for low pressure applications that require operating ratio of up to 90% of the disc’s marked burst pressure.

The STAR X Rupture Disc excels in low pressure gaseous or partial gas/liquid systems. Consult the factory before using the STAR X Rupture Disc in full-liquid applications.

The STAR X Rupture Disc is available in nominal sizes ranging from 1” through 6” (25-150 mm). Larger sizes are available. Consult the factory or your Continental Disc Corporation representative for more information.

- Non-fragmenting design
- Safety ratio of at or less than 1.5 times the rated burst pressure
- Designed to withstand full vacuum for burst pressure ratings above 5 psig (0,345 barg)
- Zero manufacturing range
- Conformance to national or international codes including ASME Section III or VIII, ISO, DIN, EN, BS1, JIS, CE, ATEX, or other codes
- Encapsulating rings (holding ring for STAR X), which minimize torque sensitivity and provide a leak-tight metal-to-metal seal
- Excellent for safety relief valve isolation
- Zero operating ratio (see page 6)
- Designed to provide protection at even lower burst pressures than the ULTRX or MINT RX rupture discs

LOTR X Rupture Disc

The LOTR X Rupture Disc represents a breakthrough in rupture disc design. The LOTR X Rupture Disc provides all the benefits of Continental’s scored, reverse acting discs, with additional features that make it ideal for extremely low pressure applications. These enhancements include:

- C.D.C.’s Failure Initiating Indent, located at or near the apex of the rupture disc dome, lowers the pressure at which reversal occurs (compared to other solid metal, reverse acting rupture discs of similar size, material, or thickness)
## Specifying a Reverse Acting Rupture Disc

### Manufacturing Range

All reverse acting rupture discs are offered with a zero manufacturing range as a standard. This means that the rupture disc will be manufactured and marked with precisely the burst pressure that was requested by the customer, and that the rupture disc can be pressurized up to 90% of the rated (marked) burst pressure under normal operating conditions, for ratings of 40 psig (2.76 barg) and above. In this case, a standard burst tolerance of ±5% applies to the rated (marked) burst pressure. For pressures below 40 psig (2.76 barg), the rupture disc can be pressurized to 90% of the rated (marked) burst pressure reduced by the burst tolerance. This is in accordance with the ASME Code.

Earthern standards (ISO 4126.2) allow for different rupture disc rating methods, including:

- Specifying a burst pressure with a performance tolerance range, which includes the manufacturing range and the burst tolerance together.
- Specifying an acceptable min-max burst pressure range

For the table at right, a manufacturing range is defined as the allowable pressure range within which the rupture disc will be rated (marked), based on the customer's specified burst pressure. After the rupture disc has been manufactured, tested, and marked, the burst tolerance applies to the rated (marked) burst pressure. The maximum operating pressure is the highest differential pressure the disc should be exposed to under normal operating conditions. Pressurizing a rupture disc above the maximum operating pressure may reduce the expected operating life of the rupture disc.

### Recommended Maximum Temperatures

In general, the burst pressure of a rupture disc will decrease as operating temperatures increase. Table II states the maximum temperatures for commonly used rupture disc materials and linings.

### Table I – Rupture Disc Rating Methods (Manufacturing Range, Performance Tolerance, Min-Max)

<table>
<thead>
<tr>
<th>Specified Burst Pressure</th>
<th>Manufacturing Ranges Available</th>
<th>Burst Tolerance</th>
<th>Maximum Operating Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,0 psig (0 barg)</td>
<td>± 5% of rated</td>
<td>± 10%</td>
<td>± 15%</td>
</tr>
<tr>
<td>0,0 psig (0 barg)</td>
<td>± 10% of rated</td>
<td>± 15%</td>
<td>± 20%</td>
</tr>
<tr>
<td>0,0 psig (0 barg)</td>
<td>± 15% of rated</td>
<td>± 20%</td>
<td>± 25%</td>
</tr>
<tr>
<td>0,0 psig (0 barg)</td>
<td>± 25% of rated</td>
<td>± 25%</td>
<td>± 30%</td>
</tr>
<tr>
<td>0,0 psig (0 barg)</td>
<td>± 30% of rated</td>
<td>± 30%</td>
<td>± 35%</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Specified Burst Pressure</th>
<th>Manufacturing Ranges Available</th>
<th>Burst Tolerance</th>
<th>Maximum Operating Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,0 psig (0 barg)</td>
<td>± 5% of rated</td>
<td>± 10%</td>
<td>± 15%</td>
</tr>
<tr>
<td>0,0 psig (0 barg)</td>
<td>± 10% of rated</td>
<td>± 10%</td>
<td>± 15%</td>
</tr>
<tr>
<td>0,0 psig (0 barg)</td>
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<td>± 20%</td>
</tr>
<tr>
<td>0,0 psig (0 barg)</td>
<td>± 20% of rated</td>
<td>± 20%</td>
<td>± 25%</td>
</tr>
<tr>
<td>0,0 psig (0 barg)</td>
<td>± 25% of rated</td>
<td>± 25%</td>
<td>± 30%</td>
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</table>

<table>
<thead>
<tr>
<th>Specified Burst Pressure</th>
<th>Manufacturing Ranges Available</th>
<th>Burst Tolerance</th>
<th>Maximum Operating Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,0 psig (0 barg)</td>
<td>± 5% of rated</td>
<td>± 10%</td>
<td>± 15%</td>
</tr>
<tr>
<td>0,0 psig (0 barg)</td>
<td>± 10% of rated</td>
<td>± 10%</td>
<td>± 15%</td>
</tr>
<tr>
<td>0,0 psig (0 barg)</td>
<td>± 15% of rated</td>
<td>± 15%</td>
<td>± 20%</td>
</tr>
<tr>
<td>0,0 psig (0 barg)</td>
<td>± 20% of rated</td>
<td>± 20%</td>
<td>± 25%</td>
</tr>
<tr>
<td>0,0 psig (0 barg)</td>
<td>± 25% of rated</td>
<td>± 25%</td>
<td>± 30%</td>
</tr>
</tbody>
</table>

### Table II – Maximum Recommended Temperature Limits

<table>
<thead>
<tr>
<th>Disc Material</th>
<th>Maximum Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel/Monel</td>
<td>125°F (51°C)</td>
</tr>
<tr>
<td>316 Stainless Steel/Inconel**</td>
<td>700°F (371°C)</td>
</tr>
<tr>
<td>Tantalum</td>
<td>500°F (260°C)</td>
</tr>
<tr>
<td>Aluminum</td>
<td>350°F (177°C)</td>
</tr>
<tr>
<td>Inconel®</td>
<td>1600°F (871°C)</td>
</tr>
</tbody>
</table>

**Nickel/Monel and Tantalum are registered trademarks of the Inco family of companies.

**Inconel® is a registered trademark of Haynes International.

### Table III – Minimum / Maximum Available Burst Pressures at 72°F (22°C)

<table>
<thead>
<tr>
<th>Model</th>
<th>Size</th>
<th>Min</th>
<th>Max</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>M16</td>
<td>80mm</td>
<td>1.5</td>
<td>3.5</td>
<td>1.5</td>
<td>3.5</td>
</tr>
<tr>
<td>M20</td>
<td>50mm</td>
<td>4.5</td>
<td>9.0</td>
<td>4.5</td>
<td>9.0</td>
</tr>
<tr>
<td>M30</td>
<td>30mm</td>
<td>9.0</td>
<td>18.0</td>
<td>9.0</td>
<td>18.0</td>
</tr>
</tbody>
</table>

Note: Higher or lower pressures and sizes may be available. Consult your Continental Disc representative or the factory.

### Reverse Acting Rupture Disc Holders

LOTRX ONLY

<table>
<thead>
<tr>
<th>Model</th>
<th>Size</th>
<th>Min</th>
<th>Max</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>M16</td>
<td>80mm</td>
<td>1.5</td>
<td>3.5</td>
<td>1.5</td>
<td>3.5</td>
</tr>
<tr>
<td>M20</td>
<td>50mm</td>
<td>4.5</td>
<td>9.0</td>
<td>4.5</td>
<td>9.0</td>
</tr>
<tr>
<td>M30</td>
<td>30mm</td>
<td>9.0</td>
<td>18.0</td>
<td>9.0</td>
<td>18.0</td>
</tr>
</tbody>
</table>

Notes: Lower Burst Operating Pressures:

- Higher or lower pressures and sizes may be available. Consult your Continental Disc representative or the factory.

- For additional corrosion protection or pressure capability, other materials like tantalum or aluminum are available. Consult your Continental Disc representative or the factory.

- The following operating pressures are available:
  - 50 psig and above
  - 20 psig and above
  - 5 psig and above

- Performance of Performance
  - 2 psig and above
  - 1 psig and above

- Minimum Burst Operating
  - 0.0 psig (0 barg)
SPECIFYING A REVERSE ACTING RUPTURE DISC

Manufacturing Range

All reverse acting rupture discs are offered with a zero manufacturing range as a standard. This means that the rupture disc will be manufactured and marked with precisely the burst pressure that was requested by the customer, and that the rupture disc can be pressurized up to 90% of the marked (rated) burst pressure under normal operating conditions, for ratings of 40 psig (2.76 barg) and above. In this case, a standard burst tolerance of ±5% applies to the marked (burst) pressure. For pressures below 40 psig (2.76 barg), the rupture disc can be pressurized to 90% of the marked (rated) burst pressure reduced by the burst tolerance. This is in accordance with the ASME Code. European standards (ISO 4126.2) allow for different rupture disc rating methods, including:

- Specifying a burst pressure with a performance tolerance range, which includes the manufacturing range and the burst tolerance together.
- Specifying an accepted min-max burst pressure range

For the table at right, a manufacturing range is defined as the allowable pressure range within which the rupture disc will be rated (marked), based on the customer’s specified burst pressure. After the rupture disc has been manufactured, tested, and marked, the burst tolerance applies to the marked (rated) burst pressure. The maximum operating pressure is the highest differential pressure the disc should be exposed to under normal operating conditions. Pressurizing a rupture disc above the maximum operating pressure may reduce the expected operating life of the rupture disc.

Recommended Maximum Temperatures

In general, the burst pressure of a rupture disc will decrease as operating temperatures increase. Table II states the maximum temperatures for commonly used rupture disc materials and linings.

---

**Table I – Rupture Disc Rating Methods**

<table>
<thead>
<tr>
<th>Method</th>
<th>Specified Burst Pressure</th>
<th>Performance Tolerance</th>
<th>Minimum Operating Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min-Max Method</td>
<td>Available Max Burst Pressure</td>
<td>Standard</td>
<td>Increased</td>
</tr>
<tr>
<td>Min + 10%</td>
<td>50% of max</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Min + 20%</td>
<td>50% of max + 10%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Min + 30%</td>
<td>50% of max + 20%</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>Min + 40%</td>
<td>50% of max + 30%</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Min + 50%</td>
<td>50% of max + 40%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Min + 60%</td>
<td>50% of max + 50%</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>Min + 70%</td>
<td>50% of max + 60%</td>
<td>70%</td>
<td>70%</td>
</tr>
<tr>
<td>Min + 80%</td>
<td>50% of max + 70%</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>Min + 90%</td>
<td>50% of max + 80%</td>
<td>90%</td>
<td>90%</td>
</tr>
<tr>
<td>Min + 100%</td>
<td>50% of max + 90%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

---

**Table II – Maximum Recommended Temperature Limits**

<table>
<thead>
<tr>
<th>Material</th>
<th>Min-Max Method</th>
<th>Nickel/ Monel**</th>
<th>Inconel®</th>
<th>316 Stainless Steel</th>
<th>Hastelloy®</th>
<th>Titanium</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5”</td>
<td>1050</td>
<td>61.9</td>
<td>61.9</td>
<td>96.6</td>
<td>96.6</td>
<td>34.9</td>
</tr>
<tr>
<td>2”</td>
<td>1500</td>
<td>90.5</td>
<td>90.5</td>
<td>120.0</td>
<td>120.0</td>
<td>46.8</td>
</tr>
<tr>
<td>2.5”</td>
<td>1650</td>
<td>102.0</td>
<td>102.0</td>
<td>132.0</td>
<td>132.0</td>
<td>52.3</td>
</tr>
<tr>
<td>3”</td>
<td>2000</td>
<td>138.0</td>
<td>138.0</td>
<td>168.0</td>
<td>168.0</td>
<td>59.9</td>
</tr>
<tr>
<td>3.5”</td>
<td>2500</td>
<td>173.0</td>
<td>173.0</td>
<td>213.0</td>
<td>213.0</td>
<td>67.5</td>
</tr>
<tr>
<td>4”</td>
<td>2500</td>
<td>173.0</td>
<td>173.0</td>
<td>213.0</td>
<td>213.0</td>
<td>67.5</td>
</tr>
</tbody>
</table>

---

**Notes:**
- Higher or lower pressures and slopes may be available. Consult your Continental Disc Representative or the factory.
- Stainless steel jacketing ratings are maximum ratings only. Consult your Continental Disc Representative or the factory.
- 316 stainless steel jacketing is recommended for use with the Inconel® or Hastelloy® jacketing.
- For additional corrosion resistance or pressure capability, other materials like tantalum or aluminum are available. Consult your Continental Disc Representative or the factory.

---

**Table III – Minimum / Maximum Available Burst Pressures at 72°F (22°C)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Size</th>
<th>Min-Max Method</th>
<th>Burst Pressure Standard</th>
<th>Performance Tolerance</th>
<th>Maximum Operating Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOTRX</td>
<td>80mm</td>
<td>0.207</td>
<td>1.02</td>
<td>0.207</td>
<td>1.02</td>
</tr>
<tr>
<td></td>
<td>100mm</td>
<td>0.345</td>
<td>1.69</td>
<td>0.345</td>
<td>1.69</td>
</tr>
<tr>
<td></td>
<td>150mm</td>
<td>0.580</td>
<td>3.15</td>
<td>0.580</td>
<td>3.15</td>
</tr>
<tr>
<td></td>
<td>200mm</td>
<td>0.897</td>
<td>4.75</td>
<td>0.897</td>
<td>4.75</td>
</tr>
<tr>
<td></td>
<td>250mm</td>
<td>1.38</td>
<td>7.19</td>
<td>1.38</td>
<td>7.19</td>
</tr>
</tbody>
</table>

---

**Table IV – Minimum / Maximum Available Burst Pressures at 72°F (22°C)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Size</th>
<th>Min-Max Method</th>
<th>Burst Pressure Standard</th>
<th>Performance Tolerance</th>
<th>Maximum Operating Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOTRX</td>
<td>1.5”</td>
<td>5.0</td>
<td>27.5</td>
<td>5.0</td>
<td>27.5</td>
</tr>
<tr>
<td></td>
<td>2”</td>
<td>7.5</td>
<td>37.5</td>
<td>7.5</td>
<td>37.5</td>
</tr>
<tr>
<td></td>
<td>2.5”</td>
<td>11.0</td>
<td>55.0</td>
<td>11.0</td>
<td>55.0</td>
</tr>
<tr>
<td></td>
<td>3”</td>
<td>17.5</td>
<td>92.5</td>
<td>17.5</td>
<td>92.5</td>
</tr>
</tbody>
</table>

---

**Reverse Acting Rupture Disc Holders**

ULTRX (Min) TRX (Max) RX (Norm) LOTRX

**Table V – Maximum Minimum Burst Pressures**

<table>
<thead>
<tr>
<th>Model</th>
<th>Size</th>
<th>Min-Max Method</th>
<th>Burst Pressure Standard</th>
<th>Performance Tolerance</th>
<th>Maximum Operating Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOTRX</td>
<td>80mm</td>
<td>0.207</td>
<td>1.02</td>
<td>0.207</td>
<td>1.02</td>
</tr>
<tr>
<td></td>
<td>100mm</td>
<td>0.345</td>
<td>1.69</td>
<td>0.345</td>
<td>1.69</td>
</tr>
<tr>
<td></td>
<td>150mm</td>
<td>0.580</td>
<td>3.15</td>
<td>0.580</td>
<td>3.15</td>
</tr>
<tr>
<td></td>
<td>200mm</td>
<td>0.897</td>
<td>4.75</td>
<td>0.897</td>
<td>4.75</td>
</tr>
<tr>
<td></td>
<td>250mm</td>
<td>1.38</td>
<td>7.19</td>
<td>1.38</td>
<td>7.19</td>
</tr>
</tbody>
</table>

---

**Table VI – Maximum Minimum Burst Pressures**

<table>
<thead>
<tr>
<th>Model</th>
<th>Size</th>
<th>Min-Max Method</th>
<th>Burst Pressure Standard</th>
<th>Performance Tolerance</th>
<th>Maximum Operating Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOTRX</td>
<td>1.5”</td>
<td>5.0</td>
<td>27.5</td>
<td>5.0</td>
<td>27.5</td>
</tr>
<tr>
<td></td>
<td>2”</td>
<td>7.5</td>
<td>37.5</td>
<td>7.5</td>
<td>37.5</td>
</tr>
<tr>
<td></td>
<td>2.5”</td>
<td>11.0</td>
<td>55.0</td>
<td>11.0</td>
<td>55.0</td>
</tr>
<tr>
<td></td>
<td>3”</td>
<td>17.5</td>
<td>92.5</td>
<td>17.5</td>
<td>92.5</td>
</tr>
</tbody>
</table>
Rupture Disc Holders

In order to provide a leak-tight seal in all conditions and to support and orient the rupture disc properly during operation, Continental Disc Corporation offers a holder assembly specifically designed for each of our scored, reverse acting rupture disc designs. These solid metal holders are insert type, meaning they were designed to fit directly between standard ANSI, DIN, or JIS companion flanges, as well as other flat or raised-face bolted flange arrangements. A holder assembly consists of two main parts: a holder inlet with attached J-Hook, and a holder outlet. Both parts are held together during installation by two or more preassembly clips.

The holder assembly allows optimum operation of the companion rupture disc, and has been designed for simplicity, superior seating capability, and safety:

- Alignment of the rupture disc in the holder is assured through the use of non-symmetrical locating pins outside the rupture disc sealing area.
- Stainless steel tags spot welded to the outside of the holder inlet and outlet indicate the proper flow direction, to match that shown on the 3-D flow tag attached to the rupture disc. Plus, a J-Hook is welded to the holder inlet as a standard, to mate with a customer-drilled hole in the side of the companion flange. This combination virtually assures that the rupture disc assembly cannot be inserted in the system upside down.
- A tapered, raised seat on the inlet holder provides uniform load on the rupture disc, insuring a metal-to-metal leak-tight seal between the rupture disc and holder.
- An accurate projection, located inside the holder outlet, helps eliminate fragmentation and provides an unrestrict flow after reversal occurs.

Each scored, reverse acting rupture disc design — ULTRX, MINTRX, STAR X, or LOTRX — has specific holder design requirements. The customer must install the rupture disc properly in the appropriate holder assembly for optimum operation. The permanently attached stainless steel tags and unique locating pins make proper installation safe and easy.

Holder Specifications

Weights and dimensions for these holders in ANSI, DIN, and JIS configurations are shown in Table IV. Consult the factory for holders to fit other national or international standards.

Materials: Holder assemblies are machined from standard materials including carbon steel, 316SS, Monel, and Hastelloy C. Other materials are available on request.

Options: Holder assemblies are available with options including 1¼", 3/8", or 1/2" gauge tap, nipple and tee, excess flow valve, pressure gauge, special facings, or Teflon coating. A stainless steel customer identification tag can be permanently attached to the holder at no extra charge. Holder assemblies can also be manufactured in a pretorque design, at customer request. This design allows the rupture disc and holder to be "holed up" prior to insertion in the system piping. For additional corrosion protection, tantalum lining is available on the inlet portion of the holder. Contact the factory for more information.

The LOTRX Rupture Disc represents a breakthrough in rupture disc design. The LOTRX Rupture Disc provides all the benefits of Continental’s scored, reverse acting disc, with additional features that make it ideal for extremely low pressure applications. These enhancements include:

- C.D.C.’s Notched Outlet Ring facilitates opening of the rupture disc along the precision semicircular score at extremely low reversal pressures
- Safety ratio of 1-to-1. Should your LOTRX Rupture Disc be damaged during installation or handling, it has been designed to provide pressure relief at or below the burst pressure rating
- C.D.C.’s Backpressure Support Ring permits operation under full vacuum conditions for burst pressure ratings 5 psig (0.345 barg) and above. For lower burst pressure settings, full vacuum protection may be available based on size and material; consult the factory

The LOTRX Rupture Disc is available in nominal sizes ranging from 1" through 8” (25 - 200 mm) and is intended for low pressure gaseous or partial gas/liquid systems. Larger sizes are available. Consult the factory or your Continental Disc Corporation representative for more information.

The STAR X Rupture Disc is designed to provide protection at even lower burst pressures than the ULTRX or MINTRX rupture discs. It has Continental Disc’s patented non-symmetrical failure initiating indents, to precisely control disc buckling at a predetermined pressure. The STAR X Rupture Disc incorporates a handling ring to reduce torque sensitivity. It is specifically designed for low pressure applications that require operating ratio of up to 90% of the disc’s rated (marked) burst pressure.

The STAR X Rupture Disc excels in low pressure gaseous or partial gas/liquid systems. Consult the factory before using the STAR X Rupture Disc in full-liquid applications. The STAR X Rupture Disc is available in nominal sizes ranging from 1” through 6” (25 - 150 mm). Larger sizes are available. Consult the factory or your Continental Disc Corporation representative for more information.

• C.D.C.’s Notched Outlet Ring
• C.D.C.’s Backpressure Support Ring
• Non-fragmenting design
• Excellent for safety relief valve isolation
• Conformance to national or international codes including ASME Section III or VIII, ISO, DIN, EN, BSI, JIS, CE, ATEX, or other codes
• Permanently attached 3-dimensional flow direction tag to provide immediate visual verification of proper installation

Proven features of Continental Disc’s Scored, Reverse Acting Rupture Discs:

- Operation to 90% of burst rating (see page 6)
- Zero manufacturing range as standard
- Safety ratio of at or less than 1.5 times the rated burst pressure (1.0 for LOTRX)
- Designed to withstand full vacuum for burst pressure ratings above 5 psig (0.345 barg)
- Encapsulating rings (handling ring for STAR X), which minimize torque sensitivity and provide a leak-tight metal-to-metal seal
ULTRX Rupture Disc

The ULTRX Rupture Disc is a scored, reverse acting rupture disc. It is a differential pressure relief device that provides an instantaneous full-open, non-relocking design for protecting equipment, vessels and systems from an overpressure condition.

The ULTRX Rupture Disc has Continental Disc's patented precision controlled indentation to initiate reversal when the specified burst pressure is achieved, and a semicircular score to provide a clean, consistent opening pattern.

Excels in Both Gaseous and Liquid Service!

The ULTRX Rupture Disc is a unique reverse acting rupture disc. It excels in gaseous, partial gas/liquid, or all liquid systems. Full opening occurs in liquid or gaseous systems, including those systems which have an extremely low rate of pressure rise or an exceptionally small volume.

The ULTRX Rupture Disc eliminates:
- The concern of applying the wrong type of rupture disc in a plant. An ULTRX Rupture Disc can be used in any system, whether gaseous or liquid.
- The need for a gas pocket between the rupture disc and liquid media.

Wide Range of Applications

The ULTRX Rupture Disc is an ideal choice for primary and/or secondary system relief protection and provides an effective means of fugitive emission control when used to isolate a safety relief valve. Additional system protection applications include installation in transfer piping, chemical reactors, pressure vessels, storage vessels, and heat exchangers.

The ULTRX Rupture Disc is available in standard nominal sizes ranging from 1" through 12" (25 - 300 mm). Larger sizes are available. Consult the factory or your Continental Disc Corporation representative for more information.

MINTRX Rupture Disc

The MINTRX Rupture Disc has many of the same benefits as the ULTRX Rupture Disc, but is specifically designed to operate at lower burst pressures. When the patented precision controlled indentation on the rupture disc surface initiates the reversal action, full opening will occur.

The MINTRX Rupture Disc excels in low pressure gaseous or partial gas/liquid systems. Consult the factory before using the MINTRX Rupture Disc in full-liquid applications.

Table IV — Weights and Dimensions for Scored, Reverse Acting Holder Assemblies

<table>
<thead>
<tr>
<th>ULTRX Rupture Disc Holder Assemblies</th>
<th>Weight (lb/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 in. 25 mm</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>300/600</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>400/800</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>500/1000</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>600/1200</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>700/1400</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>800/1600</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>900/1800</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>1000/2000</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>1100/2200</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>1200/2400</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>1300/2600</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>1400/2800</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>1500/3000</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>1600/3200</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>1700/3400</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>1800/3600</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>1900/3800</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>2000/4000</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>2100/4200</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>2200/4400</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>2300/4600</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>2400/4800</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>2500/5000</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>2600/5200</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>2700/5400</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>2800/5600</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>2900/5800</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>3000/6000</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>3100/6200</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>3200/6400</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>3300/6600</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>3400/6800</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>3500/7000</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>3600/7200</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>3700/7400</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>3800/7600</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>3900/7800</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>4000/8000</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>4100/8200</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>4200/8400</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>4300/8600</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>4400/8800</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>4500/9000</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>4600/9200</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>4700/9400</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>4800/9600</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>4900/9800</td>
<td>1.82/0.82</td>
</tr>
<tr>
<td>5000/10000</td>
<td>1.82/0.82</td>
</tr>
</tbody>
</table>

Note: The ULTRX Rupture Disc Holder may require a spool piece between the holder outlet and the inlet of a pressure relief valve for 12" and 14" (300 and 360 mm) sizes. Recommended spool piece height is 5" for a 10" holder, and 6" for a 12" holder (250 mm for 250 mm holder, 300 mm for 300 mm holder). Consult the factory for more information.
When specified, ULTRX, MINT RX, STAR X, and LOT RX Rupture Discs will be manufactured in accordance with ASME Code Sections III or VIII, ISO, DIN, EN, BSI, JIS, or other codes as required. For these applications, C.D.C. will manufacture, temperature test, and mark the rupture discs to comply with specific code requirements.

Continental Disc Corporation has been accredited and is authorized by the ASME Code to utilize the Code Symbol Stamp for product built in accordance with the requirements of the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1.

The ULTRX, MINT RX, STAR X, and LOT RX flow performance was certified by The National Board of Boiler and Pressure Vessel Inspectors. The certified flow resistance factors ($K_R$) and minimum net flow area values are available from Continental Disc Corporation or The National Board of Boiler and Pressure Vessel Inspectors. Continental Disc maintains an in-house ASME accepted flow testing laboratory to conduct flow testing for rupture discs, relief valves, and rupture disc/valve combinations (Refer to C.D.C. Bulletin no. 1-1106 for details).

In situations where immediate notification of pressure relief is critical, Continental’s patented B.D.I. (Burst Disc Indicator) Alarm System should be used to automatically notify system operators that a rupture disc has burst.

The heart of the B.D.I. Alarm System is the B.D.I. Alarm Strip, a closed-path electrical strip adhered to a Teflon membrane, which installs in conjunction with the rupture disc. When the rupture disc bursts, the alarm strip is severed, disrupting the electrical current supplied from a connected monitoring device. This “open-circuit” creates a signal to initiate alarms or equipment controlled by the monitoring device.

The B.D.I. Alarm Strip is computer compatible, resistant to corrosives, and operational over a wide range of temperatures.

Continental Disc also offers a full line of B.D.I. Alarm Monitors providing several beneficial features including visual and/or auditory alarm signals, as well as multi-channel modular designs.

**TABLE V – Minimum Pressure for B.D.I.**

<table>
<thead>
<tr>
<th>Rupture Disc Size</th>
<th>Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/2</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>50</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td>6</td>
<td>150</td>
</tr>
</tbody>
</table>

Intrinsically safe designs are also available (Refer to C.D.C. Bulletin no. 5-7701-5 for details).

The B.D.I. Alarm System should not be used with devices with minimum pressure ratings below those shown in Table V. Consult the factory for these applications.

**CODE COMPLIANCE**

**Optimum Flow**

Continental Disc’s scored, reverse acting rupture discs have patented precision controlled indentations on the surface of the rupture disc dome to initiate reversal when the specified burst pressure is achieved. These rupture discs have a semicircular score to provide a clean, consistent opening pattern. At burst, the score pattern allows the disc to fully open, folding back against the holder, resulting in an optimum flow condition.

**Corrosive Protection**

Reverse acting rupture discs are superior for use in a corrosive media environment. A wide range of materials and the use of thicker rupture disc materials contribute to the superior corrosive resistance. A Teflon™ liner may be used on the process side of these rupture discs for additional corrosion protection. Consult the factory for available materials.

**Safety Ratio**

Should your reverse acting rupture disc be damaged during installation or handling, it has been designed to provide pressure relief at or less than the rated (marked) burst pressure for LOTRX and at or less than 1.5 times the rated (marked) burst pressure for ULTRX, MINTRX, and STAR X rupture discs.

**Table V – Minimum Pressure for B.D.I.**

<table>
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<tr>
<td>6</td>
<td>150</td>
</tr>
</tbody>
</table>

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

**Code Compliance**

When specified, ULTRX, MINT RX, STAR X, and LOT RX Rupture Discs will be manufactured in accordance with ASME Code Sections III or VIII, ISO, DIN, EN, BSI, JIS, or other codes as required. For these applications, C.D.C. will manufacture, temperature test, and mark the rupture discs to comply with specific code requirements.

Continental Disc Corporation has been accredited and is authorized by the ASME Code to utilize the Code Symbol Stamp for product built in accordance with the requirements of the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1.

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Continental Disc Corporation or The National Board of Boiler and Pressure Vessel Inspectors will manufacture, temperature test, and mark the rupture discs to comply with specific code requirements.

**Reverse Acting Rupture Discs**

**Optimum Flow**

Continental Disc’s scored, reverse acting rupture discs have patented precision controlled indentations on the surface of the rupture disc dome to initiate reversal when the specified burst pressure is achieved. These rupture discs have a semicircular score to provide a clean, consistent opening pattern. At burst, the score pattern allows the disc to fully open, folding back against the holder, resulting in an optimum flow condition.

**Corrosive Protection**

Reverse acting rupture discs are superior for use in a corrosive media environment. A wide range of materials and the use of thicker rupture disc materials contribute to the superior corrosive resistance. A Teflon™ liner may be used on the process side of these rupture discs for additional corrosion protection. Consult the factory for available materials.

**Safety Ratio**

Should your reverse acting rupture disc be damaged during installation or handling, it has been designed to provide pressure relief at or less than the rated (marked) burst pressure for LOTRX and at or less than 1.5 times the rated (marked) burst pressure for ULTRX, MINTRX, and STAR X rupture discs.
### REVERSE ACTING RUPTURE DISCS

#### Rupture Discs for Overpressure Protection

Established in 1965, Continental Disc Corporation manufactures rupture discs as per our customers' specifications to help protect vessels, equipment, and systems from damaging overpressure conditions. Continental is a leading manufacturer of rupture disc devices for a variety of process industries, including chemical, pharmaceutical, and petrochemical markets worldwide.

Continental Disc is committed to supplying the services you expect, including:
- Technical assistance, training, and support
- Fast, detailed, easily understood quotations
- Providing the product to your specifications
- Shipping schedules that are unmatched in the industry

Continental Disc offers an emergency service program to meet your needs. Twenty-four hour emergency service is available 365 days a year. With a worldwide representative network backed by an in-house Tech Team, C.D.C. can assist in determining the best and most economical rupture disc for your specific needs.

#### Scored, Reverse Acting Rupture Discs

Scored, Reverse Acting Rupture Discs

- Continental Disc's solid metal, scored, reverse acting rupture discs are differential pressure relief devices that provide an instantaneous fully-open, non-reclosing design for protecting vessels, equipment, and systems from an overpressure condition. The ULTRX®, MINTRX®, STAR X®, and LOTRX® rupture discs offer a wide range of pressures and reliable features, including:
  - A ZERO MANUFACTURING RANGE as a standard
  - Recommended maximum operating pressure of 90% of the rated (marked) burst pressure. See page 6
  - Solid metal design in a variety of available materials for corrosion resistance
  - Encapsulating rings, which minimize torque sensitivity and provide a leak-tight metal-to-metal seal (handling ring for STAR X Rupture Disc)
  - Permanently attached 3-dimensional flow direction tag, alignment pins, and J-Hook for proper rupture disc and holder orientation

#### Seal Load Sensitivity

Continental Disc's encapsulating rings, proven to eliminate seal load (bolt torque) sensitivity, are components of the ULTRX, MINTRX, and LOTRX rupture discs (handling ring for STAR X). Encapsulating rings:
- Hold the rupture disc in the proper location
- Prevent rupture disc slippage when insufficient bolt load is applied to the companion flanges
- Provide a base to accept reasonable over-torquing of the companion flange bolts while protecting the rupture disc from being damaged
- Provide a superior metal-to-metal seal surface

### Ordering

To assure selection of the correct rupture disc and holder for your application, the following information should be supplied when placing an order. To discuss more specific information regarding the applicable rupture disc for your installation, a B.D.I. Alarm System, or accessory, call, write, or fax the nearest Continental Disc direct sales office listed on the back.

#### Specifications:

1. Quantity
2. Size
3. Type
4. Materials
5. Options (if needed)
6. Actual vacuum pressure or back pressure
7. Specified pressure/specified temperature
8. Manufacturing range, see page 6

#### Quality Assurance/Documentation:

1. Codes: ASME, DIN, EN, JIS, BSI, or others
2. Special cleaning
3. Special packaging
4. Special tagging
5. Temperature testing
6. Material test reports
7. Other

#### Please supply the following when ordering:

**RUPTURE DISC:**
- Quantity: ______ Size: ______
- Description: ULTRX, MINTRX, STAR X, or LOTRX Rupture Disc
- Material: ______
  - Inlet and Outlet Rings: 316 SS (1) Manufacturing Range: Zero (2)
  - Rated Burst Pressure: ______ psig or ______ barg at ______ °F or ______ °C
  - Burst Tolerance: ______ or Performance Tolerance: ______
- Manufacturing Number: ______ for previously supplied rupture discs.

**Options:**
- ASME testing required:
- Teflon Liner: Inlet
- Protective Cover: Outlet
- B.D.I. Alarm System
- Other requirements:

**HOLDER:**
- Quantity: ______ Size: ______
- Description: ULTRX, MINTRX, STAR X, or LOTRX Holder with J-Hook, to mate with ______ class flanges
- Material: Inlet ______
  - Manufacturing Number: ______ for previously supplied holders.

**Options:**
- Accessories: ______
- Other requirements:
Continental Disc Corporation has representatives located throughout the world. Contact the Continental Disc Corporation office nearest you for the authorized representative in your area.

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