



**Continental Disc Corporation**

Performance Under Pressure®

# HEAT SHIELDS

7-7704-7

## USE OF HEAT SHIELDS FOR TEMPERATURE REDUCTION

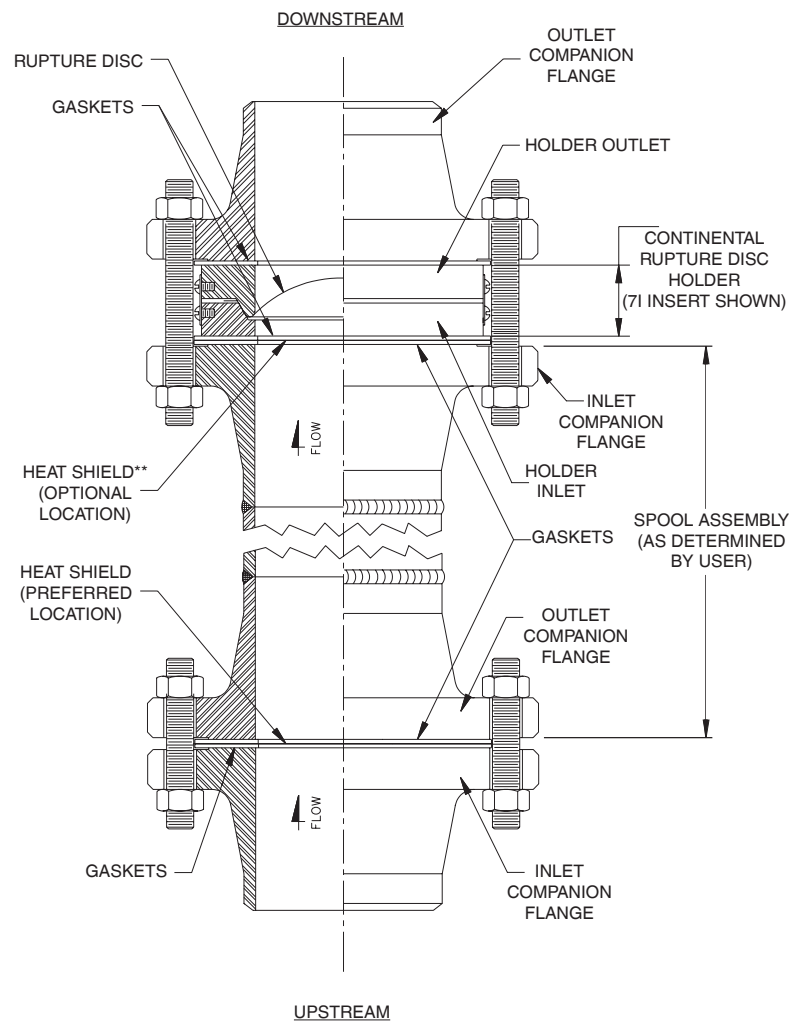
Heat Shields are typically used to reduce the process temperature to which a rupture disc is exposed. This may be necessary when the rupture disc is manufactured from materials which are not capable of withstanding high process temperatures. Heat Shields are used where Teflon®\* or other exotic material liners are required for corrosion resistance or as part of the rupture disc itself in combination with high process temperature.

The C.D.C. Heat Shield is constructed as a flat metal component for direct installation between bolted pipe flanges upstream of the rupture disc. It is slotted to allow the transmission of pressure to the rupture disc and to provide full opening upon bursting of the rupture disc. It functions as a barrier restricting the continuous flow of high-temperature gases or vapors. This allows the piping between the Heat Shield and rupture disc to act as a heat sink to the dead space and effectively reduce the temperature to which the rupture disc is exposed.

There are many factors which must be considered in evaluating the required length of the spool assembly to achieve an adequate heat sink. Therefore, no single rule can be suitable for all of the possible applications. The actual temperature drop is best determined by the end user taking into consideration the following design parameters.

- Maximum (rated) temperature of the rupture disc.
- The maximum expected temperature exposed to the exterior of the assembly. (Note that the rupture disc and spool assembly can not be insulated.)
- Attachment of other exterior cooling devices.
- Process media.

- Total surface area of the spool assembly and rupture disc.
- The transmission of heat to rupture disc by radiation, conduction, and convection.



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

\*\*For reverse-buckling type rupture discs, a bare metal Heat Shield should not be located directly under the holder inlet without additional thermal insulation. Contact factory.

Heat Shields are available in the sizes and mating flange classes listed below.

**Table I. Sizes and Flange Ratings for C.D.C. Heat Shields**

| SIZE<br>(INCHES)<br>(MM) | ASME<br>CLASS | DIN<br>CLASS | JIS<br>CLASS | SIZE<br>(INCHES)<br>(MM) | ASME<br>CLASS | DIN<br>CLASS | JIS<br>CLASS |
|--------------------------|---------------|--------------|--------------|--------------------------|---------------|--------------|--------------|
| 1                        | 150           | 10/40        | 10/20        | 14                       | 150           | 10           | 5            |
| 25                       | 300/600       | —            | 30/40        | 350                      | 300           | 16/25        | 10/20        |
| 1.5                      | 150           | 10/40        | 10/20        | 16                       | 150           | 10           | 5            |
| 40                       | 300/600       | —            | 30/40        | 400                      | 300           | 16/25        | 10/30        |
| 2                        | 150           | 10/40        | 10/40        | 18                       | 150           | —            | 5            |
| 50                       | 300/600       | 64           | 64           | 450                      | 300           | —            | 10           |
| 3                        | 150           | 10/40        | 10/20        | 20                       | 150           | 10           | 5            |
| 80                       | 300/600       | 64           | 30/40        | 500                      | 300           | 16/25        | 10/20        |
| 4                        | 150           | 10/16        | 10/20        | 24                       | 150           | 6/10         | 5/10         |
| 100                      | 300           | 25/40        | 30/40        | 600                      | 300           | 10/25        | 16/20        |
| 6                        | 150           | 10/16        | 10           | 30                       | 150           | —            | 5            |
| 150                      | 300           | 25/40        | 16/20        | 750                      | —             | —            | 10           |
| 8                        | 150           | 10/16        | 10           | 32                       | 150           | —            | 5            |
| 200                      | 300           | 25           | 16/30        | 800                      | —             | —            | 10           |
| 10                       | 150           | 10/16        | 10           | 36                       | 150           | —            | 5            |
| 250                      | 300           | 25           | 16/30        | 900                      | —             | —            | 10           |
| 12                       | 150           | 10           | 5            |                          |               |              |              |
| 300                      | 300           | 16/25        | 10/20        |                          |               |              |              |

For additional sizes and mating flange classes not shown, consult your Continental Disc representative or the factory.

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

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