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## MDC's Burst Disk Installation & Operating Manual

### OVERVIEW

Thank you for your recent purchase of an MDC Burst Disk. MDC's BDA-series burst disks are UHV compatible, feature all metal construction and are ASME UD-certified. These disks are designed as a safety device to protect against the accidental over-pressurization of a vacuum system. When installed on a chamber, a burst disk acts to relieve an unexpected build-up of pressure, exhausting it safely, avoiding the potential for personal injury at the same time protecting sensitive equipment from damage.

### BURST PRESSURE

MDC Burst Disks are design for relief in the range of 9-11.5 PSIG @ 72°F (22.2°). Since the Burst Disk is a system safety device it is important to remember that system temperature will affect the pressure range of the Disk (see temperature information below)

### SELECTION

Burst disks are available on either 1.33 or 2.75 OD Del Seal flanges (other configurations available on request please consult factory). Calculated flow rates are given for both flange sizes below. Caution should be taken to insure the pressure intake potential into the system can not exceed the exhaust potential through the Disk. The use of multiple Disks may be required to avoid this.

#### Calculated Flow

- 1.33 Flange mounted - 107 SCFM
- 2.75 Flange mounted – 435 SCFM

### TEMPERATURE

MDC's Burst Disks are rated for bakeout up to 450°C. They can also perform in low temperature applications down to -196°C. It is important to remember that temperature will have an effect on burst pressure. At -196°C the burst pressure is estimated at 175% of the rated pressure at 72°F (22.2°). The temperature factor estimate at 450°C is about 70%. Long term (more than 30 minutes) exposure to any temperature greater than 150°C could increase the burst pressure by about 10%. Repeated temperature cycling will fatigue the membrane and eventually lead to failure of the disk. MDC recommends factoring this information into your periodic maintenance schedule.

### INSTALLATION

While Burst Disks have no specified orientation the preferred mounting location is on the lower portion of the chamber away from sharp or falling objects and other equipment that could puncture the Disk's thin membrane. Following the flange installation guide <http://www.mdcvacuum.com/searchs/doc/del-seal-Instal.htm> will help insure correct connection to your system. Select a location that will not obstruct the Disk opening. Make sure there is adequate space to allow for visual inspection of the membrane.

### INSPECTION & PERIODIC MAINTENANCE

It is recommended that Burst Disks are inspected on a routine basis, approximately every 3-months. In the event of a pressure spike the Disk should be inspected immediately. Because the Burst Disk's membrane is made from a very thin stainless steel material it is subject to wear and fatigue over time.

It is recommended that you develop and follow a maintenance program that best fits your application. In clean vacuum environments MDC recommends replacing a Disk every 36-months. In systems where corrosive gases are used or where temperature and pressure fluctuations occur, annual replacement may be required.

 **Caution-Upon inspection, any Disk that shows signs of deformation of the membrane area should be replaced immediately.**

### SERIALIZATION & IDENTIFICATION TAG

Each Burst Disk is supplied with an Identification Tag (pictured) that allows for traceability of the Disk to its original LOT of manufacture. It is recommended that the TAG be safety wired or otherwise affixed to the Disk. If this is not possible kept near the disk to it can be easily identified.

