



**Continental Disc®  
Corporation**

## Preparation and Installation of the Sanitary Burst Disc Indicator (B.D.I.®) Alarm System

### WARNING

USER SHOULD READ AND THOROUGHLY UNDERSTAND THESE INSTRUCTIONS BEFORE INSTALLING RUPTURE DISC. THESE INSTRUCTIONS DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY FACTORS ASSOCIATED WITH THE RUPTURE DISC'S USE IN SERVICE. IT IS THE RESPONSIBILITY OF THE USER TO ESTABLISH APPROPRIATE SAFETY, HEALTH, AND TRAINING MEASURES FOR THEIR PERSONNEL INSTALLING, SERVICING, OR WORKING IN AN AREA WHERE RUPTURE DISC ASSEMBLIES ARE IN USE. SERVICE AND/OR MAINTENANCE ON OR AROUND THE RUPTURE DISC DEVICE MUST NOT BE PERFORMED WHILE THE DEVICE IS SUBJECTED TO OPERATING PRESSURES AND/OR TEMPERATURES.

IT IS THE USER'S SOLE RESPONSIBILITY FOR DESIGN AND PLACEMENT OF RUPTURE DISCS WITHIN THEIR FACILITY AND UPON THE EQUIPMENT UPON WHICH THE RUPTURE DISC OF USER'S SELECTION IS TO BE LOCATED. IT IS USER'S SOLE RESPONSIBILITY FOR THE DESIGN OF ADEQUATE VENTING AND INSTALLATION OF ADEQUATE VENT PIPING OR DIRECTIONAL FLOW AFTER RUPTURE OCCURS WITH THE RUPTURE DISC AS INTENDED. WHEN SIZE IS SPECIFIED, CONTINENTAL DISC CORPORATION ASSUMES THAT ADEQUATE PROVISIONS HAVE BEEN MADE BY PURCHASER FOR PROPER VENTING OF A SYSTEM TO RELIEVE THE SPECIFIC PRESSURE. LOCATE RUPTURE DISC WHERE PEOPLE OR PROPERTY WILL NOT BE EXPOSED TO THE SYSTEM DISCHARGE IN CASE OF RUPTURE. VENT TOXIC OR FLAMMABLE FUMES OR LIQUIDS TO A SAFE LOCATION TO PREVENT PERSONAL INJURY OR PROPERTY DAMAGE.

IT IS THE USER'S SOLE RESPONSIBILITY TO SPECIFY THE BURST PRESSURE RATING OF A RUPTURE DISC AT A COINCIDENT TEMPERATURE AT WHICH THE RUPTURE DISC IS TO BE USED. A RUPTURE DISC IS A TEMPERATURE SENSITIVE DEVICE. THE BURST PRESSURE OF THE RUPTURE DISC IS DIRECTLY AFFECTED BY ITS EXPOSURE TO THE COINCIDENT TEMPERATURE. GENERALLY, AS THE TEMPERATURE AT THE RUPTURE DISC INCREASES, THE BURST PRESSURE DECREASES; INVERSELY, AS THE TEMPERATURE AT THE RUPTURE DISC DECREASES, THE BURST PRESSURE MAY INCREASE. FAILURE TO PROPERLY UTILIZE A RUPTURE DISC AT THE SPECIFIED COINCIDENT TEMPERATURE COULD CAUSE PREMATURE FAILURE OR OVERPRESSURIZATION OF A SYSTEM.

THE INSTANTANEOUS RELEASE OF PRESSURE FROM THE RUPTURE DISC CAN CREATE VIOLENT NOISES DUE TO THE DISCHARGE AT SONIC VELOCITY. IT IS THE USER'S SOLE RESPONSIBILITY TO PROTECT AGAINST HEARING DAMAGE TO ANY BYSTANDERS.

RUPTURE DISCS AND TAGS ARE MADE OF METAL FOILS OF VARYING THICKNESS. THE METAL EDGES MAY BE SHARP. PERSONNEL INSTALLING OR EXAMINING THE RUPTURE DISCS SHOULD PROTECT AGAINST CUTS OR INJURY WHEN HANDLING THE RUPTURE DISC. DO NOT LIFT A RUPTURE DISC BY ITS ATTACHED TAG.

PARTICLES MAY BE DISCHARGED WHEN THE RUPTURE DISC RUPTURES. THESE PARTICLES MAY BE PART OF THE RUPTURE DISC ITSELF, OR OTHER ENVIRONMENTAL MATTER IN THE SYSTEM. IT IS THE USER'S SOLE RESPONSIBILITY TO ASSURE THAT THESE PARTICLES ARE DIRECTED TO A SAFE AREA TO PREVENT PERSONAL INJURY OR PROPERTY DAMAGE.

THERE IS NO GUARANTEE OF RUPTURE DISC LIFE. SUCH LIFE SPAN IS AFFECTED BY CORROSION, CREEP AND FATIGUE, AND PHYSICAL DAMAGE. THESE CONDITIONS WILL DERATE THE RUPTURE DISC TO A LOWER SET PRESSURE. THE CUSTOMER AND/OR USER SHOULD BE PREPARED TO HANDLE PREMATURE FAILURE OF THE RUPTURE DISC. THE MEDIA OR OTHER ENVIRONMENTAL CONDITIONS SHOULD NOT ALLOW ANY BUILDUP OR SOLIDIFICATION OF MEDIA TO OCCUR ON A RUPTURE DISC. THIS MAY INCREASE THE PRESSURE SETTING OF THE RUPTURE DISC.

CUSTOMER AND/OR ITS INSTALLER SHALL BE SOLELY RESPONSIBLE FOR THE PROPER INSTALLATION OF SELLER'S HOLDERS AND RUPTURE DISCS INTO A SYSTEM. CUSTOMER AND/OR ITS INSTALLER SHALL BE SOLELY RESPONSIBLE FOR IMPROPER INSTALLATION AND PHYSICAL DAMAGE RESULTING THEREFROM, INCLUDING BUT NOT LIMITED TO, DAMAGE RESULTING FROM LEAKAGE, IMPROPER TORQUING OR SEATING OF A RUPTURE DISC OR FAILURE TO FOLLOW INSTALLATION INSTRUCTIONS WHERE PROVIDED.

RUPTURE DISCS ARE PRECISION SAFETY DEVICES AND MUST BE INSTALLED PROPERLY. RUPTURE DISCS MUST BE INSTALLED BY TRAINED, KNOWLEDGEABLE INSTALLERS AND ONLY WITHIN ENVIRONMENTS SUITABLE AND APPROPRIATE FOR A RUPTURE DISC. CARE MUST BE USED IN A FACILITY'S DESIGN TO PROTECT BOTH THE RUPTURE DISC FROM INADVERTENT DAMAGE WHICH COULD CAUSE ITS PREMATURE RELEASE AND TO PROTECT INDIVIDUALS EXPOSED TO HAZARDS CREATED BY SUCH SUDDEN RELEASE.

PROPER INSTALLATION OF A RUPTURE DISC IS CRITICAL TO PERFORMANCE AND TO SAFETY. FAILURE TO PROVIDE PROPER SEATING OF A RUPTURE DISC MAY AFFECT RUPTURE DISC PERFORMANCE, BURST PRESSURE ACCURACY AND MAY RESULT IN ITS PREMATURE FAILURE.

## I. Safety Precautions Before Installation

THE SANITARY B.D.I. ALARM SYSTEM IS AN ELECTRICAL SENSOR. EVERY EFFORT SHOULD BE MADE TO NOT FOLD, WRINKLE, TWIST, OR DO ANYTHING TO THE CIRCUIT STRIP THAT MIGHT CREATE A PREMATURE OPEN CIRCUIT.

1. See rupture disc tag to verify set pressure, operating temperature, and all other operating parameters.

## II. Preparation of the Sanitary Fittings for Sanitary Burst Disc Indicator Installation

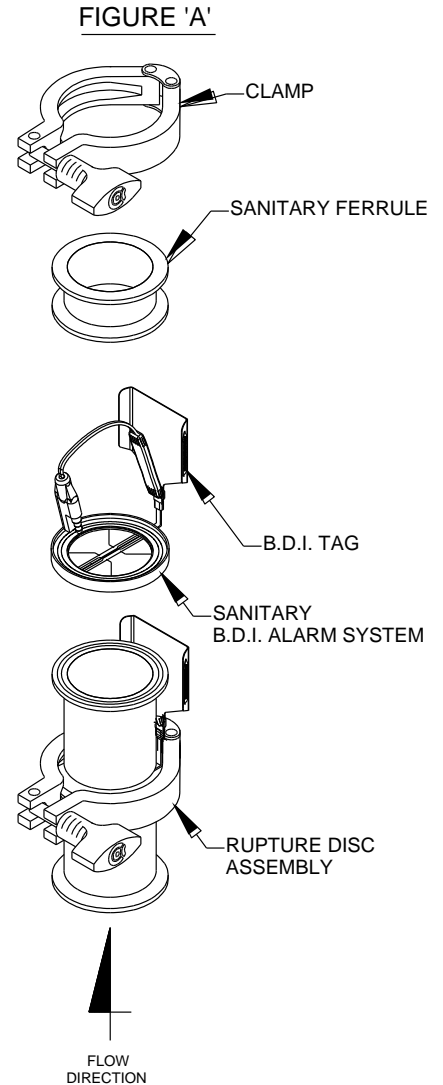
Clean all foreign material from the Sanitary Burst Disc Indicator sealing area of both the Sanitary Fitting inlet and outlet.

## III. Installation of the Sanitary Burst Disc Indicator (B.D.I.®) Alarm System (See Figure A)

1. Visually inspect the adhesion of the strip to the membrane and the electrical circuit of the Sanitary B.D.I. Alarm System. If the strip has become detached or the circuit has been broken, **DO NOT INSTALL THE SANITARY B.D.I. ALARM SYSTEM.** Ensure that the strip extends straight and flat.
2. Install the Sanitary B.D.I. Alarm System, with the flow arrows pointing in the proper flow direction. Secure the Sanitary B.D.I. Alarm System with the appropriate size sanitary fitting clamp. The hinged portion of the clamp must be positioned adjacent to the B.D.I. tag.
3. Torque the clamp to 25 In•Lbs / (2.8 N•m) using a 1-5/16" hex socket.
4. Plug the B.D.I. connector into the lead wire connector using a slight twisting action.

## IV. Preventative Maintenance

1. Risk assessment and an annual rupture disc replacement are recommended. When replacing the rupture disc, it is recommended that the Sanitary (IS) B.D.I. Alarm System be replaced as well. Rupture disc service life is determined by system operating conditions. The effects of severe pressure/vacuum cycles, corrosion, temperature variations, or other adverse conditions must be evaluated by the user through actual service experience to determine optimal service life.
2. **IF THE RUPTURE DISC AND SANITARY (IS) B.D.I. ALARM SYSTEM ARE NOT REPLACED PERIODICALLY WHEN EXPOSED TO THESE CONDITIONS, PREMATURE FAILURE OF THE RUPTURE DISC OR SANITARY B.D.I. ALARM SYSTEM MAY OCCUR, THEREBY DISCHARGING THE PROCESS MEDIA.**
3. To avoid extended downtime, maintain three spare rupture discs and Sanitary B.D.I. Alarm Systems in stock at all times for each holder in use. The number of spares required ultimately will be determined by service conditions.



## V. Customer Service

If you wish to discuss your application, installation, or maintenance, please contact the Customer Service Department at our headquarters location.

### B.D.I. ALARM SYSTEM OPERATING LIMITS


TEMPERATURE:            -40° F to + 400° F  
                                  (-40° C to + 204° C)

MAX CURRENT:            50 Milli Amps  
MAX VOLTAGE:            24 VDC

FULFILLS THE REQUIREMENTS OF DIRECTIVE 2014/34/EU (ATEX) FOR: Equipment or protective system intended for use in potentially explosive atmospheres.

Conformity assessment performed by Notified Body no. 0359,  
Intertek Testing and Certification Limited, Leatherhead, Surrey, UK.

BURST DISC INDICATOR (B.D.I.®): Sizes 25mm through 900mm (1 inch through 36 inches)

Marked:  II 1 G Ex ia IIC Tx Ga  
                                  II 1 D Ex ia IIIC Tx Da  
                                  I M1 Ex ia I Ma  
                                  (Tamb = -40°C ≤ Ta ≤ +204°C)

EC Type Examination Certificate: ITS13ATEX27734X

THE MAXIMUM INTRINSICALLY SAFE INPUT PARAMETERS ARE AS FOLLOWS:

Ui = 24V dc  
li = 50 mA  
Pi = 0.3W

THE EQUIVALENT PARAMETERS ARE:

Ci = 0  
Li = 0

SPECIAL CONDITIONS FOR SAFE USE:

1. Temperature Class of the BDI sensor is marked as Tx, since the surface temperature is controlled by the process temperature being monitored. The sensor itself exhibits negligible temperature rise.
2. When located in an area requiring EPL Ga / Category 1G (e.g. Zone 0) hazardous area, the user shall ensure that electrostatic charging of the non-metallic parts cannot occur.
3. When provided with terminations by means of flying leads, these shall be terminated in an appropriately protected terminal box.
4. When installed, the BDI strip shall be provided with an IP rating of IP20 as a minimum.
5. For Group I applications, the BDI strip and terminations shall be protected to IP54 or better.



**Continental Disc®  
Corporation**

*Performance Under Pressure®*

**HEADQUARTERS //**  
3160 W. Heartland Drive  
Liberty, MO 64068 USA  
Ph (816) 792-1500  
Fax (816) 792-2277  
sales@contdisc.com  
contdisc.com