



**Continental Disc[®]
Corporation**

Preparation and Installation of the Universal Burst Disc Indicator (B.D.I.[®]) Assembly

WARNING

USER SHOULD READ AND THOROUGHLY UNDERSTAND THESE INSTRUCTIONS BEFORE INSTALLING THE RUPTURE DISC AND UNIVERSAL BURST DISC INDICATOR (B.D.I.). 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 UNIVERSAL B.D.I. ASSEMBLY IS AN ELECTRICAL SENSOR. EVERY EFFORT SHOULD BE MADE NOT TO FOLD, WRINKLE, TWIST, OR DO ANYTHING TO THE CIRCUIT STRIP THAT MIGHT CREATE A PREMATURE OPEN CIRCUIT.

II. Preparation of Rupture Disc Holder Outlet and Outlet Companion Flange for Installation

Clean all foreign material from the contact surface faces of both the rupture disc holder outlet and the outlet companion flange. These surfaces must be completely clean and free of all rust, corrosion, and foreign material to ensure a proper seal. Use of solvents, steel wool, or fine emery cloth is permissible. Do not re-machine. Do not use scraper or abrasives.

III. Installation of the Universal B.D.I. Assembly into the System (See Figure A)

1. Minimum pressure based on full area relief devices of the same nominal pipe size.

Size Inches / (mm)	Pressure psig / (barg)
1 / (25)	15 / (1.03)
1-1/2 / (40)	10 / (0.69)
2 / (50)	4 / (0.28)
3 / (80)	2.5 / (0.17)
4 / (100)	2.5 / (0.17)
6 & up / (150 & up)	1 / (0.07)

NOTE: DO NOT INSTALL THE UNIVERSAL B.D.I. ON DEVICES WITH MINIMUM PRESSURE RATINGS BELOW THOSE LISTED ABOVE.

2. Assemble rupture disc and rupture disc holder as a unit per the applicable rupture disc installation instruction.

NOTE: The B.D.I. Assembly is typically supplied with a connector; however, an optional design without a connector may be supplied upon request.

3. Visually inspect the adhesion of the strip to the Teflon[®] membrane and the electrical circuit of the UNIVERSAL B.D.I. Assembly. If the strip has become detached or the circuit has been broken, **DO NOT INSTALL THE UNIVERSAL B.D.I. ASSEMBLY.** Ensure that the strip extends straight and flat.
 4. Place the UNIVERSAL B.D.I. Assembly with the side stamped "DOWNSTREAM SIDE" facing up (downstream) on top of the rupture disc holder outlet. Use care in keeping the B.D.I. Assembly and the holder outlet concentrically aligned.
- NOTE: Depending on specific rupture disc holder design / dimensions, the dome of the rupture disc may protrude beyond the holder outlet, contacting the B.D.I. There must be sufficient slack in the B.D.I. assembly when placed on the rupture disc and holder outlet so the membrane is not tight against the rupture disc dome. If this occurs, it could affect the performance of the rupture disc or cause premature failure of the B.D.I. Contact Continental Disc Corporation for assistance.

5. Place the entire unit into piping.
6. Lower the outlet companion flange carefully onto the UNIVERSAL B.D.I. Assembly.
7. Slip the strain relief device over one companion flange stud as shown (see Figure B). Locate the strain relief device near where the UNIVERSAL B.D.I. Assembly exits. Allowing sufficient slack to allow for easy connection to the B.D.I. Assembly, secure the lead wire to the strain relief device by fastening the twist lock on the clip.
8. Install remaining studs and nuts in accordance with the installation instruction provided with the rupture disc.
9. Plug the B.D.I. connector into the lead wire connector using a slight twisting action.
NOTE: A lead wire is a component of the B.D.I. monitoring device.

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

Figure 'A'

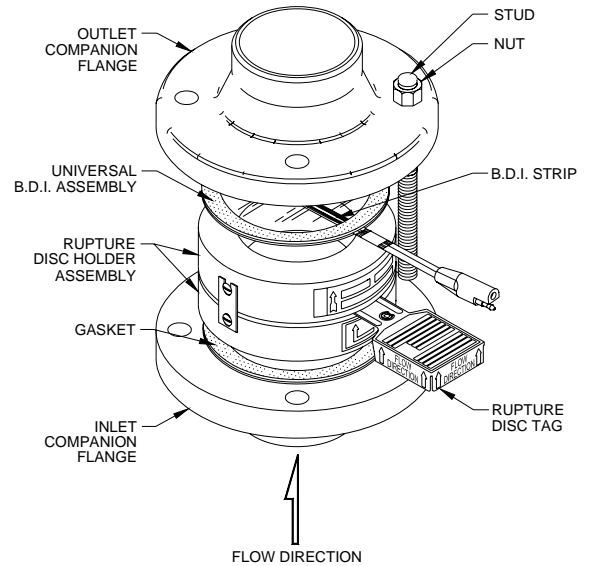
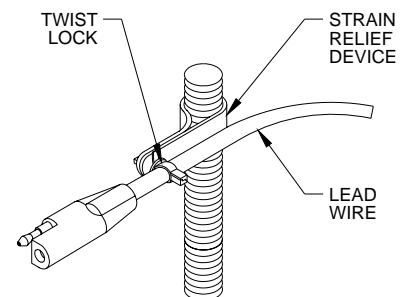


Figure 'B'



IV. Preventative Maintenance

1. Risk assessment and an annual rupture disc and UNIVERSAL B.D.I. Assembly replacement are recommended. 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 UNIVERSAL B.D.I. ASSEMBLY ARE NOT REPLACED PERIODICALLY WHEN EXPOSED TO THESE CONDITIONS, PREMATURE FAILURE OF THE RUPTURE DISC OR UNIVERSAL B.D.I. ASSEMBLY MAY OCCUR, THEREBY DISCHARGING THE PROCESS MEDIA.**
3. To avoid extended downtime, maintain three spare rupture discs and UNIVERSAL B.D.I. Assemblies 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 one of the addresses shown on the last page of these instructions.


Burst Disc Indicator (B.D.I.) Alarm System incorporates U.S. patent no. Re. 34,308 and 4,408,194; Australia patent no. 539415; Germany patent no. 3174227.0; Belgium, France and United Kingdom patent no. EP 0 033 867; Canada patent no. 1199990; Japan patent no. 2032464.

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 RMS

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

Marked:  II 2 G D EEx ia IIC
(Tamb = -40° C to +204° C)

EC Type Examination Certificate: ITSO3ATEX 21357U

FULFILLS THE REQUIREMENTS OF DIRECTIVE 94/9/EC (ATEX) FOR: COMPONENTS of equipment and protective systems intended for use in potentially explosive atmospheres.

APPLIED HARMONIZED STANDARD: EN 50 014: 1997 + Amds 1 & 2 General Requirements
EN 50 020: 2002, Intrinsic Safety

ADDITIONAL INFORMATION: Conformity assessment performed by Notified Body no. 0359,
ITS Testing and Certification Limited, Leatherhead, Surrey, UK.



**Continental Disc
Corporation**

Performance Under Pressure®



Certified Quality System
First Certified In 1992



ASME Code Symbol Stamp
If stamped, this product is built in accordance with the requirements of the ASME Boiler and Pressure Vessel Code, Section VIII, Division 1.

China Manufacture License
Products are in full compliance with the provisions of the People's Republic of China Import Regulations for Boiler and Pressure Vessel safety devices.



3A Sanitary Standards Stamp
If stamped, this product is in full compliance with the 3A standards, Serial #60-00, of the International Association of Milk, Food, and Environmental Sanitarians, Inc.



**European Union CE Mark
Type Approval Stamp**
If stamped, this product is certified to conform to the essential requirements of the Pressure Equipment Directive.

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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