

3-A SYMBOL NOTICE: This rupture disc is 3-A certified. 3-A is only valid when installed in compliance with applicable 3-A Standards and 3-A Accepted Practices, including 3-A Accepted Practice code number 606-04, E5.8 requiring the installation to be self-draining.

The sanitary version of Lo-V is designed for Manual or COP cleaning only for compliance with 3-A.

WARNING

- Read these instructions carefully and completely before attempting to unpack, install or service the rupture disc.
- Do not vent a rupture disc assembly to an area where it would endanger personnel.
- Install the rupture disc assembly in such a way that equipment in the area will not prevent rupture disc from opening or be damaged by system discharge.
- The Lo-V rupture discs are not designed for clean in place applications. The Lo-V sanitary rupture discs are designed for disassembly for manual or COP cleaning. Be sure that no brush, jet stream or any other cleaning mechanism makes contact with the disc. The Lo-V bolt type rupture disc removal and reinstallation is not recommended.
- "A" and "B" direction arrows on rupture disc tag must align with corresponding "A" and "B" direction arrows on rupture disc holder.
- "A" and "B" pressures on rupture disc tag must correspond with desired protection in accordance with process design.
- Note the "A" arrow will point in the direction of "higher" pressure process flow. The "B" flow arrow will point in the direction of "lower" pressure process flow.
- A baffle plate on the outlet end of vent piping does NOT necessarily prevent potentially dangerous discharge.
- Install the enclosed DANGER sign in a conspicuous location near the zone of potential danger.
- **SANITARY ONLY:** Install the enclosed "loose" rupture disc tag in a conspicuous location as needed for visibility to maintenance personnel.
- The holder contains a sharp knife blade. Use extreme caution when working around the knife blade.
- Handle the burst indicator (BI) circuit with care to avoid tearing, cutting or breaking the circuit material.

The Fike Lo-V rupture disc holders are designed for use with standard sanitary ferrules and clamps or in ANSI Bolt-Type Flanges.

- The Bolt-Type rupture discs have the 3-D rupture disc tag attached to the top-section component of the rupture disc assembly.
- The Sanitary rupture discs have rupture disc tag info etched on the flat portion of the top section component of the rupture disc assembly, and a loose, flat rupture disc tag. Note that there are a variety of sanitary ferrule standards used in industry including but not limited to Tri-Clover, DIN 32676, ISO 2852, etc. It is important to specify the type of ferrule when specifying the rupture disc.

INSPECTION/PREPARATION

Except where noted, rupture disc applies to both the metal and FEP components assembled.

A. NEW RUPTURE DISCS

WARNING: Always handle the rupture disc with extreme caution. Nicks, dents, scratches or foreign material may result in leakage or affect the burst pressure. Read the rupture disc tag completely before installing to confirm that the size and type are correct for your system.

- Carefully remove the rupture disc from its packing container.
- Carefully remove the holder base and top from its packing container.
- Do not use the knife blade to lift the holder. Carefully remove the pre-assembly screws and side clips and discard the plastic shipping protector.
- Inspect the rupture disc assembly for damage. Look for nicks or cuts in the seal or dents in the dome of the rupture disc. (Note the slot cover is designed with a pattern of slits.)
- Unless otherwise specified, the rupture disc has been cleaned with a water soluble detergent and is ready for installation. However, if your process requires additional cleaning or foreign material is present, disassemble and carefully clean the rupture disc with a FDA approved solvent that is compatible with your process. Avoid use of corrosive cleaning solutions.
- If installing a Fike Lo-V rupture disc in a non-Fike holder, verify the holder complies with following specifications for the Lo-V rupture disc. (See Figure 1 on next page).
- **NOTE:** Fike Lo-V rupture discs have 3 alignment pins, and the Fike Lo-V rupture discs are typically compatible with comparable 2-pin rupture discs.

B. MAINTAINING EXISTING RUPTURE DISCS AND MANUAL CLEANING (SANITARY ONLY)

If the sanitary rupture disc has not ruptured, it can be removed, inspected & reinstalled provided the following conditions are met. (The Lo-V bolt type rupture disc removal and reinstallation is not recommended.)

- The rupture disc must be free of foreign material.
 - Corrosion is not evident.
 - The slot cover and seal are intact and the seal is not punctured, nicked or scratched. (Note: the slot cover is designed with a pattern of slits.)
 - The dome of the rupture disc is not damaged in any way.
1. Note the disc dome is taller than the holder assembly. Therefore, carefully spread the companion flanges to avoid damage to the disc dome when removing the disc & holder assembly.
 2. Place the disc & holder assembly on a work surface with disc dome facing up.
 3. Do not use the knife blades to lift the holder.
 4. Carefully remove the pre-assembly screws or side clips.
 5. Separate the base and holddown. Remove the rupture disc from the holder.
 6. The holder may be hand polished with ScotchBrite™, fine emery cloth or #0000 steel wool. **DO NOT MACHINE THE RUPTURE DISC HOLDER!** If scratches, nicks, corrosion or deposits from the media cannot be removed by hand polishing, contact the factory.

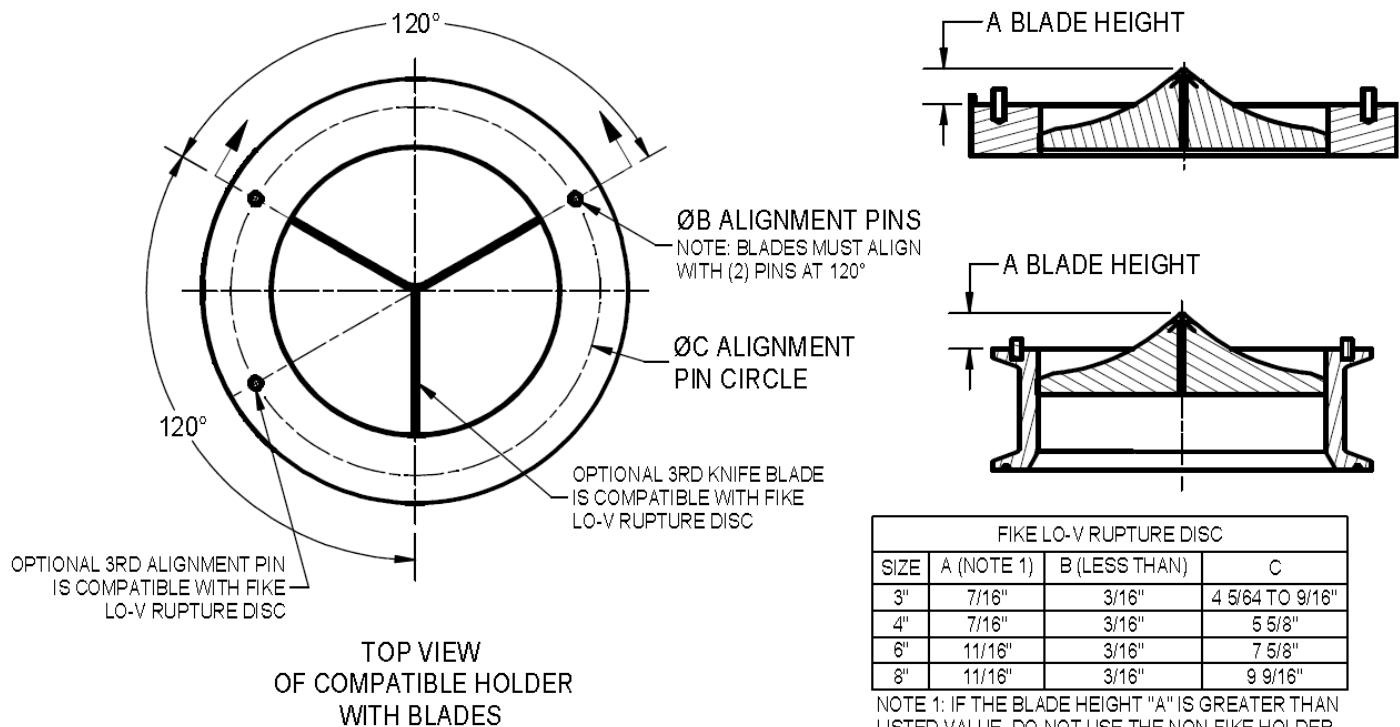


Figure 1 - Holder Fit-Up specifications for Non-Fike Holders and Lo-V Rupture Discs

7. KNIFE BLADE INSPECTION

New knife blades have been factory sharpened and inspected prior to shipment, and should not require sharpening. Knife blades that have been in process media, or may have been damaged during an upset condition. The knife blades should be inspected prior to installing the rupture disc in the holder. In a well-lit work area, with the knife blade edge facing up, carefully clean any dirt from the knife blades. The knife blade leading edge should have no nicks, gouges or burrs, and the leading tip should be sharp. The welds and base materials should not have any cracks. Sharpen the knife blades or return the holder to Fike Corporation for sharpening or holder replacement.

8. KNIFE BLADE SHARPENING -Standard knife blade material is 316 SST. Follow the original knife blade angles. Improper knife sharpening can affect the disc opening characteristics. Polish after sharpening the knife blade, to assure a surface finish of 32 Ra or better, to maintain 3-A compliance. Re-inspect the knife blades after sharpening.

9. ASSEMBLY - Before attempting to assemble the rupture disc and holder, confirm that the seat area of the rupture disc is designed to fit the rupture disc holder (See Figure 1).

C. SANITARY FERRULE HOLDER INSTALLATION

(See Figure 2)

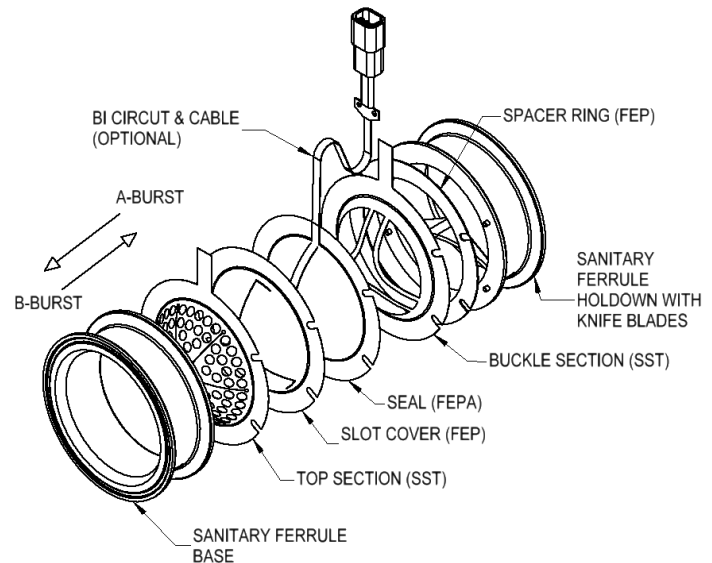


Figure 2 - Rupture Disc Assembly (Sanitary Holder Type Shown)

WARNING: Before attempting to install the rupture disc, confirm that the rupture disc is matched to the proper corresponding size (see Table 1).

Table 1 - Rupture Disc/Holder Size

Rupture Disc Size		Corresponding Sanitary Holder Ferrule Size	
Inches	DN	Inches	DN
3	80	4	100
4	100	6	150
6	150	8	200
8	200	10	250*
DN sizes correspond with DIN 32676 & ISO 2852			
*ISO 2852 does not offer DN250 size.			

1. Verify the process flow directions.
2. Place the rupture disc assembly into the ferrules with the flow arrows on the holder tags pointing in the same direction as the desired flows, and with the dome of the disc oriented to correspond with the flow directions (locating pins on the holder prevent the disc from being installed upside down).
3. Install the clamp around the ferrules so that the wing nut is on the same side as the holder tags.
4. Hand-tighten the wing nut until the clamp is fully engaged with the ferrules and the rupture disc is securely in position, approximately 25 in-lbs.
5. Attach the loose rupture disc tag in a conspicuous location as needed for visibility to maintenance personnel.

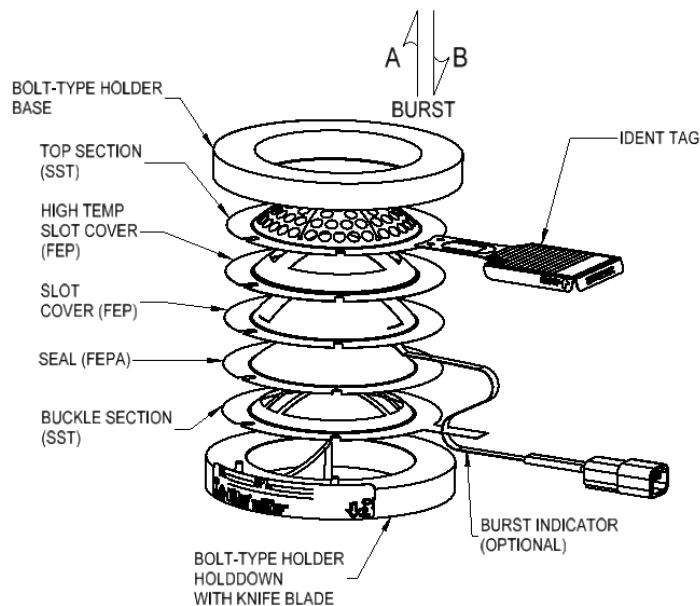
WARNING: Double check the orientation of the rupture disc. Verify flow arrows on the disc tags are pointed in the same direction as the process flow.

Under normal operation conditions, the rupture disc should be replaced annually. Severe operating conditions may require that the rupture disc be replaced more often.

D. BOLT-TYPE HOLDER INSTALLATION - (See Figure 3)

WARNING: Before attempting to install the rupture disc and holder, confirm that the rupture disc size matches the bolt-type flange size.

1. Verify the process flow directions.
2. Before attempting to assemble the rupture disc and holder, confirm that the seat area of the rupture disc is designed to fit the rupture disc holder. Place the base on a work surface with seating surface facing up.



**Figure 3 - Rupture Disc Assembly
(Bolt-Type Shown)**

3. Place the rupture disc into the base with the tag flow arrows in the same direction as base flow arrows. Carefully place holddown onto rupture disc with flow arrows in the same direction as disc and base flow arrows. Rotate holddown to align pre-assembly pins and side clip holes. (Pre-assembly pins on the holder prevent the disc from being installed upside down.)
4. Install and tighten pre-assembly screws and side clips.
5. Place gaskets on top and bottom of assembly. Spiral wound gaskets are not recommended.
6. Carefully spread the flanges apart to clear the dome of the rupture disc, and install the holder & rupture disc assembly in the flanges. Verify flow arrows are pointed in the same direction as the process flow. Locate the rupture disc holder assembly to the center of the flanges.
7. If necessary, clean the threads on studs and nuts. Wire brushing is usually sufficient. Fike recommends SAE 20 oil as a fastener lubricant. Commercial thread lubricants are recommended whenever conditions warrant. These conditions may include corrosive, marine and outdoor environments, service temperatures greater than 212°F (100°C), or stainless steel on stainless steel threads.

8. **CAUTION:** When installing a rupture disc with an integrated burst indicator, it is recommended the burst indicator be positioned between bolts at the end of the torque pattern as shown in Figure 4. This will put the burst indicator under the least amount of stress while torque is being applied.
9. Do not use studs & nuts that show evidence of galling. Finger tighten flange bolt nuts. Install and tighten the studs and nuts of the flange to the torque values provided, Table 2. Using a crisscross pattern, apply torque in four steps of 25% increments. After the recommended torque has been achieved, perform a final tightening in a clockwise bolt-to-bolt fashion to ensure all studs have equal loading.

NOTE: Follow the torque instructions in this document unless a specific torque requirement is stated on the Rupture Disc and/or Rupture Disc Holder Tag.

10. Experience has shown that in some installation conditions, it may be necessary to re-torque the flange bolting after the system has operated through normal pressure and temperature cycles.

WARNING: Double check the orientation of the rupture disc. Verify flow arrows on the disc tags are pointed in the same direction as the intended A and B direction process flow. Under normal operation conditions, the rupture disc should be replaced annually. Severe operating conditions may require that the rupture disc be replaced more often.

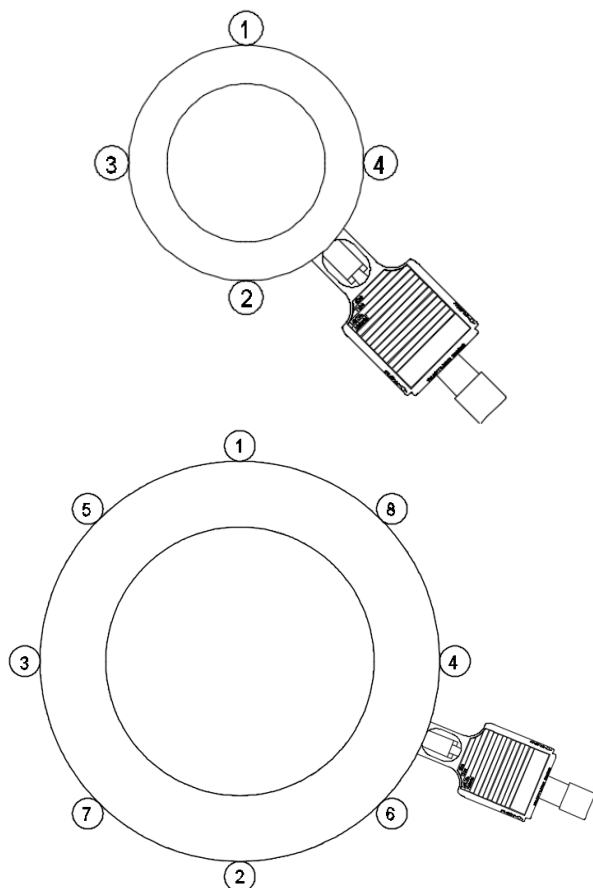


Figure 4: Recommended Torque Pattern with Integrated Burst Indicator

Table 2 - Lo-V Bolt Type ANSI 150 Flange Torque

ANSI 150		
Disc Size	Torque	
(inch)	(ft-lbs)	(Nm)
3	37	50
4	23	31
6	40	54
8	53	72
PN 6		
Disc Size	Torque	
DN	(ft-lbs)	(Nm)
80	37	50
100	47	64
150	34	46
200	44	60
PN 10 & PN 16		
Disc Size	Torque	
DN	(ft-lbs)	(Nm)
80	18	24
100	23	31
150	42	57
200	56	76

NOTE: Torque values are based on a nut factor of K = 0.2. Adjustment to the torque should be considered if the installation utilizes bolting/lubrication with a nut factor other than K = 0.2. The following expression may be used for correction:

Equation 1: $T_2 = (T_1/K_1) \cdot K_2$ where T_1 and K_1 are Fike default torque and nut factor values.

E. INTEGRATED BURST INDICATOR

WARNING: Read these instructions carefully and completely before attempting to unpack, install or service the indicator. Specific attention must be paid to the circuit. Special care must be taken to avoid applying any force to the circuit or Teflon seal.

CERTIFICATION FOR INTEGRATED BURST INDICATOR

Standards:

IEC 60079-0 : 2011

IEC 60079-11 : 2011

Reference of IECEX Certificate:

INE 12.0004X

IECEX CSA 17.0021X

Protection marking:

Ex ia IIB T4 Ga

Ex ia IIIC T135°C Da

INTEGRATED BURST INDICATOR WIRING

The indicator should be wired per the wiring diagram illustrated in Figure 5. Install in accordance with all applicable local and national codes (in Canada, Canadian Electric Code, Part 1).

Fike lead cable D3513-115-X is ordered separately.

NOTE: The burst indicator is intrinsically safe for Class I, II, III, Division 1, Groups A, B, C, D, E, F, G when connected through a listed safety barrier (CSA, FM, UL) with entity parameters $U_i = 28.4 \text{ V}$, $P_i = 0.615 \text{ W}$, $I_i = 93 \text{ mA}$, $L_i = 5.6 \mu\text{H}$, $C_i = 1.8 \text{ nF}$.

Fike CSA approved intrinsically safe barriers:

02-16086	Safety Barrier
02-9884	Switching Repeater
02-12110	Isolating Switch Amplifier
02-13775	Isolating Switch Amplifier

NOTE: Rupture disc specifications can be found on the rupture disc tag. When equipped with an integrated burst indicator, a tie strap is recommended to hold the wiring secure to the piping, as shown in Figure 6.

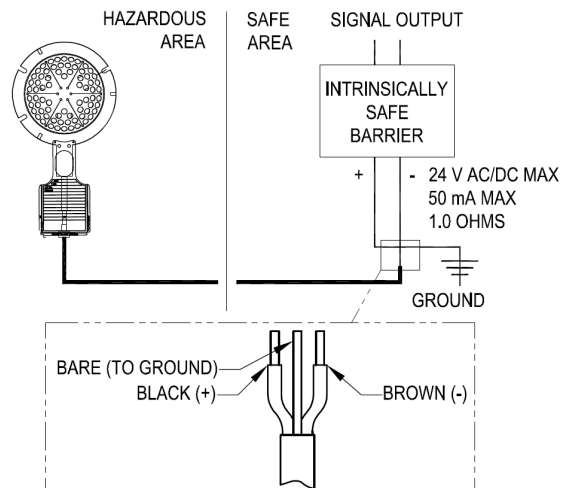


Figure 5 - Integrated burst indicator wiring diagram

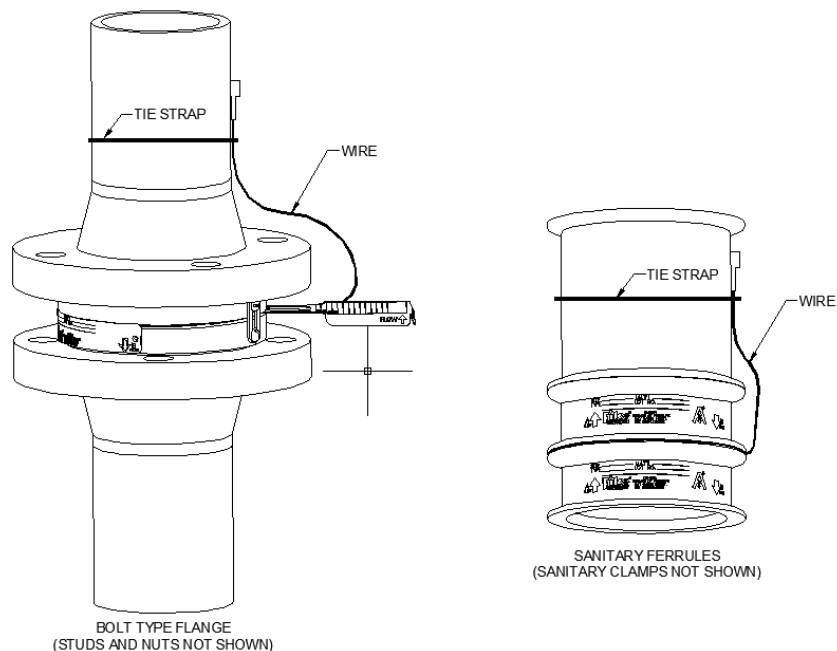


Figure 6 - Rupture Disc Burst Indicator Circuit Cable Routing and Secure to Piping