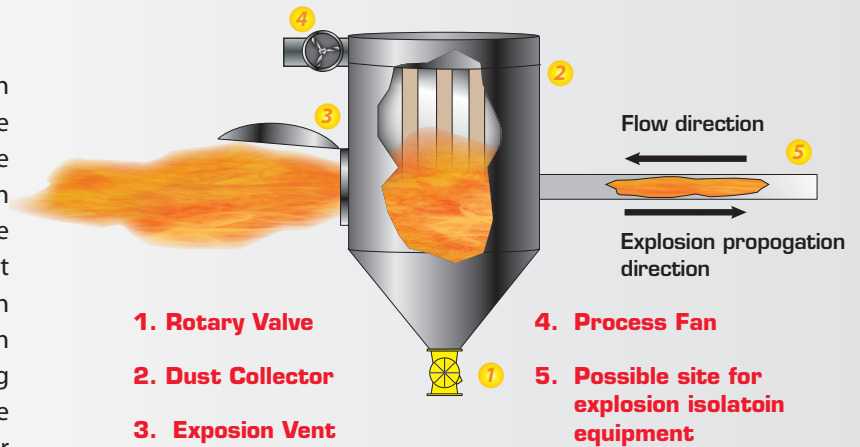


# ***EXPLOSION ISOLATION SYSTEMS***



## THE PROBLEM

In many process systems, it's not enough to only protect the equipment where a dust deflagration is initiated – the interconnecting pipes and ducts through which vessels are linked must also be considered. These interconnections can act as pathways for a dust deflagration and can lead to an increase in combustion strength and speed. This is because a propagating deflagration increases in turbulence while traveling down a constricted pipe or duct creating pressure piling and flame jet ignition in the conjoined equipment. The end result is a deflagration so powerful and unpredictable that conventional protection systems become inadequate and interconnected vessels and



surrounding areas are left unguarded. The solution is to use one of CV Technology's Explosion Isolation Technologies to stop a deflagration from propagating down its path to destruction.

## THE SOLUTIONS

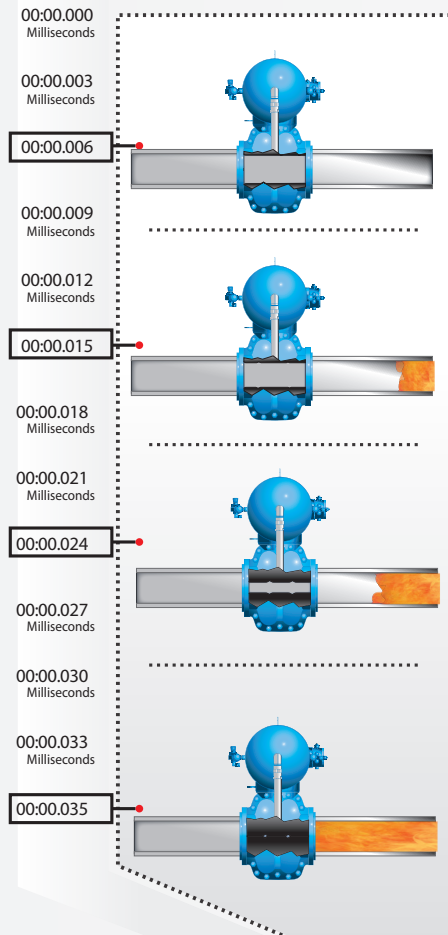
### INTERCEPTOR<sup>®</sup>-VE<sup>™</sup> Isolation Valve

#### Principle of Operation:

The INTERCEPTOR<sup>®</sup>-VE<sup>™</sup> Valve is normally open. Upon receiving a signal from either a pressure responder, explosion panel or an optical sensor, the INTERCEPTOR<sup>®</sup>-VE<sup>™</sup> Controller will respond by sending a signal to the INTERCEPTOR<sup>®</sup>-VE<sup>™</sup> Valve. The INTERCEPTOR<sup>®</sup>-VE<sup>™</sup> Valve will close in milliseconds to prevent passage of hot particles, glowing embers, flames, or pressure from continuing to flow through the pipe. The medium for actuation is plant compressed-air stored in a tank at the valve to ensure the fastest response possible under any plant conditions. The valve closure principle is a rubber bladder pinch valve and is a fail-safe design.

#### Advantages of the Interceptor<sup>®</sup>-VE<sup>™</sup> isolation valve system:

- Requires minimal maintenance
- Imparts negligible shock to the piping in which it is installed
- High reliability through cyclic activations
- Clam shell valve housing enables easy bladder replacement
- Creates a physical barrier that is withheld during the entire duration of primary and secondary explosions





Call for more info! 561 • 694 • 9588

## INTERCEPTOR<sup>®</sup> - HRD<sup>™</sup> Chemical Isolation



### Principle of Operation:

The INTERCEPTOR<sup>®</sup>-HRD<sup>™</sup> isolation system consists of a detector, controller and one or more isolation canisters. The detector can be of two types: If a pipe or duct is connected to a vessel being protected by the INTERCEPTOR<sup>®</sup>-HRD<sup>™</sup> suppression system, the DeTex Pressure Detector being used to signal suppression will also be used to signal isolation. If a pipe or duct, however, is connected to a vessel that is being protected by explosion free vents or flameless vents, then the LuMex Optical Detector will then be used to signal isolation. Upon receiving a signal from either detector, The CONEX Controller will trigger the isolation bottle(s) to homogenously inject suppressant into the protected pipe or duct creating a chemical barrier, effectively preventing the dust deflagration from propagating to interconnected equipment.

### Advantages of the Interceptor<sup>®</sup>-HRD<sup>™</sup> isolation system:

- Ideal for larger line sizes
- High reaction speed from detection to activation
- Data from the CONEX controller can be independently archived
- Floating detection point of the DeTex Pressure Detector minimizes false activations
- The LuMex Optical Detector enables high reliability and early detections



## INTERCEPTOR<sup>®</sup> - FV<sup>™</sup> Flap Valve



### Principle of Operation:

During normal operating conditions, the INTERCEPTOR<sup>®</sup>-FV<sup>™</sup> Explosion Isolation Flap Valve is mechanically retained in the open position. This results in a low pressure drop across the valve as compared to similar models on the market that rely on the process flow to open the valve. During an upset condition, the regular flow is interrupted and a flux of pressure coming from the opposite direction causes the Flap Valve to slam and lock shut, effectively preventing the dust deflagration from propagating to interconnected equipment.

### Advantages of the Interceptor<sup>®</sup>-FV<sup>™</sup> Flap Valve isolation system:

- Ideal for clean air and low product to air ratio lines
- Economic isolation solution
- Simple install
- Low maintenance and maintenance costs
- Requires no electrical energy for activation
- Position Indicator to signal an activation
- Integrated locking mechanism that ensures no flame breakthrough

Process flow





## Slide Gate Valves

Used in specialty applications, Slide Gate Valves can offer a high quality and high strength explosion isolation solution. Utilizing compressed air as the medium for actuation, CV Technology's Slide Gate Valves close in milliseconds upon receiving a signal from a pressure responder or explosion panel creating a strong mechanical barrier. With the unique design, each Slide Gate Valve is capable of isolating pressure up to 10.0 bar, can be installed at short distances from the protected vessel and can be used through cyclic activations from the plant supplied compressed air.



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