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EXPLOSION ISOLATION SYSTEMS

fire and explosion protection



Effective protection of process
equipment and industrial lines
to prevent explosion propagation.

A dust explosion can spread from a vessel, even one protected by an explosion vent panel or HRD system, through interconnecting piping or ducts.

When explosion propagation occurs other equipment and infrastructure not involved in the initial explosion is often catastrophically damaged.

HRD Barrier

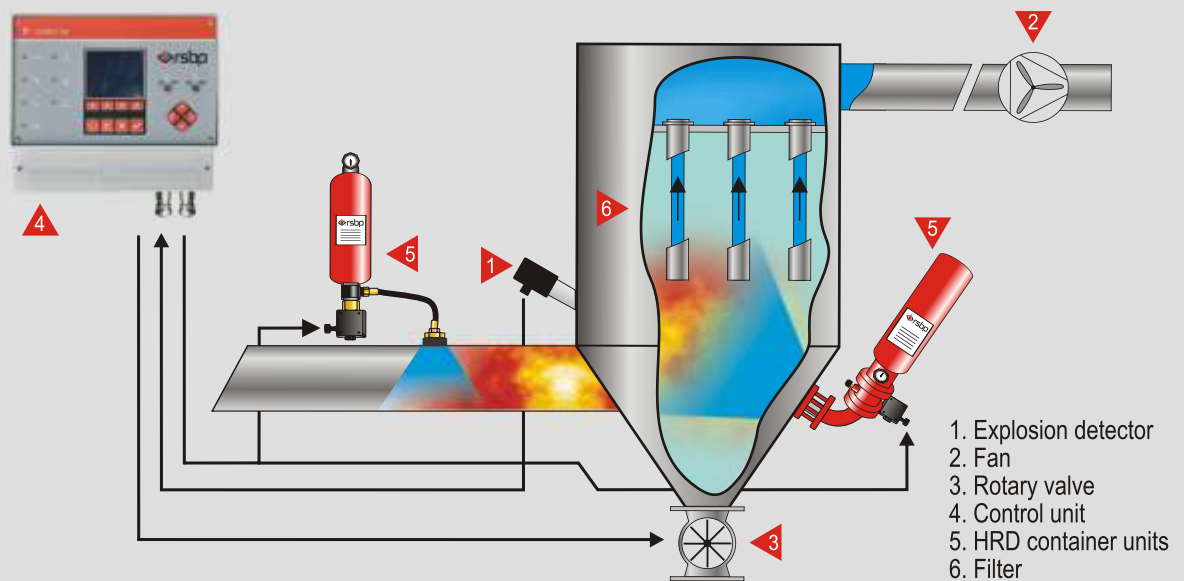
HRD barriers are characterized by extremely fast discharge of an extinguishing agent into pipes connecting various process equipment. During an explosion pressure and flame propagates through pipes. Both of these phenomena can be detected by special detectors both optical and pressure developed for the purpose.

The detectors transmit a signal to a control unit that, in turn, activates HRD container units (bottles). The bottles are equipped by fast-opening valves capable of immediate release of extinguishing agent creating a very effective extinguishing agent barrier.

ADVANTAGES

- » high reaction speed of the system from detection to extinguishing
- » high reliability of the system
- » independent archiving of data coming from detector
- » customization of detector, control unit, and container unit
- » high quality components
- » customization according to customer requirements
- » capability to be used in indoor and outdoor areas

HRD Barrier on a pipe schematic



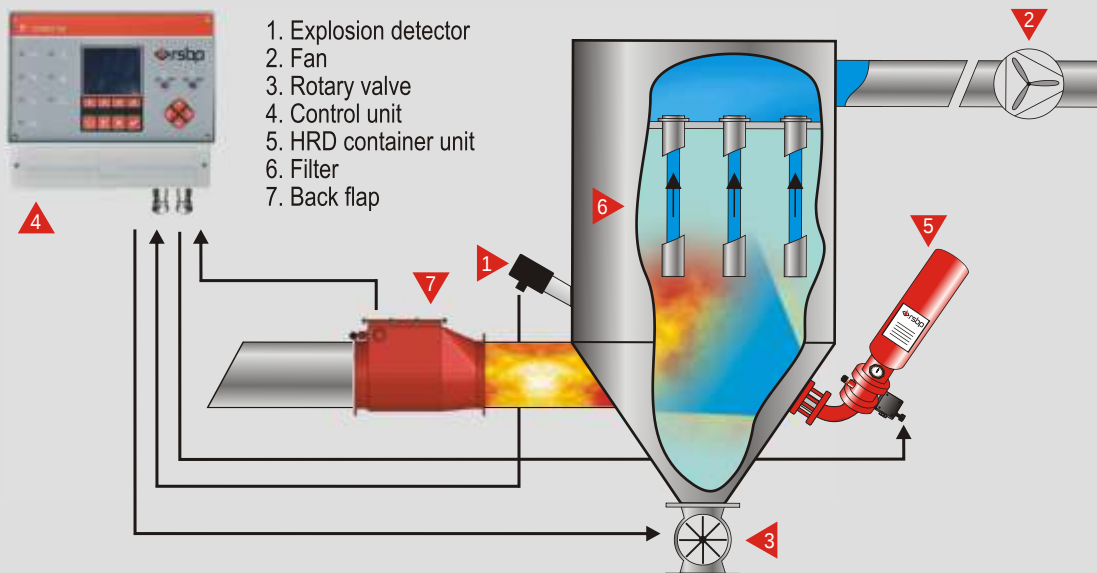
Test photos: Dust explosion in a pipe without and with RSBP HRD barrier



Back Flap

RSBP back flap is an economical solution of protection against explosion propagation into an inlet pipe. During normal operation the back flap is open by flow of air; in case of an explosion this flap closes by a pressure wave, and thus prevents propagation of the explosion to other equipment or production technology.

- For pipe sizes from DN 100
- Optional position indicator
- Does not need electrical energy or activation system
- Variable installation distance
- Simple installation, maintenance, and low maintenance costs



Quick - Acting Slide Valve

Slide valves are used for complete closure of a pipe in the case of explosion, and therefore they are suitable for protection of production technologies with danger of dust explosion. The quick-acting slide valve is activated after detection of an incipient explosion. A detector sends a signal to a control unit that in turn activates the closing mechanism of the valve. The quick-acting slide valve closes pneumatically. The valve features a fail-safe design that places the valve in a safety position when it is not possible to guarantee its reliable function (e.g. during interruption of power or communication circuits, decrease in pressure, etc.).

- For pipe sizes from DN 50
- Pressure resistance of up to 10 bars
- Extremely fast reaction time of 0.04 s
- Short installation distance
- After activation immediately ready for another one



Anti - Explosion Diverter

Anti-explosion diverters provide a normal flow path under standard operating conditions, however, during an emergency the diverter takes an explosion that propagates along the pipe and directs it into a safety zone.



Fast - Closing Valve

The fast-closing float anti-explosion valve prevents propagation of flame and pressure during explosion to other production equipment. This valve is intended for protection of pipe transport systems.

- For pipe sizes from DN 100
- For equipment with temperature of up to 250°C
- Does not need electrical energy or activation system
- Low activation pressure and pressure losses
- Short installation distance
- Simple maintenance



Application examples



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