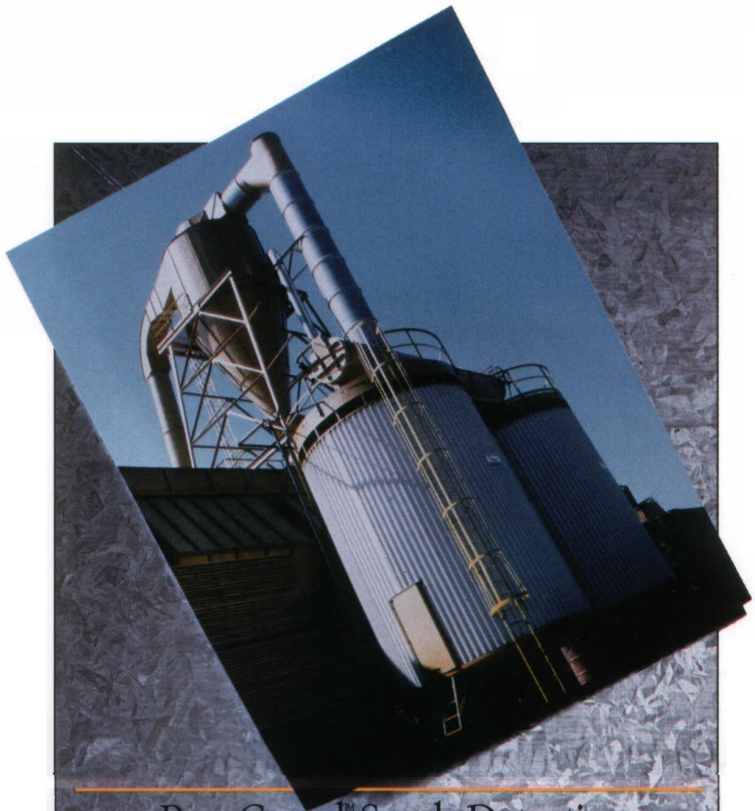


PyroGuard™ Spark Detection and Extinguishing System

Clarke's

PyroGuard™.

Ultimate Protection, Reasonably Priced

The PyroGuard Spark Detection and Extinguishment system is used to identify and extinguish sparks, before they have a chance to enter sensitive dust collection or storage equipment. In addition to the PyroGuard System, Clarke's also manufactures a complete line of Spark, Flame and Explosion Venting. When applied properly, the PyroGuard System and related devises can virtually eliminate the possibility of harm to plant personnel, and can minimize the extent of damage caused by a fire or an explosion.

CONTROL CONSOLES

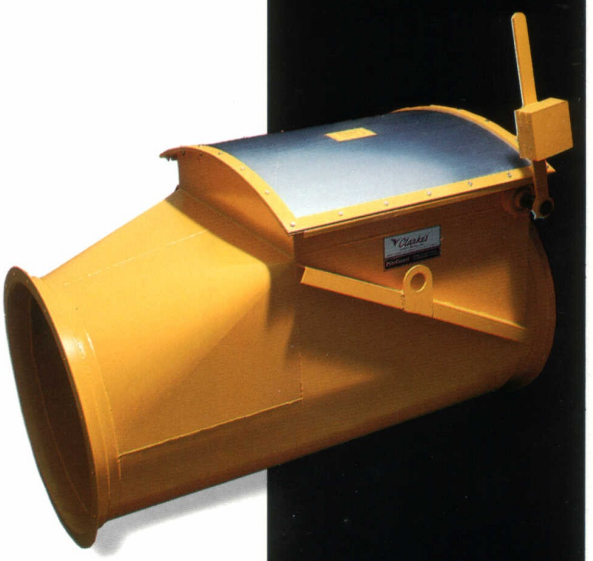
Two (2) models of PyroGuard Control Consoles are available. The PyroGuard CXC console is ideal for installations requiring one (1) or two (2) areas of protection. These units allow for storage of spark count, extinguishment unit activations and manual tests performed. In addition, each console is user programmable and can include a panel mount serial printer. The PyroGuard CXL Console has the ability for storage of 10,240 events in memory (unlimited event storage with the addition of PyroComm. software package and supplemental PC Unit), records events to 1/100 of a second, is programmable for auto-testing of sensors and extinguishment unit valves, and allows for the generation of time specific reports for events and/or areas. This model of console is available in four (4), eight (8), and any multiple of twelve (12) up to ninety-six (96) zones. With the addition of an optional Server Software Package the CXL consoles can be linked to several types of Windows HMI programs.

DETECTORS

Three (3) types of PyroGuard Detectors are available. The low temperature/low pressure detectors are generally placed on standard pneumatic systems. High temperature/high pressure detectors are normally used on dryer or hot gas systems and high pressure pneumatic conveying systems. Both types of detectors require the monitored environment to be completely dark. Ambient light detectors will tolerate daylight and are typically used in drop chutes where material is transferred. All detectors are housed in cast aluminum enclosures with water tight seals and quick disconnect SO cords.

EXTINGUISHMENT UNITS

All PyroGuard Extinguishment Units include a solenoid valve and flow pressure switch for confirmation of water flow at each valve. The solenoid valves are a diaphragm type, having a self cleaning port which functions every time the valve is activated. This self cleaning action helps ensure that the valves will continue to open and close quickly. Over time, if the diaphragm and seals inside the valve start to wear, Clarke's can supply a complete repair kit. In most installations the valve repairs can be made without removal from the mounting surface.



EXPLOSION VENTS

Explosion Vents are typically located along a length of ducting, however may also be applied to dust collection or storage equipment. They are designed to burst open at a predetermined pressure increase, reducing the damage caused by an explosion. When the pressure inside the duct work or vessel increases, the aluminum diaphragm relieves on three (3) sides. The fourth side of the diaphragm is secured with bolts to prevent it from becoming air borne.

HISPEED ABORT GATES

HiSpeed Abort Gates are designed to divert sparks and hazardous conditions out of pneumatic conveying systems. They are typically located prior to dust collection equipment or on filtered air ducts re-entering buildings. The unit has a blade, which during normal operation is held up by a DC Magnet. The absence of power to the abort gate will cause the magnet to release and the blade to drop, sealing off the air stream, and diverting the flow to atmosphere through the top of the unit. In addition to gravity, the abort blade is assisted by shaft mounted springs providing for high speed closure. Abort gates are tested to be fully closed in approximately 500 milliseconds and are available with either manual or powered reset.

BACKFLOW DAMPERS

Backflow Dampers are designed to activate under back pressure and relieve hazardous conditions from pneumatic conveying systems. Typical installations locate the backflow damper prior to dust collection equipment or after process equipment which may have the potential to generate and introduce sparks into a pneumatic system. The unit has an explosion vent mounted on the top side for pressure relief. In the event that an explosion is traveling back down the pipe, the damper blade will automatically slam shut and the explosion vent diaphragm will rupture, venting to atmosphere.

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