

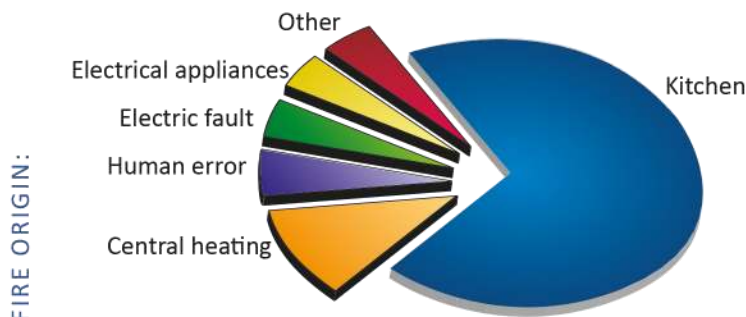
INTRODUCTION

Fire is one of the biggest safety concerns in industrial kitchens. According to 2010 assurance company reports, 5 restaurant sector companies a day suffer fire related losses. This adds up to millions of dollars annually.

The owner of the kitchen is responsible for evaluating risk and taking the necessary actions to effectively prevent and protect kitchen appliances from fire. A SEVO Black Diamond System is an investment of less than 5% of all the kitchen equipment. In the event of a fire the Black Diamond system will minimize losses and limit kitchen down time.

**FIRE PROTECTION:
ESSENTIAL WHEN FIRE IS INVOLVED IN OUR DAILY WORK**

It is extremely important to have a fire protection system in the kitchen. Statistics show that the majority of fires in hotel restaurants originate in the kitchen.



SOURCE: National Fire Incident Reporting System (NFIRS) - 2007 a 2009

COST EFFECTIVE

A Black Diamond system can fit inside any industrial kitchen. Each of the 5 different cylinder sizes (9, 12.7, 18.7, 25 and 35L volume) allows protection of both small and large industrial kitchens with just a single cylinder. Improved technology reduces the amount of equipment required, which makes installation simpler and keeps costs lower.

DIFFERENT NOZZLES TO PROTECT DIFFERENT KINDS OF APPLIANCES

Using the same kind of nozzle for all types of appliances means a loss in system effectiveness and efficiency. More agent must be utilized in order to compensate for the differences. Black Diamond has an array of nozzles to customize the system according to the requirements for each appliance. The discharge angle, agent flow, and position are perfectly tested to get maximum systems benefits.

OUR POINT OF VIEW ABOUT FIRE PROTECTION IN KITCHENS

Active fire protection minimizes the damage that a fire can cause to equipment and personnel. The when fire is involved in daily work, it becomes more important to have the proper protections in place.

BLACK DIAMOND provides the best fire protection available for kitchens because it uses the most advanced technology and agent on the market today. It is fully automatic so there need not be anyone present to activate it in the event of a fire. This means expensive kitchen equipment is protected around the clock.

Additionally, BLACK DIAMOND agent, GEM Protect is non-corrosive and easy to clean which minimizes down time after a fire.

Jon Flamm. General Manager



SEVO Systems is raising the bar once again, with fire protection systems for industrial kitchens: BLACK DIAMOND

We are raising the bar with a new, highly effective extinguishing system that utilizes the most advanced technology on the market.

We are raising the bar with a detection system that is both easy to install and maintain, with the quality and confidence of SEVO Systems.

Other fire suppression alternatives are much more expensive and difficult to install. This is the reason we developed Black Diamond. The new extinguishing fluid GEM Protect wet chemical agent, is non-toxic, compatible with human presence, environmentally friendly, and easy to clean up while maintaining the extinguishing power of other products on the market.



APPLICATIONS:

- Hotels & Resorts
- Restaurants
- Coffee shops
- Buffets

- Health Clubs
- Shopping Malls
- Universities
- Hospitals

- Isle kitchens
- Wall kitchens
- Burners
- Charbroilers
- Fryers
- Griddles
- Grills
- Ovens
- Chicken roasters
- Woks

INSTALLATION AND MAINTENANCE

Black Diamond is easy to install and maintain. The Black Diamond Pneumatic tubing allows push-to-connect installation, which is both simpler and more stable than other systems on the market.

The minimal amount of actuation equipment reduces the scale and scope of maintenance required.



THE FIRE IN INDUSTRIAL KITCHENS

The activity in an industrial kitchen is frenetic, the temperature is very high while a large number of people work in close proximity to flammable cooking ingredients such as fats and oils. Flammable cooking mediums stored in large quantities suffer in the high temperatures of the kitchen. Their cooling capacity is very low, making traditional fire extinguishers ineffective in that type of hazardous situation. Fat and oil fires are considered Class F (Europe) and K (USA).

GEM PROTECT FIRE EXTINGUISHING AGENT

GEM Protect wet chemical fire extinguishing agent utilizes potassium salt. It is a water miscible product, liquid in ambient pressure and temperature and has a low viscosity. The agent is stable, therefore it will not deteriorate over time.

The agent is discharged in a very fine mist, cooling the fire to below its auto-ignition. It extinguishes by separating oxygen and fuel, and is an efficient extinguishing agent for Class F or K fires. The agent reacts with grease to form a foam-like layer commonly called saponification which starves the fire of oxygen, halting combustion and preventing re-ignition.

EXTINGUISHING SYSTEM

The cylinder valve assembly is pressurized with dry nitrogen to 18 bar (260 psi). The valve is opened by the pneumatic or electric detection system, then the agent is discharged through the piping network.

Two possible options for the piping network are 15mm or 1/2" stainless steel ASTM grade B sch 40. Following Black Diamond design indications we ensure the discharge of all the nozzles at the same time, with the appropriate agent quantity preventing re-ignition.



BLACK DIAMOND TRAINING

Black Diamond is designed, installed, and serviced by trained and certified installers. Please check with a SEVO Systems global distributor for more information: www.sevosystems.com



Detection system

An effective fire detection system is essential to minimizing the damage from a fire. Black Diamond offers single or multiple points of detection and detects throughout the hoods and ducts, as well as in the zones around kitchen appliances at risk for fire.

Black Diamond fire detection system offers two types of detection: Electric and Pneumatic. A certified Black Diamond installer will determine which type of detection is required based on the type of kitchen and kitchen appliances being protected.

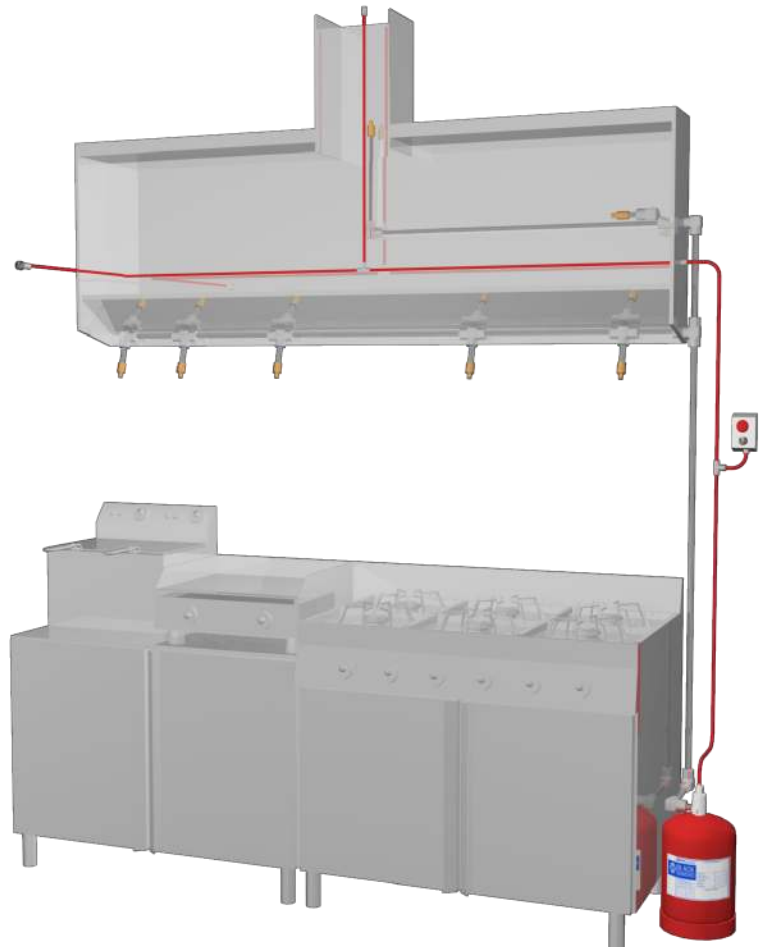


ELECTRICAL DETECTION SYSTEM

The Black Diamond System utilizes electrical detection by a control panel and a thermal detector cable. The thermal line will detect a range of temperatures (190°F(88°C), 221°F(105°C), 356°F(180°C) depending on the hazard type. An electric solenoid on the top of the valve will discharge the system. Control panel features allow options such as remote monitoring and communication to the building fire alarm panel.

PNEUMATIC DETECTION SYSTEM

The pneumatic detection system uses a pressurized polymeric detection tube. The tube is distributed through the hood and duct. The pneumatic detection tubing is temperature sensitive, and acts as a continuous linear thermal detector that ruptures at either 248°F (120°C), or 356°F (180°C) depending on the hazard area being protected.



NOZZLES

"The Black Diamond uses a specialized nozzle, making it the most efficient system for extinguishing fat and oil fires. Black Diamond is very versatile, regardless of the type or number of appliances or hazards in need of protection. Black Diamond is designed and installed according to UL-300, NFPA 17A and NFPA 96."

Javier Sánchez. Technical Manager