

Fire safety in a CNC Grinding / EDM machine

The Problem-

We have seen a spurt in the incidents of fire in a CNC/EDM machine. No doubt, technology has evolved over time, and manufacturers globally have been addressing the fire risk in their machines!

Fire in a CNC/EDM machine can occur instantly and without warning. A hot metal chip, a tool crash, or even a spark of static electricity can ignite the petroleum-based cutting oils used in many of these machines. Oil-based machine fires produce high heat and dense black smoke which makes it difficult to control using handheld fire extinguishers.

A machine fire has the potential to quickly spread through mist collectors and along electrical lines and ducting to the building's structure with catastrophic results. Even when an automatic sprinkler system activates, the cost of water damage often far exceeds the cost of the fire damage; and indirect expenses, such as business interruption, downtime, and lost customers can be many times as costly.

The Solution-

Firetrace is an automatic fire detection and suppression system for micro environments. Firetrace deploys a patented and UL approved pneumatic detection tube within the hazard area to be protected. In case of a fire, the tube bursts at its hottest point, there by activating the system and discharging the extinguishing gas directly on the fire, thru strategically placed nozzles within the compartment to be protected.

A Firetrace system can be fitted to virtually any CNC or EDM machine and will automatically detect and extinguish a fire inside the machine before it can cause appreciable damage. Upon detection of a fire, the system discharges either CO₂ or "clean" extinguishing agents such as Dupont™ FM-200© or 3M™ Novec™ 1230 fire protection fluid. These gaseous extinguishing agents are non-conductive, non-corrosive, leave no residue on the machine or work place, and will not contaminate expensive metal working oils or fluids.

At the heart of every Firetrace system is the unique, pressurized red Firetrace Detection Tubing. This proprietary polymer tubing is actually a linear pneumatic heat sensor that ruptures when exposed to a fire's radiant heat. The flexible detection tubing can be easily routed in and around the hazard areas of a CNC or EDM machine, providing fast and reliable fire detection in areas that other detection methods cannot reach.

Because Firetrace detects and suppresses a fire at its source – inside the machine – the system reacts far faster than traditional fire suppression methods and reduces or eliminates the collateral damages that they cause. In many cases a machine can be returned to service just minutes after a fire.

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