CASE STUDY: FIRE SUPPRESSION SYSTEM – VOCATIONAL TRUCK

APPLICATION: KENWORTH C500 TRUCK

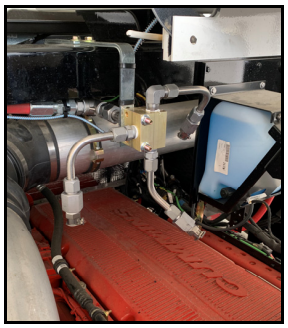
The Kenworth C500 is a heavy-duty, off-road vocational truck known for its extreme durability, offering high weight capacity and powerful performance. It's specifically engineered for harsh off-road environments in industries like mining, logging, and oilfield work. The flammable nature of materials within these industries raise the risk of equipment fire and make vehicle fire suppression systems (FSS) critical. This truck was destined for a mine site which specified that all machines must have a FSS. The Kenworth dealer approached FLO for a reliable, purpose-built AFEX system.

THE FLO SOLUTION

Fire-detecting linear wire is placed around the truck. When the high heat of a fire penetrates the linear wire, a signal is sent to the control panel in the truck cab. The control panel alerts the driver to quickly evacuate the truck and at the same time automatically initiates the electric actuator, which discharges the fire-fighting agent inside the onboard tank and sends it through a tubing distribution network. At the end of the network, the dry chemical agent is disbursed into the truck's protected areas via nozzles aimed at its high-hazard components, like turbochargers, starter, fuel filter, batteries, alternator, transmission and hydraulics, to extinguish the fire quickly and efficiently.

Fire Suppression System Features:

- Cone spray nozzles are used to provide protected areas with a broad distribution of a dry chemical powder to extinguish a fire quickly and efficiently.
- The automatic discharge nature of the FSS eliminates the operator's involvement in discharging the system manually, allowing him to exit the truck safely and promptly.
- 2 manual actuators, 1 inside of the cab and 1 outside located at ground level, are also included as a back-up and for ease of system activation.
- A 30lb tank comes complete with dry chemical agent, gas tube, cap, and bursting disc. The tank is non-pressurized, with the introduction of nitrogen gas for pressurization at the time of actuation. A fitted mounting bracket for the tank and two metal straps keeps the tank properly secured during operation of the truck.
- Each nitrogen cartridge consists of 99.99% nitrogen with a dew point of -73 °C, guaranteeing pressurization when actuation of the system is required during the coldest months.
- Spring loaded, hinged caps at the nozzle openings block foreign materials that could possibly clog the nozzle and prevent or diminish the system discharge.
- The supply lines that distribute the dry chemical agent are stainless steel tubing and hydraulic hose. Hydraulic hose lines are used for system actuation and agent tank pressurization.
- The firing mechanism houses the electric actuator and nitrogen cartridge and includes a manual knob as a secondary method of discharging the system. Spring loaded check valves control the direction of the nitrogen gas.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