CASE STUDY: FIRE SUPPRESSION SYSTEM – AERIAL WORK PLATFORMS

APPLICATION: RAIL BOOM LIFTS

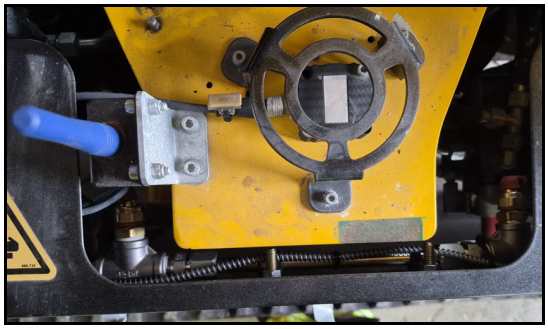
Rail boom lifts (AKA hi-rail boom lifts) are specialized aerial work platforms equipped with rail wheels in addition to standard rubber tires or a tracked base, allowing them to operate seamlessly on both roads and railway tracks. These machines are commonly used for overhead rail maintenance, including bridge inspections, tunnel work, and electrification repairs. FLO was approached to install compact vehicle fire suppression systems (FSS) on 3 rail boom lifts assigned to construction and maintenance work in rail tunnels.

THE FLO SOLUTION

Fire-detecting linear wire is placed around the rail boom lift. When the high heat of a fire penetrates the linear wire, a signal is sent to the control panel. The control panel alerts the driver to quickly evacuate the rail boom lift 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 distribution network, the liquid chemical agent is disbursed into the rail boom lift's protected areas via nozzles aimed at its high-hazard components, like starter, batteries, alternator and hydraulics, to extinguish the fire quickly and efficiently while cooling super-heated temperatures.

Fire Suppression System Features:

- Cone spray nozzles are used to provide protected areas with a broad distribution of a liquid chemical to extinguish a fire quickly.
- Caps on nozzle openings block foreign materials that could possibly clog the nozzle and prevent or diminish the system discharge.
- The automatic discharge nature of the FSS eliminates the rail boom lift operator's involvement in discharging the system manually, allowing him to exit the machine safely and promptly.
- 1 manual actuator, mounted at ground level, is also included as a back-up and for ease of system activation.
- A 1.5-gallon tank comes complete with liquid 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 rail boom lift.
- 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.
- Hydraulic hose is used for the supply lines that distribute the liquid chemical agent, as well as 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.
- The control unit uses LED lights, buttons and a horn, to monitor the FSS and keep the operator informed of the system's status.



For Fire Suppression Solutions,

GO WITH THE FLO!

FLO Components Ltd., 50 Admiral Blvd., Mississauga, ON, L5T 2W1
1.800.668.5458 • sales@flocomponents.com • www.flocomponents.com