



CASE STUDY: AUTOMATIC LUBRICATION & FIRE SUPPRESSION SYSTEMS

APPLICATION: TOP HAMMER DRILL RIG

For several years, FLO Components supplied this customer with Automatic Lubrication Systems (ALS) built using Lincoln/SKF components. In 2023, FLO expanded its capabilities by becoming an authorized Systems House for AFEX Vehicle Fire Suppression Systems (FSS). Recognizing the advantages of a streamlined approach, the customer chose FLO as its single-source provider for the installation and support of both ALS and FSS solutions.

THE FLO SOLUTION

By partnering with a single supplier for both systems, the customer realized several key benefits:

1. FLO having the capabilities to install both systems made it a “1-stop shop”, with 1 purchase order issued to 1 vendor for both the ALS and FSS system. It meant less paperwork and less process. It meant 1 scheduled install for both systems making it easier to coordinate the installation of 2 separate systems and easier to accommodate their shop timetable. Previously, if they wanted both systems, they would deal with 2 different vendors, which would double their personnel time and hassle created by coordinating the scheduled installation of 2 systems within their own shop, and the amount of paperwork required to get both suppliers to meet site-specific health & safety requirements and working on the machines.
2. Machines are getting smaller, leaving less available real estate (such as decks, fenders, etc.) for mounting pumps, tanks, nozzles, metering valves and lines. With multiple vendors, it becomes a race to be the first to install on the machine to not have to worry about insufficient space due to the other vendor's system already taking up all the real estate. As the installer of both systems, FLO made the arrangements needed to accommodate both systems and provide a cleaner install. FLO technicians worked closely with the customer to custom-fabricate brackets onsite, to mount the larger components in locations where they wouldn't obstruct equipment operation, access doors or maintenance procedures.
3. The customer got the machine into service quicker because they weren't waiting for a second vendor to schedule their people to do the install, or spending time having to coordinate that to begin with. Installation time was also reduced by eliminating duplication of work, such as going into the electrical box once and making both connections at the same time (not having to disassemble/reassemble panels in the cab multiple times). This also reduced the risk of potential damage.



Automatic Lubrication System Features:

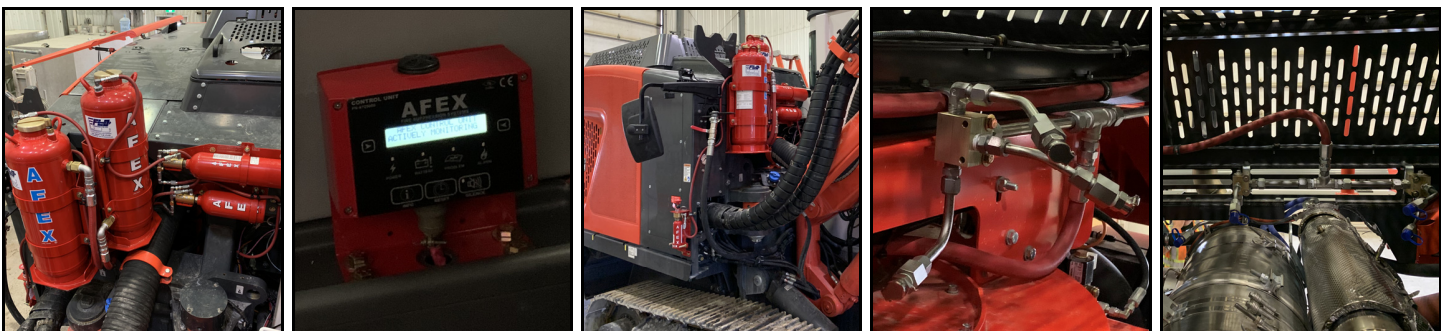
- The ALS system consists of a Lincoln Quicklub® 24 VDC Series 203 pump with a 2L grease reservoir, positive displacement grease metering valves, and fittings, tubing and hose with standard re-usable hydraulic hose ends and adapters.
- The system is controlled by the machine ignition switch, with no additional electrical, air or hydraulic hook-ups required, giving the installation long-term dependability.



- It includes an integrated timer with adjustable “Off” time up to 15 hours and “On” time of 2-30 minutes, for trouble-free operation and maximum flexibility to quickly adjust grease frequency to suit any location, environment or requirement.
- Grease delivery to bearings is monitored by the visual cycle indicator pin (CIP) on the master grease metering valve. When the system cycles, the CIP shuttles back and forth, the wiper/paddle rotates in the reservoir and a pressure gauge shows operating pressure, allowing the operator to easily and quickly monitor system performance.
- Each valve assembly is supplied with a back-up remote, manual, high-pressure lubrication fitting servicing each point. In the unlikely event of a system shut-down due to a blocked line, the operator can quickly and easily trouble-shoot and identify the problem fitting and take immediate action. If the vehicle can't be taken out of operation for repair just then, the remaining valves can still be greased through the back-up grease fittings. Also, individual lines can be primed/flushed without having to disturb or remove any fittings. Valve assemblies are modular in design, so servicing can be done quickly without having to disturb or remove any grease lines.
- An in-line high-pressure grease filter with a cleanable and re-usable filter screen protects against contamination.
- The FLO system is suitable for most off-the-shelf North American greases and will handle lubricants up to an NLGI #2 rating to -25 °C or -13 °F, eliminating the requirement for any “specialized” grease.

Vehicle 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. An additional liquid chemical agent is also used to rapidly cool super-heated temperatures. This acts as a dual system for maximum coverage and protection. The liquid agent uses a 5-gal tank.
- The system will automatically discharge when one of the heat detection devices causes the control panel to discharge the electric actuator. This eliminates the machine operator's involvement in discharging the system manually, allowing him to exit the machine safely and promptly. Manual actuators outside of the cab located in specific areas for ease of activation from ground level are also included.
- Tanks come 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 machine.
- 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. 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.



FLO RESULTS

The customer likes the convenience of one phone number. If they need one system or the other, they call FLO. If they have an issue with one system or the other, they call FLO. They don't have to worry about “who do I have to call to get this fixed”. They just call FLO.

**For Total Lube Solutions,
GO WITH THE FLO!**

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