

TECHNICAL BULLETIN

1202509

TITLE: BEST PRACTICES FOR BACKFLUSHING FIRE PUMPS

DATE: DECEMBER 30, 2003

Operating a fire pump from contaminated water sources places the pump at risk to becoming clogged with debris. Such a situation can result in noise, vibration, and reduced pump capacity. Oftentimes, this debris can be driven out of the pump through a process of backflushing by flowing water backwards through the discharge and out the suction. Such operations can cause damage to some of the associated drive systems on the truck, so it is important to follow these recommended procedures.

During backflushing, the pump impeller acts as a turbine and can place a reverse load on the driveshaft that ordinarily drives it, and can cause it to spin backwards in certain cases. Allison Transmission, Muncie and Chelsea have all stated that this condition should be avoided.

For Darley midship pumps, placing the pump in road gear before backflushing will lock the driveline in place, but allow the pump transmission gears to spin and lubricate their bearings.

For Darley front mounted pumps, disengaging the pump clutch will eliminate any chance that the pump can reverse load the engine during backflushing operations.

For transmission-mounted PTO driven pumps, the driveshaft between the PTO and the pump should be removed to prevent the PTO from being driven backwards, which can cause it to run without lubrication. When the driveline is removed, it is important to stay clear of the pump input shaft which will rotate at considerable speed during backflushing operations.

At low pressures and flow rates, an engine mounted pump will not drive the engine backwards during backflushing. It is important to monitor the engine, and should it begin to spin, backflushing operations should be discontinued. Gasoline driven engines, with a lower compression ratio than diesel engines, are at greater risk of being driven backwards.

Many pumps are built with a discharge check valve installed to facilitate priming. Such pumps must have this check valve removed before backflushing operations can begin. Similarly, two stage pumps are equipped with multiple check valves and cannot be easily backflushed thoroughly, unless all check valves are removed.

Following these procedures will protect your equipment from accelerated wear that may otherwise occur during backflushing operations.

Please direct any questions regarding this bulletin to our engineering office at 800-634-7812 or 715-726-2650.

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