

Date: March 21, 2011

Notice: Clarke Service Bulletin – CSB 004

Service Bulletin

Engine Failure Due To Lack of Cooling Loop Water Flow

This bulletin is to inform you of severe engine failures and the potential risk of operator injury due to the lack of raw water flow through the engine heat exchanger.

A lack of proper cooling loop water flow can cause catastrophic engine failures that will manifest in several ways including the coolant not being contained within the cooling system. An engine started and operated without cooling loop water flow will experience a rapid increase in cooling system pressure caused by a rapid increase in coolant temperature, fluid expansion and phase change (steam) that may not be sufficiently relieved by the cooling system pressure cap vent. The cooling system and pressure cap are designed for operating temperatures and pressures in normal operation, but are not designed for the extreme temperatures and pressures caused in the abnormal condition of lack of cooling loop water flow. Below is a picture of an engine cooling system hose that failed as a result of an engine started and operated with NO raw water flow, which presents a serious safety risk to the operator(s). Refer to section 1.2 of the Clarke Operation Manual regarding “Safety / Cautions / Warnings”.





Fire Protection Products, Inc.

It should be noted that some fire pump controllers will allow for some engines to be started manually by pushing either of the crank buttons on the fire pump controller while the controller remains in automatic mode. In this scenario, the cooling loop solenoid valve will NOT open automatically and the engine heat exchanger will receive no cooling loop raw water flow without manual intervention of the operator. Also, in this scenario, the engine may not be able to be shutdown from the fire pump controller as the controller does not recognize the engine is running.

To ensure proper engine performance, make sure that the system is installed and operated according to NFPA 20, and maintained according to the manufacture’s installation and operation manuals and NFPA 25.

Additionally, no matter what method is used to start and run an engine, cooling loop water flow must be verified each and every time the engine is started. Refer to section 2.6 of the Clarke Operation Manual for “Starting/Stopping the Engine”.

If you have any questions regarding this service bulletin, please call or e-mail customer support.

Sincerely yours,

John Whitney

John T. Whitney III
Parts and Service Manager
+1 513-475-3414
jowhitney@clarkefire.com