

Bulletin 006/2012

Subject: Caterpillar AD55B Fuel Transfer Pump De-isolation after Service Work has been performed on Fuel System.

Affected Product: AD55B Underground Articulated Truck Serial Prefix: JNW

Risks identified:

1. Fuel leakage caused by overpressure, if the fuel return isolation valve is left shut following a service task.
2. Fire may result if fuel contacts hot engine components.

Problem Overview

The fuel system in this machine contains a manually operated isolation ball valve in the fuel return line. The valve is normally open for engine operation, and is closed for certain service tasks.

A problem occurs if this valve is left shut and the engine is started. This problem does not normally occur until the machine has returned to work.

When the valve is shut, the system pressure created by the fuel transfer pump can exceed the pressure capability of the fuel system, resulting in shaft seal rupture, and external spray leakage from the fuel pump "tell-tale" hole.

Initially there is no relief path for the pressurised fuel until the shaft seal or transfer pump gear fails. If the gear for the fuel transfer pump fails and falls into the gear train, severe engine damage will result. If a seal failure occurs first, the resulting fuel leakage may spray on hot components, causing a fire.

Although the engine management system computer constantly monitors the fuel system pressure, the high fuel pressure or leak is not visible via the machine instrumentation or readily detectable by the machine operator. When the fuel pressure exceeds the high fuel pressure warning trip point, a warning lamp illuminates on the machine operator's display, but the detail of the problem [the abnormal pressure condition] is not able to be seen by the machine operator, and the engine operation may otherwise appear to be normal.

What to Do

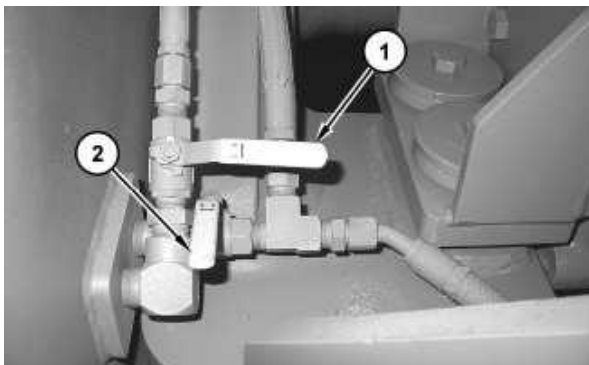
When the machine is serviced a lockout/tag out procedure should be used by maintenance staff to record isolations made on the machine's systems. On completion of the service task, the lockout/tag out procedure steps should be reversed to ensure the system configuration is correct before starting the engine. These physical checks should include sighting the fuel system isolation valves to ensure they are in the open position.

Inspection Procedure:

Perform the following inspection with the engine stopped and secured from starting in accordance with site operational procedures. Allow the engine to cool so that parts can be safely inspected and handled. Remove guards, covers and components as necessary to allow thorough inspection as per procedure below.

Perform the following:

Ensure all valves on the fuel system that are required to be open for engine operation are open after a service task is completed. Refer illustrations below.



Left side of machine

Right side of machine

1. Return valve - LHS 2. Supply valve - LHS 3. Supply valve-RHS

NB. All valves shown in closed position

Do not operate the machine until any defects identified in this inspection task are corrected.

Contact Details:

If further information is required in regard to this bulletin, contact your nearest Hastings Deering branch on 131 228 and ask to speak to a Service Advisor.

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