

## Bulletin 01/2015

**Subject:** Engine fuel system hoses - D10T and D11T Track Type Tractors

**Affected Product:** Current field population of D10T<sup>1</sup> and D11T<sup>1</sup>

**Identified Risks:** Fuel leakage and potential fire hazard from chafed flexible hoses. This bulletin supersedes the previous bulletin on this subject published in April 2012, GESB 01/2012

### Problem Overview

The flexible fuel lines fitted in the engine compartment of the affected product are subject to movement and abrasive wear before full engine life is achieved. Fuel leakage and fire may occur, due to improper assembly and routing, or deterioration of the rubber grommets securing the lines. Figure 1 shows the location of the affected lines.

### Product Problem History and Current Status

There have been several improvements made to extend the life of the engine flexible fuel lines since the introduction of the D10T and D11T. These include updated fittings, hoses, an additional mounting bracket, and improved rubber grommets that resist hardening when subjected to sustained high engine compartment temperatures. The introduction of these improved grommets, together with greater emphasis on field installation quality, 500-hour inspections<sup>2</sup> and recommended replacement of grommets and hoses at 6000 hours, has seen a significant decrease in the reporting of fuel line damage and fires. Abrasive wear may occur between the outer layer of the flexible fuel lines and the improved rubber grommets between 6500 to 7000 hours. Refer figure 3.

### New Information

Caterpillar recently announced the release of improved fuel line arrangements for D10T and D11T Tractors. These improved fuel line arrangements are significantly different from the existing arrangement and incorporate a large number of new parts. These improved parts are effective in production, and Caterpillar have released programs to upgrade affected products in the field. There are several different kits to suit different models and serial number ranges.

Due to the large worldwide field population of affected machines, and the corresponding large demand for parts, Hastings Deering estimate it may take up to 12 months to upgrade all machines in its dealership territory. As the parts supply allows, Hastings Deering personnel will contact customers to discuss the scheduling of this upgrade.

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<sup>1</sup> This bulletin also applies to earlier D10 and D11 Tractors retrofitted with C27 or C32 engines.

<sup>2</sup> Refer to the latest version of the Operation and Maintenance Manual (O&MM). Refer to WebSIS or ask your Dealer Support Representative to ensure you are using the latest version.

## Management Actions Required – Existing fuel line arrangement<sup>3</sup>

Daily: Before starting the machine, inspect the machine and engine compartment for fluid leaks or signs of fluid loss in accordance with the current Caterpillar Operation and Maintenance Manual (O&MM) task: 'Daily Inspection' (refer Operation Section).

Every 500-service hours: Inspect and replace hoses, hose clamps and grommets in accordance with this bulletin, the current Caterpillar O&MM task: 'Hoses and Clamps - Inspect/Replace', and the relevant Service Manual procedures. Ensure that the correct parts, including grommets, are installed as per current Caterpillar WebSIS parts information.

Scheduled Replacement: Based on site experience gained from the scheduled 500-hour inspections, a replacement interval should be determined for all engine flexible fuel lines and rubber grommets. Based on site and customer feedback, Hastings Deering recommends that the maximum interval between the scheduled replacement of flexible lines and grommets should be 6000 hours. Replacement hoses must be purchased from a Caterpillar Dealer as complete assemblies of the correct part number. **Do not** use fabricated fuel hoses – even those manufactured using genuine Caterpillar fittings and hoses.

## 500-Hour Inspection Procedure – Existing fuel line arrangement<sup>3</sup>

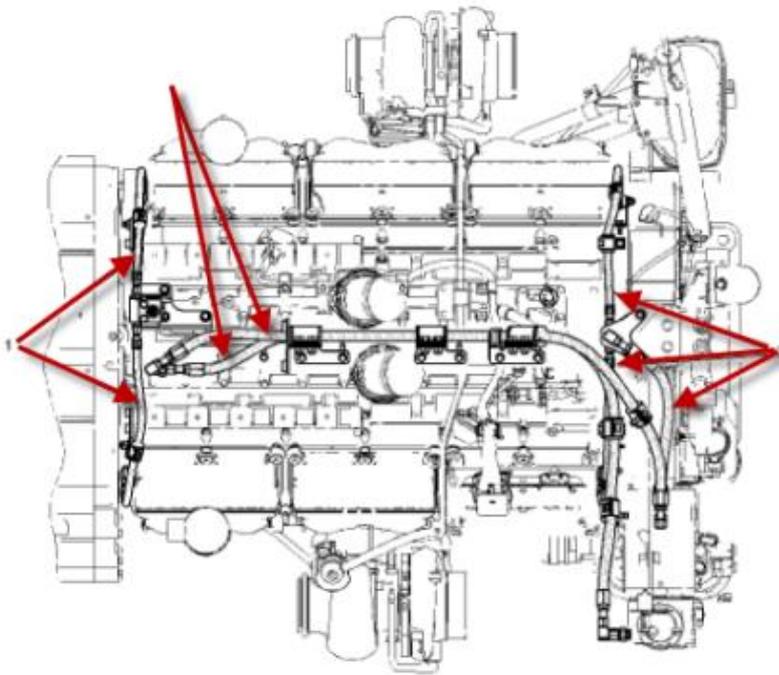
Perform the following inspection with the engine stopped and secured from starting in accordance with site operational procedures. Allow the engine to cool to allow safe handling and inspection of hoses and clamps. Remove guards, covers and components as necessary to allow thorough inspection as per procedure below.

Inspect all hoses in the engine compartment to ensure they are correctly routed, and secured, using the correct parts.

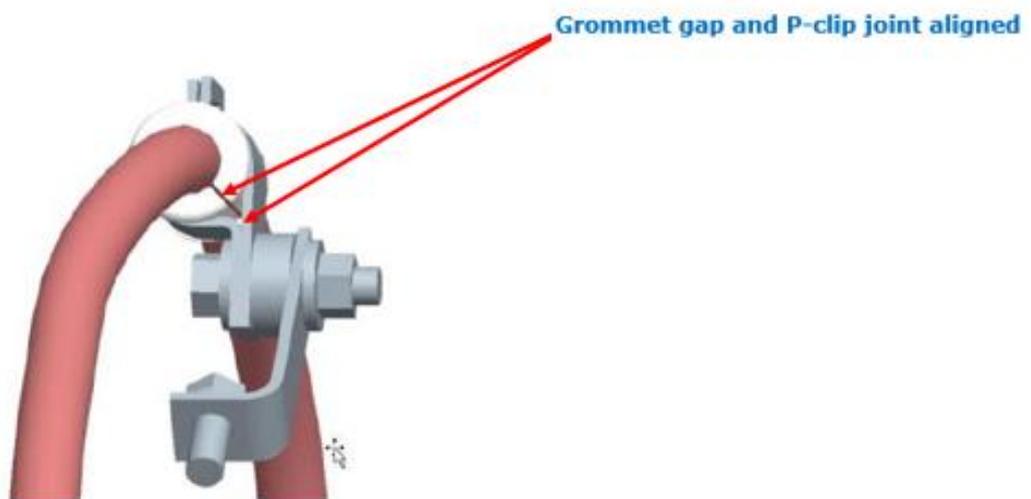
- Look for signs of fluid leaks, hose chafing, contact marks, and rubbing that may indicate excessive hose movement or poor installation.
- All P-clips must have the rubber grommets fitted with the opening in each grommet aligned with the joint in the P-clip. Refer figure 2.
- The hose should not have clearance in the grommet – move the hose to check for clearance. Movement is usually the result of wear on the internal diameter of grommet and external surface of the hose. Refer figure 3. Replace worn, hardened or damaged hoses and grommets. **NB** Dirt and other contaminants can accelerate the wear process, and cause corrosion of fittings.
- Ensure the hose does not contact anything other than the rubber grommet in the P-clips.

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<sup>3</sup> All machines require regular inspections and maintenance as per the current O&MM. This requirement includes fuel, air, oil and water lines. The new fuel line arrangements for D10T and D11T will require less maintenance but will still be subject to regular inspection and maintenance as per the Operation and Maintenance Manual (O&MM).



**Figure 1. Fuel Line Identification**



**Figure 2. Ensure correct alignment between grommet opening and P-clip joint**



**Figure 3. These photos show wear to the corresponding surfaces of a hose and grommet that have been in service for 6500 hours. Accelerated wear occurs from the resulting clearance. In some instances, abrasive material can enter this clearance and further accelerate wear.**

**Correct any defects identified during this inspection procedure before operating the machine.**

**Do not use any type of hose sleeving, non-standard clamps and brackets, or zip ties, on D10T and D11T fuel line hoses.**

### Contact Details

If further information is required about this bulletin, contact your Mining Support or Product Support Representative on 131 228.

*This bulletin is to inform you of the recommendations of the supplier in respect of issues dealt with in the bulletin and should not be used as specific advice in respect of any particular events. Advice from a qualified repairer should be sought in respect of any particular events and Hastings Deering (Australia) Limited accepts no responsibility for any loss or damage occasioned by a party using this general bulletin.*