SERVICE BULLETIN

SB1237

ADDRESSEES	**:** Owners and operators of coaches listed under 'Application'
VEHICLE MODEL	**:** T2145, C2045
VEHICLE SECTION	**:** Complete vehicle - general
BULLETIN TYPE	**:** Service Information
DATE	**:** May 10, 2010
SUBJECT	**: Caterpillar maintenance schedule updates**
TERMS & CONDITIONS	**:** This document does not entitle to any reimbursement.

APPLICATION:

This Service Bulletin is applicable to Van Hool T- and C-model coaches equipped with a Caterpillar C13 KCB Series (EPA 2004) or LEE Series (EPA 2007) engine.

Model	Engine	VIN
T2145	Caterpillar C13 KCB Series (EPA 2004)	44801 → 44855
	Caterpillar C13 LEE Series (EPA 2007)	44856 → 44857
C2045	Caterpillar C13 KCB Series (EPA 2004)	47001 → 47527
	Caterpillar C13 LEE Series (EPA 2007)	47528 → 47628

NOTE: The engine series is mentioned on the engine information plate. Please refer to the vehicle Maintenance Manual for the location of this plate.

DESCRIPTION:

NOTE: The mileages quoted below have been revised to comply with the Van Hool standard maintenance schedule intervals. The mileages quoted in the Caterpillar Operation and Maintenance Manual are actually higher.

Caterpillar have informed Van Hool of the following:

Caterpillar has included additional maintenance information in the Operation and Maintenance Manuals for C13 engines.

1. LEE series engines (EPA 2007)

NOTE: When auxiliary devices, accessories, or consumables (filters, additives, catalysts, etc) which are made by other manufacturers are used on Caterpillar products, the Caterpillar warranty is not affected simply because of such use.

CAUTION: However, failures that result from the installation or use of other manufacturer's devices, accessories, or consumables are NOT Caterpillar defects. Therefore, the defects are NOT covered under the Caterpillar warranty.

- The Open Crankcase Ventilation (OCV) filter should be replaced every 75,000 miles.

  NOTE: This filter is new for LEE Series engines. Most customers do not know or do not remember to change the OCV filter. However, other engine manufactures have a filter too, so customers need to become familiar with changing them. If a customer idles his coach a lot, or if the coach operates in a high humidity area, or doesn't get up to operating temperature very often, then it may be necessary to change the filter more often. Most times, a "high crankcase pressure fault code" is a plugged (overdue for maintenance) OCV filter.

- The Aftertreatment Regeneration Device (ARD) spark plug should be replaced every 75,000 miles.

  NOTE: The Operation and Maintenance Manual says to clean or replace the spark plug at the above-mentioned interval. During cleaning the tip is prone to bending, then it does not function properly any longer. Over time this may result in a failure to regenerate, a fault code, derate, and engine shutdown. The best practice is to replace.

- The LEE Series engine Primary Fuel Filter should have a 10 micron and 180 gal/hr flow requirement. The LEE Series engine Secondary Fuel Filter should have a 4 micron and 180 gal/hr flow requirement.

  NOTE: There are very few filter manufactures that sell a true 4 and 10 micron filter that will flow anywhere near 180 gal of fuel /hr.
  The engine gets fuel priority over the regeneration system.
  As the filter begins to fill up with particles, fuel flow can become restricted and the engine gets fuel before the regeneration system. This results in a failure to regenerate.
  Filter manufacturers can provide customers with the flow rating and micron rating for their filters. This quality of filter will also save injectors from debris and failures.

2. KCB and LEE series engines (EPA 2004 and EPA 2007)

NOTE: This information applies only to KCB and LEE series engines that are coupled with transmissions that use single plate clutches, in this case the ZF-AS Tronic.

Model	Engine	Transmission	VIN
T2145	Caterpillar C13 KCB Series	ZF-AS Tronic	44806 → 44825, 44829 → 44835, 44839 → 44846
C2045	Caterpillar C13 KCB Series	ZF-AS Tronic	47001 → 47040, 47066 → 47150, 47157 → 47178, 47184 → 47214, 47225 → 47299, 47342 → 47475, 47487 → 47498
C2045	Caterpillar C13 LEE Series	ZF-AS Tronic	47528 → 47534, 47555 → 47560, 47591, 47597 → 47602, 47605 → 47620

As a result of the added load the clutch assembly places on the crankshaft thrust bearings, Caterpillar recommend, as a maintenance schedule item, measuring the crankshaft end-play at every other oil change in order to reduce the risk of unscheduled downtime.

NOTE: The check can be performed in 15 minutes or less.

Please refer to the procedure further in this Bulletin when checking crank-shaft end-play during the afore-mentioned service intervals.

Description complete.

PROCEDURE:

To check the Caterpillar C13 crankshaft end-play (Van Hool T2145 and C2045)

1. General:

- Job technician's qualifications/expertise: engine and transmission.
- For more information refer to the service literature that comes with the coach.

2. Special tools, equipment or services:

- This job requires the use of a dial gauge.

3. Preparations:

- Park the coach on a level-surfaced service pit with the front wheels straight.
  When using portable post lifts instead of a service pit, lower the suspension first.
  Apply the parking brake and shut down the engine.
- Switch off all systems and turn off the battery master switch.
- Install a "DO NOT OPERATE" warning message on the instrument panel.

CAUTION: When working in the engine compartment, turn the starter motor inhibitor switch to "starter motor disabled" for the steps, which do not require engine operation. Observe safe shop practices at all times.

4. To check the crankshaft end-play:

NOTE: The current specification for crankshaft end-play is 0.1 mm (0.00394 inch) to 0.5 mm (0.01969 inch.

1) Bleed the system pressure from the clutch actuator. This is necessary to zero out the crankshaft and ensure an accurate reading of the crankshaft end-play.
   Proceed as follows:

   By means of the drain valve, bleed the air pressure from the "Astronic" auxiliaries tank supplying the clutch servo (for location of the air tanks, refer to the Maintenance Manual).
   Locate the clutch servo (Figure 1).
   Disconnect the air supply line from the clutch servo (1, Figure 1).

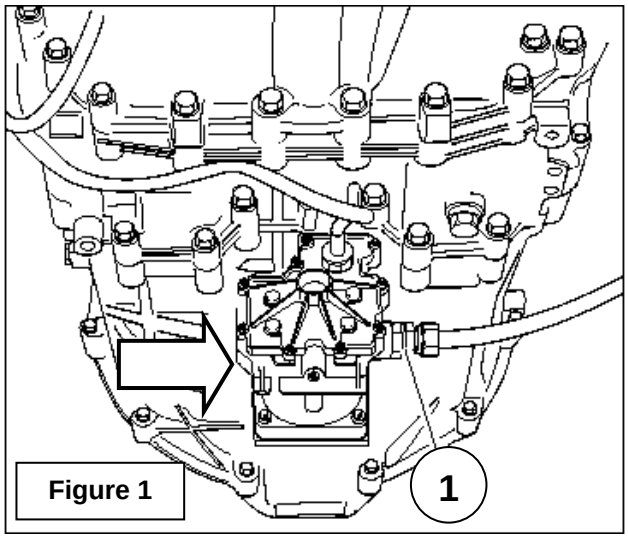


Figure 1

Bleed the clutch actuator by loosening the M12 x 1.5 bolt (1, Figure 2).

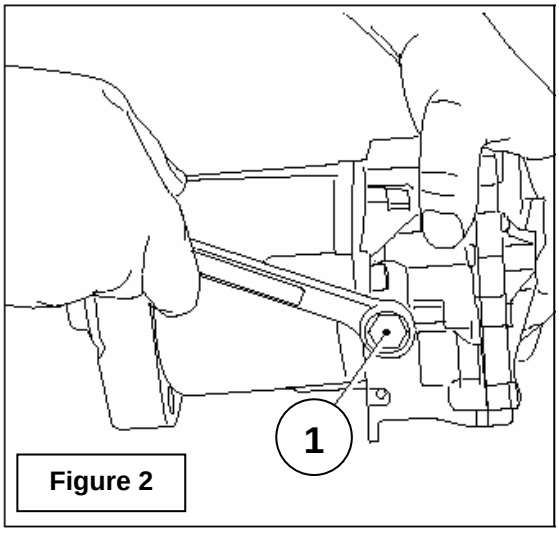


Figure 2

2) Place a dial gauge against the crankshaft damper pulley in order to check the crankshaft end-play.
   Zero the dial gauge in order to get an accurate reading.

3) Using a medium-sized pry bar and a wood block between the pry bar and vibration damper, move the crankshaft away from the transmission and observe the dial gauge.

   NOTE: The block of wood is used to prevent the vibration damper from getting punctured.

4) To repeat and confirm the reading place a wood block in the center of the crankshaft pulley closest to the rear bumper.
   This block should be long enough to leave a gap that allows fitting a medium-sized pry bar between it and the bumper back-up beam.
   Move the crankshaft in the direction of the transmission.
   This moves all end-play to one side of the main bearing caps.
   Remove the wood block.
   Repeat step three of this procedure.

5) Check that the crankshaft end-play is within specifications.
   If the crankshaft end-play is greater than the maximum specification (0.5 mm/0.01969 inch), please contact ABC Customer Care & Parts Source or your local authorized Caterpillar Dealer for guidance. The thrust bearings may need to be replaced.

6) Reconnect and re-pressurize the clutch actuator.

Procedure complete.

INFORMATION HANDLING:

Important supplements to and modifications of the technical information not yet included in the manual, are communicated by means of Service Bulletins.
File the Service Bulletins at the back of your manual, in numerical order.
To make sure that you will be reminded of the Bulletins that have appeared in the meantime while paging the manual, mark the pages concerned by hand with the Service Bulletin number.