SERVICE BULLETIN No.1098

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COACH MODEL	**:** All coaches equipped with Detroit Diesel engine
BULLETIN TYPE	**:** Service Information
MANUAL & SECTION	**:** Not applicable
PARTS BOOK REVISION	**:** No
DATE	**:** February 6th, 2002
SUBJECT	**: Detroit Diesel accessory drive specification change**
TERMS & CONDITIONS	**:** No claims will be accepted with reference to this Bulletin.

APPLICATION:

- The parts specification change subject of this Bulletin is applicable to coaches equipped with a Detroit Diesel engine of which the engine accessory drive assembly needs replacing.
- The modification subject of this Bulletin is applicable to C2045 units #45712 → #45819.

DESCRIPTION:

Detroit Diesel have made a change to the accessory drive assembly to increase the bearing length and force feed oil to the bearing. An improved seal was also included in the change.
As a result, the shaft length of the pulley assembly increased by 1/4 inch (6.5 mm). This increase in length caused clearance problems with the cooling fan belt installation (see Figure 2).
As a *temporary* countermeasure, Van Hool have, on a number of engines, shortened the shaft by removing the self locking nut, cutting ¼ inch off the shaft and installing an M24 flat nut using Loctite 243 as thread locking adhesive. The procedure in this Bulletin shows how production have modified the shaft to obtain sufficient drive belt clearance.
As a *permanent* countermeasure, Detroit Diesel have now introduced a new accessory drive assembly with a shortened shaft to provide the required clearance, and a left hand threaded M20 nut to secure the pulley. This feature avoids the necessity of a locking feature on the nut, as opposed to the right hand threaded nut on the original shaft, since the pulley will turn in the direction to cause the nut to tighten.
Attached to this Bulletin is a drawing showing both the old and the new design.
The new accessory drive assembly has been cut into production as from C2045 unit #45820.

Service personnel: please read, initial and circulate.

Service Manager	Parts Manager	Warranty Administrator	Workshop Foreman	Service Technician

PARTS:

New parts

Part No.	Description
DD #23529508	Accessory drive assembly w/ ¼ inch shorter shaft
DD #23529509	Shaft for DD #23529508, M20 left hand thread
DD #23529510	Nut, M20, left hand thread

Old parts

Part No.	Description
DD #23524000	Accessory drive assembly w/ lengthened shaft
DD #23523973	Shaft for DD #23524000, M24 right hand thread
DD #11509584	Self-locking nut, M24 right hand thread

- Old and new parts are interchangeable.
- New parts will be offered as service replacements for application on Van Hool units only.
- Parts may be purchased through Detroit Diesel service outlets.
- Always use genuine maintenance products and parts. Do not accept imitations.
- Parts disposition: discard according to applicable environmental regulations.

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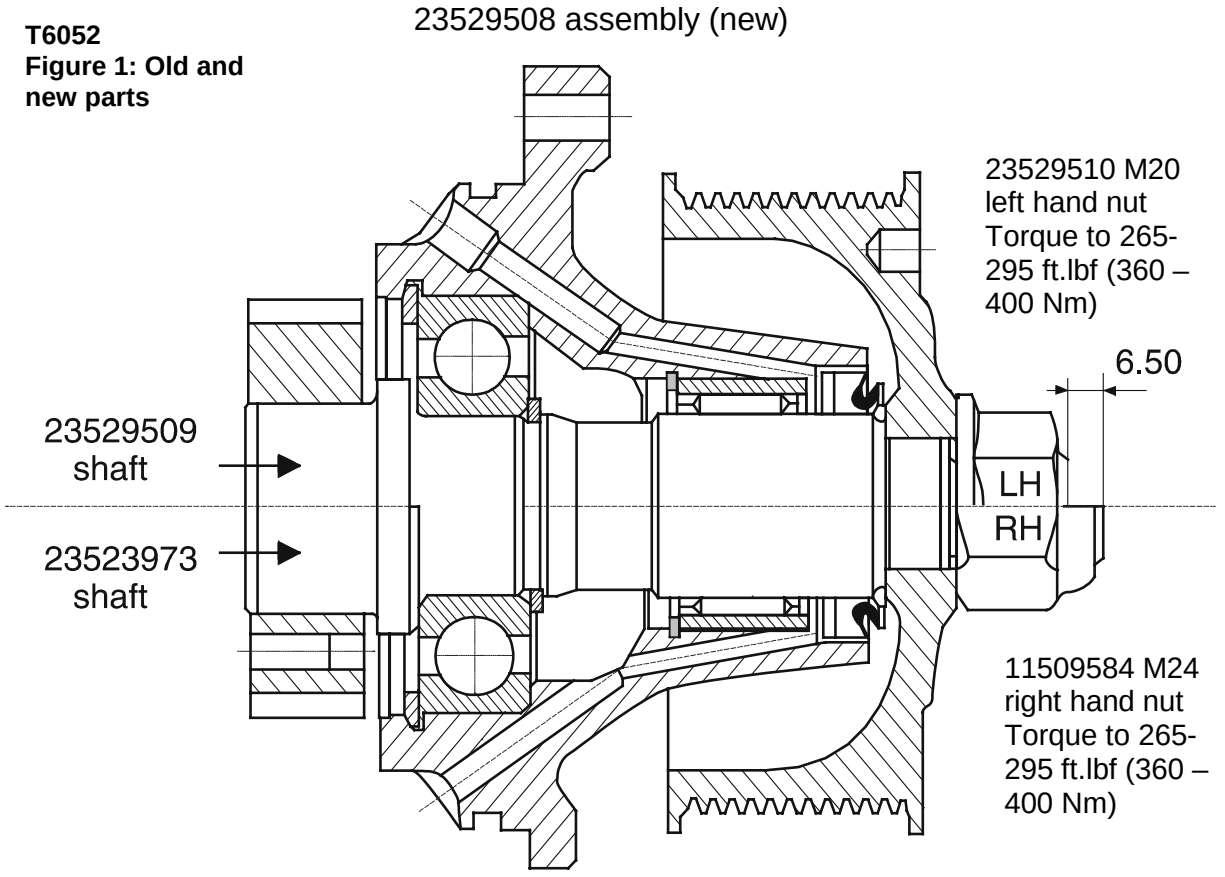
Figure 1: Old and new parts



PROCEDURE:

1. General:

- The procedure below has been used as a temporary countermeasure only.

2. Special tools, equipment or services:

- This job requires the use of a torque wrench with a range up to 300 ft.lbf.

3. Preparations:

- Park the coach on a level surface, apply the parking brake and shut down the engine.
- Switch off all systems and turn off the battery master switch.
- Put a "DO NOT OPERATE" tag on the instrument panel.
- Read the entire procedure before beginning to work.

CAUTION: Observe safe shop practices at all times.

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4. To modify Detroit Diesel 60 series accessory drive shaft #23523973:

To provide proper clearance between accessory drive assembly #23524000 (see Figure 2) and the cooling fan drive belts, shaft #23523973 needs to be shortened by ¼ inch. Proceed as follows:

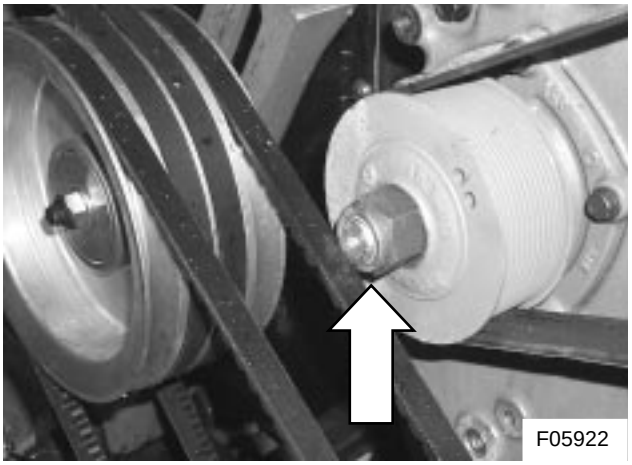

Figure 2: DD2352400 Assembly clearance problems

1) Using an air impact wrench, undo and remove the OEM fitted long self-locking nut (see Figure 2) securing the accessory drive pulley to the shaft.

2) With a suitable tool, lift the multi-V belt tensioner and remove the drive belt (see Figure 3). Take note of the routing and the direction of travel of the belt.

CAUTION: Drive belts which have been run-in (10 to 15 minutes) should be considered used and should be reinstalled in the same way they have been taken off the pulleys.

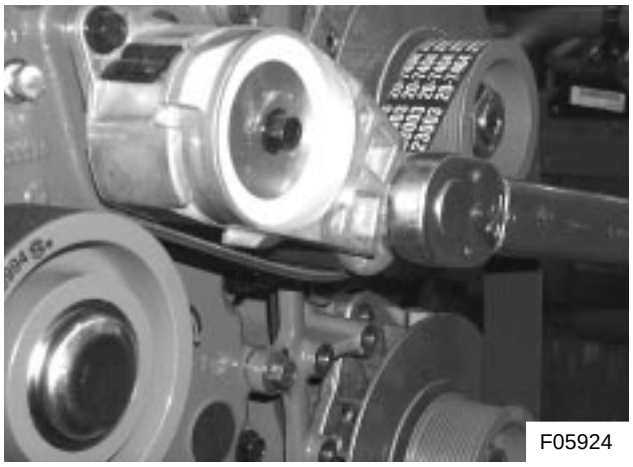
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Figure 3: Lifting the belt tensioner

3) Run a M24x3 nut VH 660204001 up the threaded part of the shaft until it is flush with the pulley. Secure hand tight.

4) With a hacksaw, and using the nut as a guide, cut-off the protruding threaded part (see Figure 4) so that the shaft is flush with the nut (see Figure 5). Dress with a file.

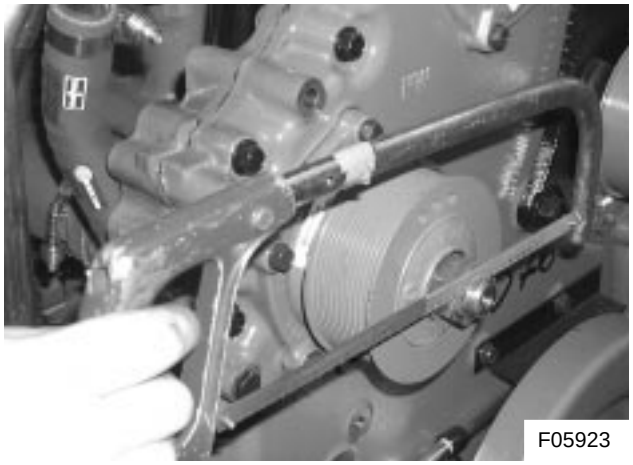
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Figure 4: Cutting the shaft

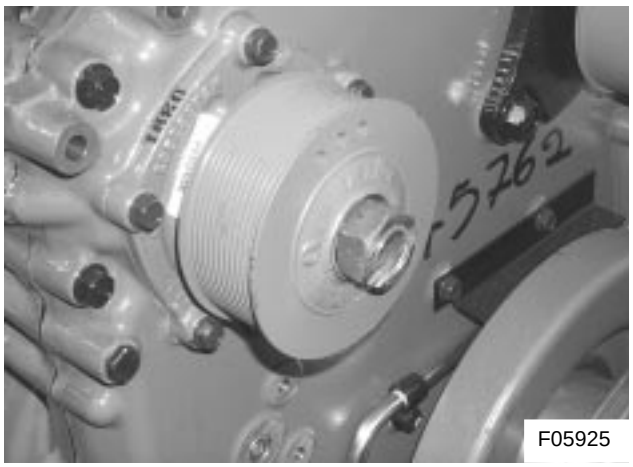
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Figure 5: Shaft flush with the nut

5) Undo, remove and discard the nut. Remove any debris from the shaft with a clean cloth. Dowse the thread with cleaner to remove any grease and dirt. Allow the cleaner to evaporate until dry and apply some thread locking adhesive Loctite 243 (see Figures 6, 7 and 8).

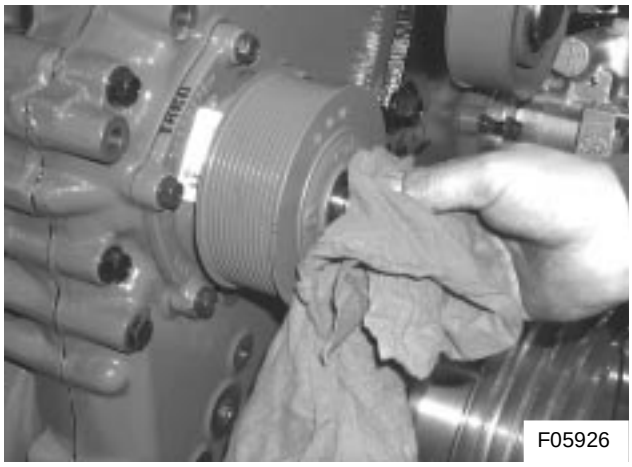

Figure 6: Removing debris with a clean cloth

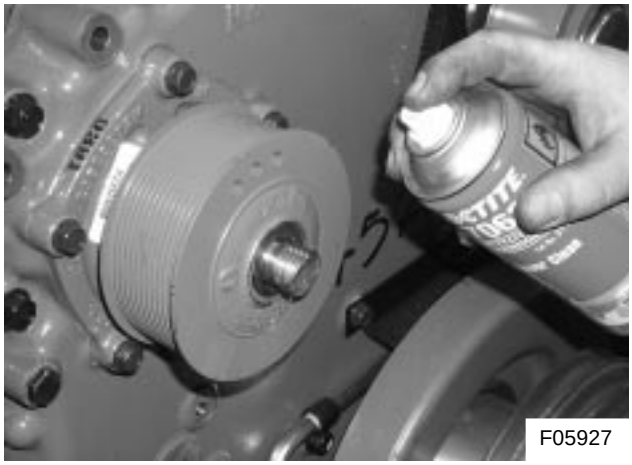

Figure 7: Degreasing the thread

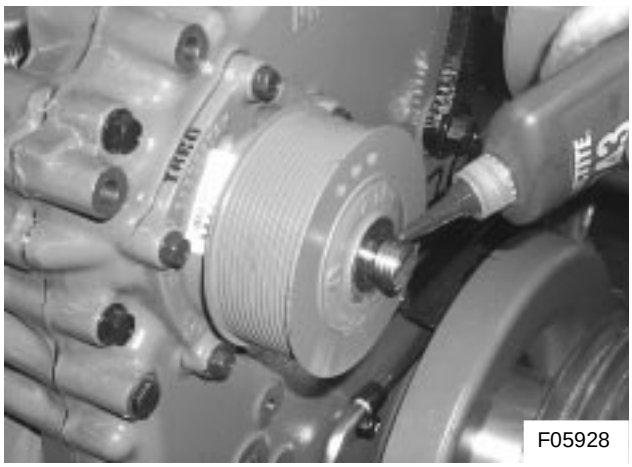

Figure 8: Applying thread locking adhesive

6) Run a new nut M24x3 VH 660204001 up the threaded part of the shaft (see Figure 9).

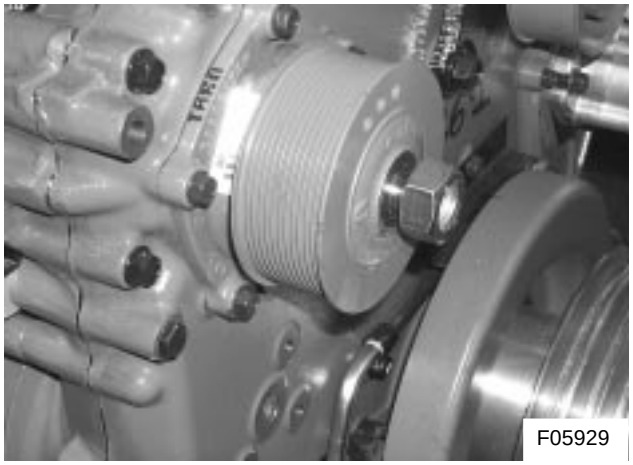

Figure 9: Running up nut VH 660204001

7) Remove the plug giving access to the starter motor ring gear (see Figure 10).

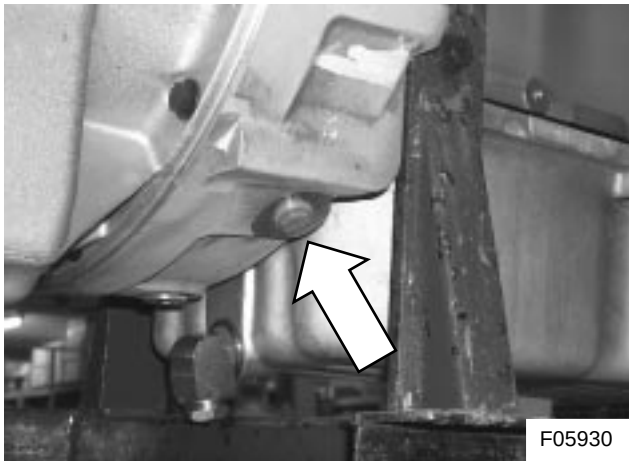

Figure 10: Location of ring gear plug

8) Have an assistant engage the teeth of the starter motor ring gear with a screwdriver to prevent the flywheel from turning (see Figure 11).

Figure 11: Locking the ring gear

9) Tighten the pulley nut to a torque of 295 ft.lbf (400 Nm) as shown in Figure 12.

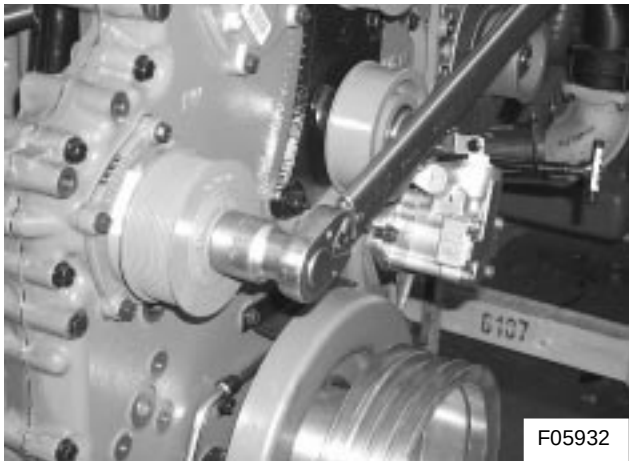

Figure 12: Torqueing pulley retaining nut

10) Paint the pulley black and apply a blob of green paint to indicate that the shaft has been shortened (see Figure 13). Reinstall the drive belt.

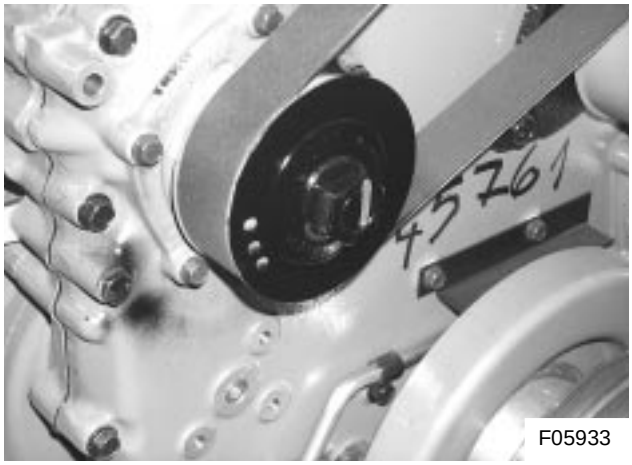

Figure 13: Pulley markings

11) Remove all tools and reinstall the starter motor ring gear plug.

Procedure complete.

SERVICE INFORMATION:

Service Bulletins are issued to supplement or supersede information in the Van Hool manuals. Note Service Bulletin number, date and subject on the register at the end of the relevant chapter(s). File Service Bulletin separately for future reference.

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