

TECHNICAL INFORMATION



Diagnostic Guide for Engine Drive Belt Noise

No: 12/02/04/NAS
FGN LT303
Ref:
Issue: 2
Date: 21 December 2004

AFFECTED VEHICLE RANGE:

Discovery Series II (LT) 3A771055 - 4A870624

SITUATION:

NOISE FROM THE FRONT OF THE ENGINE

Pulley alignment and related issues can result in noises originating in the serpentine belt and accessory drive system.

RESOLUTION:

DETERMINE SOURCE OF NOISE FOR PROPER REPAIR

Upon customer complaint of engine belt or accessory drive noises, follow the diagnostic procedures in this bulletin to isolate the root cause and provide the proper repair procedure.

PARTS INFORMATION:

Information Only

DDW WARRANTY CLAIMS:

Information Only

*Normal warranty policy and procedures apply.
Material allowance is included in labor operation.*

REPAIR PROCEDURE

DETERMINE SOURCE OF NOISE



WARNING: When working with running engines in the vicinity of rotating pulleys and other moving parts, fingers, hair, jewelry, tools and loose clothing must be kept clear of moving components.



NOTE: The noise may be more likely to occur when the engine is cold (i.e. after the car has been left stationary overnight).

1. Determine if the noise is generated by the drive belt system.
 - Start the engine and allow it to idle.
 - Stand at the front of the vehicle with the hood open and listen to the engine.
 - Identify that the noises originate from the drive-belt system.
 - Inspect the belt as it passes over the idler pulleys for front-to-back movement over the pulley (tracking), which may help to indicate a misalignment problem.
 - Identify at which pulley the noise is generated, or which area of the drive belt system (top/bottom, left/right) the noise appears to come from.
 - Stop the engine.

TIB 12/02/04/NAS	CIRCULATE: TO	Service Mgr X	Warranty X	Workshop X	Body Shop X	Parts X
---------------------	------------------	------------------	---------------	---------------	----------------	------------



NOTE: A band where the paint coating has been worn away is normal.

- **The band should be the same width as the belt.**
 - **A wear mark wider than the belt may suggest the belt has been "tracking."**
2. Note wear patterns on the belt running surface of the pulleys.
 3. If the wear-band is offset from a central position or if the wear-band on one pulley is offset rearward while the wear-band on another pulley is offset forwards, inspect for misalignment of one or more of the pulleys.
 4. Verify that the word, 'FRONT' is visible on the Active Cornering Enhancement (ACE) and Power Assisted Steering (PAS) pump pulleys as viewed at the front of the engine.
 5. If 'FRONT' is not visible on the outward face of either pulley, remove the pulley and install with the word, 'FRONT', visible from the front of the engine.



NOTE: The noise is most likely to occur as the belt enters one of the pulleys, but the cause of the noise may be due to a misalignment of any of the preceding pulleys. If the belt is completely smooth, or particularly if the belt is smoother on one groove face than the other, it is an indication that there may be a misalignment of one or more pulley.

6. If not removed for the pulley "FRONT" correction in step 5, remove the drive belt and inspect as follows:
 - Check the grooved side of the belt for the presence of a fibrous surface.
 - Check the grooves for smoothness and wear patterns.
 - Check for signs of cracking or excessive dust or grit impregnation.



NOTE: Excessive coolant contamination may cause swelling of the belt, which may result in noisy operation.

- Check the belt for visual signs or smell of coolant contamination, or of oil contamination.
 - Identify and rectify the cause of the coolant or oil spillage or leakage.
 - If fluid contamination has occurred, clean the pulleys carefully with water.
7. Check the attachment torque values for each pulley and all brackets supporting the accessory components.
 8. If torque values are not to the specified value, or bracket misalignment is suspected, remove the component to check for contamination trapped between the mounting surfaces.
 9. Clean all mounting locations and reinstall the removed component with correct torque values applied.
 10. If any of the following belt conditions has been found, replace the belt with a new component
 - If imbedded dirt is found.
 - If cracking is found.
 - If fluid contamination has occurred.
 - If excessive wear has occurred.
 11. If no damage or alignment fault has been found, install a new belt, belt tensioner and idler pulley.
 12. If the noise returns immediately, the cause is more likely to be a damaged accessory device than the drive belt system.