

Clattering/rattling engine noise on deceleration

Topic number	LI03.10-P-060916
Version	9
Design group	03.10 Connecting rods, pistons
Date	06-29-2016
Validity	Engine 274.920 (LS) Modified wrist pins are installed as of engines: 274 920 E0 043259 (as of about April 20, 2015) and 274 920 30 406602 (as of about March 27, 2015)
Reason for change	Document revised
Reason for block	

Complaint:

Clattering/rattling or knocking noise from the crank assembly of the engine when cold at oil temperatures up to approx. 50°C mostly heard on engine deceleration.

The noise diminishes with the increased engine temperature and is unnoticeable with engine at operating temperature.

Attachments	
File	Description
M274 LS engine noise.MP3	noise example

Cause:

The knocking noise might be attributed to the unfavorable tolerance of the piston wrist pin resulting in enlarge end float of the connecting rod in the piston.

Remedy:

Note:

The following tests must be performed with the engine cold (engine oil temperature must be lower than 50°C):

- Compare engine sound with another vehicle and to attached sound file (the normal sound related to the injectors shutting off during engine deceleration or other general sounds of operation of an direct injected engine might be mistaken for an abnormal engine noise).
- Perform other checks; switch on and off electrical consumers (A/C, lights, radio, etc.) and assess engine sound
- Observe any changes in noise levels with oil pressure switch disconnected and drive belt removed
- Increase the idle speed (constant rpm) and engine load and assess whether the noise changes
- Assess engine noise at engine oil temperature >80°C

If it is determined that the complaint relates to that described under "Cause", the repair would require replacement of all connecting rods, pistons and rod bearings (some needed replacement parts are listed in parts table).

Note:

XENTRY TIPS

It is no longer required ordering individual pistons, connecting rods and bearings since kit containing these parts is now available (refer to parts information table).

The Lanchester balancer bolts must be replaced during repair.

Refer to the EPC for other parts needed in repairs outside of the piston kit.

Note:

Refer to the attachment for a WIS draft document with instructions for pistons r&r - or go to temporary postings on STI. Follow other WIS documents during repair (such as instructions for adjusting backlash play at Lanchester balancer).

Note:

Please ensure parts availability before scheduling an appointment for repairs. Follow parts return policy on replacement parts as the pistons and rods will be inspected at the QEC

Attachments	
File	Description
Remove_install piston.pdf	Remove/install piston

Symptoms
Power generation / Engine noise / Knocking/clacking
Power generation / Engine noise / Chattering
Power generation / Engine noise / Rattling
Power generation / Engine noise / Clattering

Parts						
Part number	ES1	ES2	Designation	Quantity	Note	EPC
A 002 990 24 03			Lanchester balancer bolt	2		X
A 003 990 04 03			Lanchester balancer bolt	2		X
A 274 016 00 20			Cylinder head gasket	1		X
A 000 016 05 69			Cylinder head bolts	10		X
A 274 037 03 00			Piston repair kit	1		X

WIS-References			
Document number	Title	Note	Allocation
AR01.10-P-2401MRA	Remove/install engine with transmission		Remedy
AR01.30-P-5800MRB	Remove/install cylinder head		Remedy
AR03.20-P-1100MRA	Remove/install Lanchester balancer		Remedy

XENTRY TIPS

Validity		
Vehicle	Engine	Transmission
C (205) - 205.048	274.920	725
C (205) - 205.048	274.920	722
C (205) - 205.049	274.920	722
C (205) - 205.148	274.920	722
C (205) - 205.148	274.920	725
C (205) - 205.248	274.920	722
C (205) - 205.248	274.920	725