

Clattering/rattling engine noise on deceleration

Topic number	LI03.10-P-060916
Version	4
Design group	03.10 Connecting rods, pistons
Date	07-01-2015
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	Cause, Remedy and Validity updated
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 not noticeable with engine at operating temperature.

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:

Compare the engine sound with another vehicle - 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.

Compare the engine sound to the sound attached to this LI if it is similar. If possible compare to other similar vehicles - preferably to vehicles after clean point. Perform other checks such as switching on and off consumers (A/C, lights, radio, etc.) or removing the drive belt to aid in noise analysis. In addition, observe any changes in noise levels with oil pressure switch disconnected (located on the front of the engine next to the harmonic balancer).

If it is determined that the complaint relates to that described in the "Cause", the repair would require replacement of all connecting rods, pistons and rod bearings (some needed replacement parts are listed in parts table). The Lanche-ster balancer bolts will need to be replaced as well. Always refer to the EPC for latest parts specification.

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 Lanche-ster balancer).

Note:

Please check 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
M274 LS engine noise.MP3	Engine noise with Y130 connected
Kolben aus-, einbauen_M274_engl.pdf	WIS draft pistons r&r document

XENTRY

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 274 030 09 00			Piston	4		X
A 270 030 01 20			Connecting rod	4		X
A 271 038 01 10			Bearing	8		X
A 002 990 24 03			Lanchester balancer bolt short	2		X
A 003 990 04 03			Lanchester balancer bolt long	2		X
A 274 016 00 20			Head gasket	1		X
A 000 016 05 69			Head bolt	10		X

Work units				
Op. no.	Operation text	Time	Damage code	Note
94-1013	LOCATE NOISE		03304 17	
54-7989	D/C GROUND LINE		03304 17	
83-1762	A/C DRAIN FILL		03304 17	
01-2800	ENGINE REMOVE/INSTALL		03304 17	
01-4270	ENGINE STAND		03304 17	
01-5765	CYLINDER HEAD R&R		03304 17	
01-6821	EXTRA WORK FOR CYL HEAD W/ AU-TO TRANS		03304 17	
03-7061	PISTONS R&R		03304 17	
03-7311	PISTON RINGS		03304 17	
83-6623	A/C DRYER		03304 17	
54-0650	12V		03304 17	
54-1011	QUICK TEST		03304 17	
40-6500	4MATIC ONLY ALIGNMENT		03304 17	May claim necessary adjustments. See ASRA

WIS-References			
Document number	Title	Note	Allocation
AR01.10-P-2401MRA	Remove engine with transmission		Remedy
AR01.30-P-5800MRB	Remove the cylinder head		Remedy

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AR03.20-P-1100MRA	Remove Lanchester balancer		Remedy
AR03.10-A-7021TPX	Pistins removal and installation	Draft only - not official WIS document. Refer to Attachments or Star TekInfo Temporary Postings	Remedy

Validity		
Vehicle	Engine	Transmission
205.048	*	*
205.049	*	*

Full model designation breakdown		
Vehicle	Engine	Transmission
205.048	274.920	722.994
205.048	274.920	725.011
205.049	274.920	722.969