



SI M 11 02 07  
Engine

March 2009  
Technical Service

This Service Information bulletin supersedes SI M11 02 07 dated **January 2008**.

**NEW** designates changes to this revision

#### SUBJECT

**Rattle Noise from Engine**

#### MODEL

**NEW** R55 Cooper S with N14 engine

R56 Cooper S with N14 engine

**NEW** From start of production up to November 28th, 2008

#### **NEW** SITUATION

The customer complains of a rattle noise from the engine during cold start-up. The rattle noise will occur more frequently when driving short distances. The rattle noise will increase with RPM, but will dissipate after approximately three seconds if left to idle. Increasing the RPM slightly will increase the intensity, but will also shorten the duration of the rattle noise. The noise is more prevalent when the outside temperature is approximately 15° Celsius or below.

#### **NEW** CAUSE

The complaint can be caused by one or both of the following reasons:

- Insufficient tension of the timing chain
- The chain tensioner has not been bled sufficiently.

#### **NEW** PROCEDURE

Work through the following procedure in order to eliminate other possible causes:

1. If a fault is stored in the DME memory (e.g., misfiring, VANOS, etc.), then work through all relevant test plans first.
2. A one-off short shrill will be heard within the first two seconds of engine operation. This is an inherent noise caused by the first regulation cycle of the engine oil pump. This is normal operation and no parts should be replaced.
3. If the noise appears to be coming from the valve cover or the vacuum pump area, refer to SI M11 02 08. To verify the source of the noise, disconnect the vacuum hose from the mechanical vacuum pump to eliminate the knocking noise. This is not a failure of the mechanical vacuum pump; do not replace any parts.
4. Ensure that the noise is not created or eliminated by depressing the clutch pedal, if equipped.

5. Disconnect the electrical connector from the tank ventilation valve. If the noise disappears when the connector is removed, reconnect to verify whether the noise returns. If the noise returns, replace the tank ventilation valve.

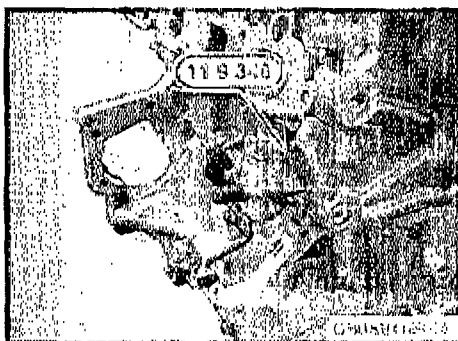
If all of the steps above are unsuccessful in eliminating the noise, please proceed to step 6.

6. Remove the right-hand wheel arch trim to access the crankshaft central bolt.
7. Turn the engine by hand to move the flywheel to approximately 90° before TDC.

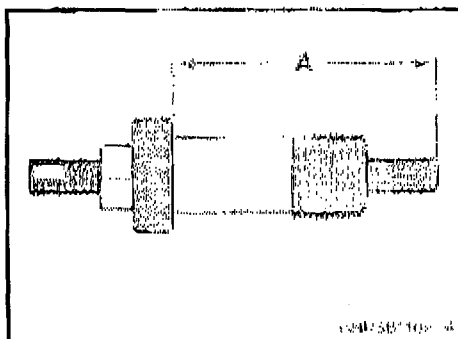


8. Install the locating pin (Special Tool 11 9 590) to lock the position of the engine.

9. Remove the chain tensioner and collect the residual oil with a shop towel.



10. Fit the chain tensioner (Special Tool 11 9 340) without the seal ring and with the lock nut loose. Pretension the chain tensioner with Special Tool 00 9 250 to 0.6 Nm. Finger-tighten the lock nut on Special Tool 11 9 340.



11. Remove the chain tensioner (Special Tool 11 9 340) from the engine, with the lock nut still tight. Measure the distance (A) as described in the illustration.

12. If the distance (A) is less than 68 mm, then only replace the chain tensioner with P/N 11 31 7 598 956, as per Repair Instruction RA 11 31 090 (installing and removing/replacing chain tensioner piston N14).

13. If the distance (A) is 68mm or greater, then replace the following components:

- Chain tensioner
- Timing chain
- Guide rail
- Tensioner rail
- Sliding rail
- Sprocket on the crankshaft
- Bearing bolts for the tensioner and guide rails

Refer to Repair Instruction RA 11 31 051 (Replacing timing chain N14).

Refer to the EPC for additional parts required, i.e., gaskets, seals, etc.

Do not replace the intake camshaft VANOS adjustment unit or the exhaust camshaft sprocket.

#### **NEW PARTS INFORMATION**

<b>Part Number</b>	<b>Description</b>	<b>Quantity</b>
11 31 7 598 956	Chain tensioner	1
11 31 7 534 251	Chain tensioner seal ring	1
11 31 7 534 784	Timing chain	1
11 31 7 568 241	Guide rail	1
11 31 7 534 833	Tensioner rail	1
11 31 7 534 771	Bearing bolt	1
11 31 7 534 768	Bearing bolt	2
11 31 7 550 461	Bearing bolt gasket ring A14x21	1
11 31 7 546 697	Slide rail	1
11 21 7 534 654	Crankshaft sprocket	1

Refer to the EPC for additional gaskets, seals and bolts, as described in Repair Instruction RA 11 31 051.

#### **NEW WARRANTY INFORMATION**

Covered under the terms of the MINI New Vehicle Limited Warranty or the MINI NEXT Certified Pre-Owned Program.

**11 33 04 39**

**Defect Code**      00

**Labor Operation**    11 99 000      Procedure steps 1-5

**Main Work**

**Labor Allowance**    4 FRU

Or

**Labor Operation**    11 99 000      Procedure steps 1-11

**Main Work**

**Labor Allowance**    10 FRU

**Labor Operation:**    11 31 590      Replacing piston for timing chain tensioner

+ Associated  
Work

**Labor Allowance**    5 FRU

or

**Labor Operation:**    11 31 555      Replace timing chain and associated parts listed above.

+ Associated  
Work

**Labor Allowance**    78 FRU

Note: The following explanations will spell out the correct use of the work times.

**Main Work:**      Use this labor operation number when the only repair performed is the listed warranty repair.

OR

**+Associated Work:**      Use this labor operation number when other repairs or services are performed along with the listed warranty repair.  
Under no circumstances should both labor operation numbers be claimed. Attempts to claim both times will result in an unnecessary delay in claim processing and payment.

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