



This Service Information bulletin supersedes SI M11 02 07 dated **September 2010**.

**NEW** designates changes to this revision

#### SUBJECT

### Rattle Noise from Engine

#### MODEL

R55 Cooper S with N14 engine

R56 Cooper S with N14 engine

From start of production up May 4th, 2009

#### SITUATION

The customer complains of a rattle noise from the engine during cold start-up - most often at the 1,600-1,800 rpm range, or in some instances (elongated timing chain) from the idle speed up to 2,000 rpm.

The rattle noise occurs more frequently when driving short distances.

The noise is more prevalent when the outside temperature is approximately 15° Celsius (59° Fahrenheit) or below.

#### 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.

#### PROCEDURE

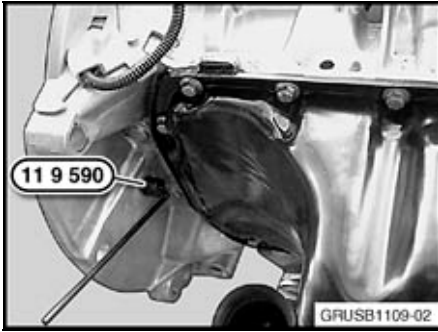
Work through the following procedure in order to eliminate other possible causes:

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.

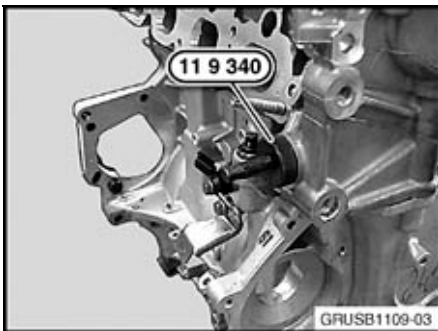
6. Remove the right-hand wheel arch trim to access the crankshaft central bolt.
7. Disconnect the battery, remove ignition coils and spark plugs. Turn the engine by hand to move the

flywheel to approximately 90° before TDC.

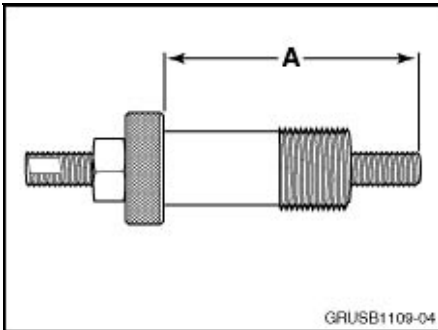


8. Install the locating pin (Special Tool 11 9 590) to lock the position of the engine.

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 distance (A) is less than 68mm (and the noise can be reproduced only between 1,600-1,800 rpm), then only replace the chain tensioner with P/N 11 31 7 607 551 (refer to parts list A), as per Repair Instruction REP 11 31 090 (Installing and removing/replacing chain tensioner piston N14).
13. If distance (A) is 68mm or greater (and the noise is reproducible both at 1,600-1,800 rpm range as well as at idle speed when cold), replace the following components in the list below (refer to parts list B). If you are uncertain regarding repair attempts already made, each chain tensioner part number is stamped on the outer sleeve. It must be removed from the engine in order to read the part number.

- Chain tensioner-P/N 11 31 7 597 895 only!

**Note:** P/N 11 31 7 607 551, Timing chain tensioner, should not be installed with a new timing chain.

- Timing chain
- Guide rail

- o Tensioner rail
- o Sliding rail
- o Sprocket on the crankshaft

Bearing bolts for the tensioner and guide rails

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

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

The incorrect crankshaft central bolt tightening torque is stated in the current release of ISTA. Disregard the torque specified in the current Repair Instructions when performing repairs that include replacing the crankshaft central bolt, P/N 11 21 7 585 184. The torque specification information will be corrected in the release of ISTA/D 2.21. The correct torque specification is described below.

#### 11 21 Crankshaft and Bearings

1 AZ	Type	Thread	Tightening	Measure
Torsion	N14	M14 x 1.5 x 74	specification	
Dampener (hub) to crankshaft (central bolt)			Replace screws	
			Lightly oil screws and threads	
			Jointing torque	50 Nm
			Torque angle	180°

**Do not replace the hydraulic valve lifters (HVA), intake camshaft VANOS adjustment unit, or the exhaust camshaft sprocket for this type of noise. It is NOT necessary to obtain a Part Replacement Authorization (TeileClearing) for this specific issue. Refer to the Warranty section of this bulletin for more details.**

14. After the repair is completed, reprogram the vehicle with the current ISTA/P.

#### **Manual transmission vehicles only:**

Use version (2.37.0 or higher) to the target integration level R056-10-03-501 or higher.

#### **Automatic transmission vehicles only:**

Do not conduct the reprogramming step on Cooper S/Clubman S vehicles equipped with the ASIN F21 automatic transmissions. The updated DME software with drivability improvements will be released in **NEW** 2.40.

Note that ISTA/P will automatically reprogram and code all programmable control modules that do not have the latest software.

For information on programming and coding with ISTA/P, refer to Centernet / Aftersales Portal / Service / Workshop Technology / Vehicle Programming.

#### **PARTS INFORMATION**

<b>Part Number</b>	<b>Description</b>	<b>Quantity</b>
<b>Parts List A</b>		
11 31 7 607 551	Chain tensioner	1
<b>Parts List B</b>		
11 31 7 597 895	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
11 21 7 585 184	Bolt	1

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

#### **WARRANTY INFORMATION**

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

#### **Defect Code 11 33 04 39 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 31 090\* Replacing piston for timing chain tensioner

+ Associated Work

Labor Allowance 5 FRU

or

Labor Operation: 11 31 051\* Replace timing chain (Parts list B)

+ Associated Work

Labor Allowance      Refer to KSD2  
Plus

Labor Operation      Refer to KSD      Reprogram/recode vehicle

Labor Allowance      Refer to KSD2

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.

In cases where ISTA requires the replacement of control modules or additional programming because certain control modules failed to program correctly, print out the Measures Plan and Final Report and attach these reports to the RO in the vehicle file. This additional work should be claimed under the defect code listed in this bulletin, using the labor operation and labor allowance from the KSD2.

**Part replacement authorization is NOT required.** Do NOT submit a TeileClearing PuMA case. A copy of the diagnostic report (short test) must be kept with the Repair Order (RO) and FASTA data must be transmitted. When submitting a warranty claim, please include "replaced per SI M11 02 07" in the comments section.