SIB 11 02 08 2020-09-10

Power Reduction, FC2A82 Intake VANOS and/or FC2A87 Exhaust VANOS Camshaft Fault

This Service Information bulletin (Revision 9) supersedes SI B11 02 08 **dated April 2020.**

What's New:

- Procedure update
- Parts update
- Warranty update

MODEL

E82 and E88 with N51, N52K and N54 engines produced from 1/2008 to 1/2010	E90 and E91 with N52 engine produced from 3/2005 to 6/2006	E90, E91, E92 and E93 with N51, N52K and N54 engines produced from 7/2006 to 1/2010	E85 and E86 with N52 engine produced from 1/2006 to 1/2010
E83 with N52K engine produced from 9/2006 to 1/2010	E60 and E61 with N52, N52K and N54 engines produced from 3/2005 to 1/2010	E70 with N52K engine produced from 10/2006 to 1/2010	E71 with N54 engine produced from 1/2008 to 1/2010
F01 and F02 with N54 engine from start of production to 1/2010			

SITUATION

The "Service Engine Soon" (MIL) lamp is illuminated and engine power reduction is perceived.

This situation can occur after driving for some time with the engine at full operating temperature. If the ignition is cycled, the engine then usually performs normally.

The following faults are stored in the DME:

- 2A82 VANOS intake – stiff; jammed mechanically
- 2A87 VANOS exhaust – stiff; jammed mechanically
- 130108 VANOS intake: control fault, position not reached
- 130308 VANOS exhaust: control fault, position not reached

For the N54 engine, the following secondary faults may also be stored:

- 120408 Charge-air pressure control, cut-out: Boost pressure accumulation blocked
- 3100 Boost-pressure control, deactivation – boost-pressure buildup prohibited

CAUSE

The VANOS faults can be caused by an insufficient oil pressure supply to the inlet VANOS adjustment unit. To effectively move the camshafts to the target positions in the specified time and under all engine conditions, sufficient oil pressure supply to the VANOS control pistons must always be available.

If engine operation requires the VANOS system to quickly advance or retard the intake or exhaust camshaft, faults may be stored if the camshaft is "late", or does not reach the target position. In this situation, engine power may be reduced and a check control message is displayed.

The consequential fault 3100 or 120408 can also be set in the DME fault memory as well.

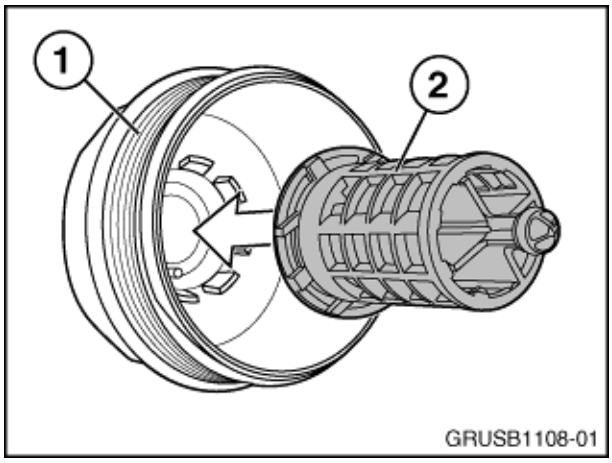
CORRECTION

Follow the instructions in the PROCEDURE section.

PROCEDURE

1. Perform all applicable test plans completely for the faults stored.

A mechanical restriction or electrical failure of the VANOS solenoid and/or the electrical circuit can cause insufficient oil supply to the VANOS assemblies as well.
If the completed test plans results are inconclusive, then proceed to step 2.



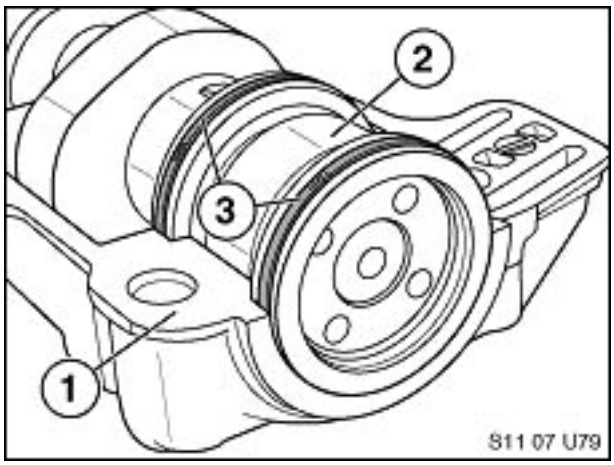
2. The oil filter cap insert may have been inadvertently removed during the vehicle's last oil service. If this insert is not installed, it will result in non-filtered engine oil being supplied to the engine, thus possibly clogging or damaging the VANOS solenoids.
   If the oil filter cap insert is found to be missing, the entire oil filter housing cap must be replaced (refer to the EPC).
   Note: Repairs related to step 2 are not considered a defect in materials or workmanship.

3. Replace both VANOS solenoids, change the engine oil and filter, and reset the service data only when applicable, as outlined in the Warranty Information section. Drive the vehicle to verify effectiveness.

Information Only – Camshaft bearing ledge wear assessment

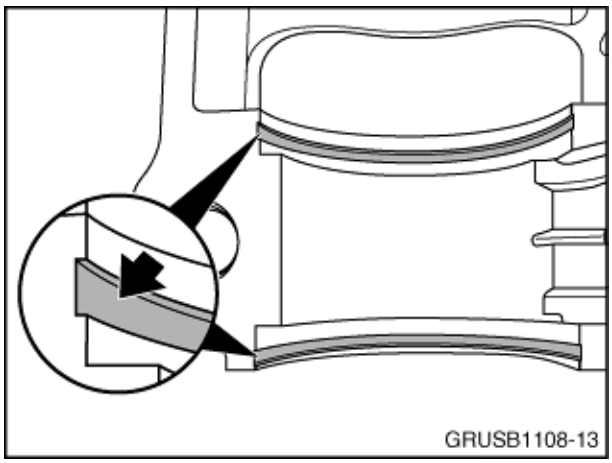
While performing the test plan for the VANOS faults stored (ABL-DIT-b1214_ngnWA or E), the inspection of the camshaft hook ring seals is advised in "step 5 of these test plans".

Below are detailed illustrations of worn camshaft bearing ledges, and the acceptable wear of the camshaft bearing ledge.

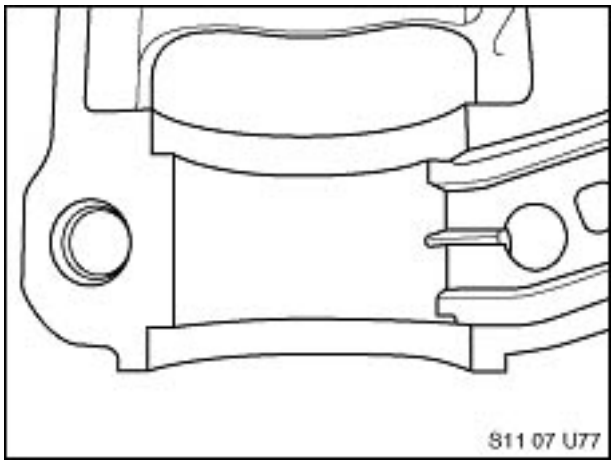


1. Camshaft bearing ledge
2. Intake camshaft
3. Hook ring seals

Note the deep grooves worn into the camshaft bearing ledge by the camshaft hook ring seals. The camshaft bearing ledge is worn.



The magnification call-out shows a detailed description of the wear.



Acceptable camshaft bearing ledge – minor gray wear marks from the rotation of the camshaft are normal. If deep groves are not apparent, the camshaft bearing ledge is acceptable and should not be replaced.

Do not replace parts that are not worn.

Do not replace the intake or exhaust camshafts. If applicable, only replace the bearing ledge and rectangular hook rings on the affected camshaft for the VANOS fault(s) stored in DME Memory.

PARTS INFORMATION

Replace the VANOS solenoids, engine oil and oil filter only:

Part Number	Description	Quantity
11 36 7 585 425	Solenoid valve (SOLV)	2
11 42 7 566 327	Set oil-filter element	1

Bulk Material - Sublet

Part Number (PN)	Description	Quantity
83 21 2 365 950	Engine oil (0W-30 LL01FE - 6 x 1 Liter case)	As needed per ISTA Repair Instructions
Or		
83 21 2 405 849	Engine oil (0W-30 LL01FE – 209 Liter drum)	As needed per ISTA Repair Instructions
Or		
83 21 2 449 994	Engine oil (0W-30 LL01FE – Tank Delivery - Liters)	As needed per ISTA Repair Instructions

WARRANTY INFORMATION

Based on the potential current age/mileage of the BMW model listed above, for eligible vehicles equipped with the **N51 PZEV/SULEV engine** that:

- **Are** registered in the State of California (CA); or a
- State that has **fully adopted** the State of California PZEV/SULEV regulation,

This repair is covered by the terms of this California Limited Emissions Warranty for 15 years/150,000 miles, whichever occurs first.

Defect Code:	**1136021200**	**Solenoid valve/central valve, adjuster, camshaft, VANOS permanently failed**
:		
Labor Operation	**Description**	**Labor Allowance**
00 00 006	Performing vehicle test (with vehicle diagnosis system – checking faults) (Main work)	Refer to AIR
Or:		
00 00 556	Performing vehicle test (with vehicle diagnosis system – checking faults) (Plus work)	Refer to AIR
And:		
61 21 528	Connect an approved battery charger/power supply (indicated in AIR as Charging battery)	Refer to AIR
And, as necessary:		
61 00 006	Performing vehicle diagnosis – test module	Work time (WT)
And:		
11 36 655	Replacing both VANOS solenoid valves	
And:		Refer to AIR
11 99 000	Perform engine oil service and reset the service data when applicable (see below)	4 FRU

If you are using a Main labor code for another repair, use the Plus code labor operation 00 00 556 instead of 00 00 006.

Refer to AIR for the corresponding flat rate unit (FRU) allowances.

Work time labor operation codes 61 00 006 and 11 99 000 are not considered Main labor operations.

For the above and for any addition work that is required, as applicable to your center, please refer to **SI B01 01 20 or B01 07 20** for claiming your diagnosis work time, job/repair work time (WT), WT and repair-related explanation procedures.

And, as needed:

Sublet – Bulk Materials (RO and Claim Comments Required)

Sublet Code 4	See the sublet reimbursement calculations below	Reimbursement for the repair-related bulk material (Do not use the BMW part number for claim submission)

Sublet reimbursement calculation for claiming the applicable repair-related bulk material (BMW part numbers) is at the dealer net price amount for the quantity used plus your center's handling.

Enter this material cost in sublet and itemize the amount on the repair order and in claim comment section.

CBS Vehicles - E82, E88, E90, E91, E92, E93, E60, E61 E70, E71, F01 and F02:

When the ISPA Light CBS data displays the engine oil service as “Recommended” or “Due”, reset the CBS data when changing the engine oil with this repair.

Important Condition Based Service (CBS) note:

Due to a calculation issue, some of the vehicles listed above may have their “Remaining” or “Due in” miles to the engine oil service at or below the “Priority Value” of 2000 miles; however the Service Status does not show “Recommended.” If this situation exits, reset the CBS data after performing this repair.

SIA Vehicles - E83, E85 and E86:

SIA vehicles do not display a recommended period; it only shows the engine oil services or inspections as “Due”.

When the forecasted remaining miles to the next “OIL SERVICE" or "INSPECTION" is 2,000 miles or less, reset the SIA data after performing this repair.

Note for all vehicles:

When resetting the service data procedure applies, please address any “connected” maintenance services items that are also required to be performed, invoice these additional maintenance items separately.

Other Repairs

If other eligible and covered work is performed as a result of performing the ISTA diagnostics and related test plans, if eligible, claim this work with the applicable defect code and the labor operations that are listed in AIR (including diagnosis).

QUESTIONS REGARDING THIS BULLETIN

Technical inquiries	Submit feedback at the top of this bulletin
Warranty inquiries	Submit an IDS ticket to the Warranty Department
Parts inquiries	Submit an IDS ticket to the Parts Department