



This Service Information bulletin supersedes SI B12 14 12 **dated February 2014.**

NEW designates changes to this revision

SUBJECT

N51, N52K, N52T and N55 Engine: Various Faults Stored in DME Related to VANOS and Camshaft Position

MODEL

NEW

E89 (Z4)

Produced from 9/2009 to 08/2011

E70 (X5)

Produced from 10/2009 to 03/2010

E82 (1 Series Coupe)

Produced from 9/2009 to 08/2011

E88 (1 Series Convertible)

Produced from 9/2009 to 08/2011

E90 (3 Series Sedan)

Produced from 9/2009 to 04/2012

E91 (3 Series Sports Wagon)

Produced from 9/2009 to 04/2012

E92 (3 Series Coupe)

Produced from 9/2009 to 04/2012

E93 (3 Series Convertible)

Produced from 9/2009 to 04/2012

F07 (5 Series Gran Turismo)

Produced from 9/2009 to 11/2011

F10 (5 Series Sedan)

Produced from 9/2009 to 08/2011

F25 (X3)

Produced from 2/2009 to 10/2011

With the N51, N52K, N52T and N55 engine

SITUATION

A rattling noise can be heard from the engine compartment; the engine loses power; and the Service Engine Soon lamp is illuminated. One or more of the following faults may be stored:

NEW E70, E71, E82, E88, E90, E91, E92 and E93:

- 2A7C - VANOS, inlet, cold start
- 2A82 - VANOS, intake, variable cam control test
- 2A7A - VANOS, exhaust, cold start
- 2A87 - VANOS, intake: control fault, camshaft sticking
- 2D5A - VANOS, intake: control fault, camshaft sticking
- 2D5B - VANOS, intake: control fault, position not reached
- 2D54 - VANOS, exhaust, cold start: not controllable
- 2D55 - VANOS, intake, cold start: not controllable
- 2D60 - VANOS, exhaust: control fault, camshaft sticking
- 2D61 - VANOS, exhaust: control fault, position not reached
- 2D9F - Camshaft input sensor: signal implausible
- 2DA1 - Camshaft exhaust sensor: signal implausible
- 300C - Camshaft input sensor: signal high
- 300D - Camshaft input sensor: signal low
- 300E - Camshaft exhaust sensor: signal high
- 300F - Camshaft exhaust sensor: signal low

F07, F10, F12, F13 and F25:

- 130104 - VANOS, intake: control fault, camshaft sticking
- 130108 - VANOS, intake: control fault, position not reached
- 130304 - VANOS, exhaust: control fault, camshaft sticking
- 130308 - VANOS, exhaust: control fault, position not reached
- 130E11 - Camshaft input sensor: signal implausible
- 130F11 - Camshaft exhaust sensor: signal implausible
- 164020 - Camshaft input sensor: signal high

164021 - Camshaft input sensor: signal low

164030 - Camshaft exhaust sensor: signal high

164031 - Camshaft exhaust sensor: signal low

NEW CAUSE

One or both (intake and/or exhaust) of the VANOS gear assemblies may have faulty assembly bolts. One or more of the four assembly bolts have loosened or broken.

NEW PROCEDURE

1. Perform a DCS inquiry and search for any open recalls, if a recall is not completed for the VANOS gear assemblies then refer to the applicable Service Information bulletin that is identified in the DCS inquiry.

If no open recalls exist then proceed to step 2.

2. If the VANOS gear assembly bolts are found loose or broken, replace the affected VANOS gear assembly. Refer to Repair Instruction 11 36 046, "Removing and installing or replacing intake and exhaust camshaft units."

Additionally, the remaining undamaged VANOS gear assembly will need to have the updated bolts (P/N 11 36 8 602 263) installed.

Refer to the attached document for VANOS gear bolt replacement procedures.

The bolt replacement procedure must be performed when the vehicle's engine is at room temperature.

Performing the torque sequence described in the attachment when the engine is hot will result in inaccurate torque values.

The ISTA/D repair instructions apply only to the VANOS gear assembly replacement.

If both VANOS gear assembly bolts are found loose or broken then replace both VANOS gear assemblies. Refer to Repair Instruction 11 36 046, "Removing and installing or replacing intake and exhaust camshaft units." If the bolts have been found broken, the missing portions of the bolts will need to be retrieved from the engine before the final repairs are made. This additional work may include removing the engine oil pan, and a close examination of the timing chain drive to retrieve the missing parts. Refer to the applicable repair instructions for oil pan removal procedures.

IMPORTANT!

Replacement of the VANOS gear assemblies described in this bulletin does not require TeileClearing authorization.

NEW PARTS INFORMATION

Do not discard the replaced parts. These parts will be requested by the Warranty Parts Return Center (WPRC).

Note: Please only order the necessary parts, in the quantities needed, for customers' vehicles that have confirmed failures.

Also, refer to ETK and the repair instructions for onetime-use fasteners and component information regarding additional and/or replacement screws, gaskets and seals that need to be installed and claimed which are not listed below.

N51, N52K and N52T only:

Refer to the appropriate parts list that matches the repair. Each parts table has the description of the repair listed below.

Reuse the strut brace bolts.

Replace the following parts only if they are found damaged or leaking:

Part Number	Description	Quantity
11 12 7 575 422	Coil Sleeve	6
11 12 7 552 280	Valvetronic Motor (VVT) Seal	1
11 12 7 559 699	Valvetronic (VVT) Eccentric Shaft Seal	1

Parts List A:

The parts list below is only for vehicles that receive one replacement VANOS adjustment unit and VANOS adjustment bolts on the intake or exhaust VANOS adjustment unit.

Part Number	Description	Quantity
11 36 8 602 263	VANOS Bolt (ISA screw M7x21)	4*
11 12 7 582 245	Profile Seal	1
11 36 7 524 954	Collar Screw	1
11 31 7 534 251	Chain Tensioner Seal Ring	1
11 36 7 583 207	Intake VANOS Adjustment Unit	1
or		
11 36 7 583 208	Exhaust VANOS Adjustment Unit	1

*Additional replacement bolt(s) may be needed if they do not torque to the correct specification, claim additional bolt(s) as necessary and explain the reason in the claim comments.

Parts List B:

The parts list below is only for vehicles that receive both intake and exhaust replacement VANOS adjustment units.

Part Number	Description	Quantity
11 12 7 582 245	Profile Seal	1
11 36 7 524 954	Collar Screw	2
11 31 7 534 251	Chain Tensioner Seal Ring	1
11 36 7 583 207	Intake VANOS Adjustment Unit	1
11 36 7 583 208	Exhaust VANOS Adjustment Unit	1

Additional Work (Parts List B and C): Removing and Installing the Engine Oil Pan when Necessary

Part Number	Description	Quantity
Refer to EPC	Set Oil-Filter Element	1

N55 Only:

Refer to the appropriate parts list that matches the repair. Each parts table has the description of the repair listed below.

Reuse the strut brace bolts.

Replace the following parts only if they are found damaged or leaking:

Part Number	Description	Quantity
11 37 7 502 022	Valvtronic Motor (VVT) Seal	1
11 36 7 609 963	Valvtronic (VVT) Motor Screws	2

Parts List A:

The parts list below is only for vehicles that receive one replacement VANOS adjustment unit and VANOS adjustment bolts on the intake or exhaust VANOS adjustment unit.

Part Number	Description	Quantity
11 36 8 602 263	VANOS Bolt (ISA screw M7x21	4*
11 12 7 587 804	Profile Seal	1
11 36 7 524 954	Collar Screw	1
11 31 7 534 251	Chain Tensioner Seal Ring	1
11 36 7 583 207	Intake VANOS Adjustment Unit	1
or		
11 36 7 583 208	Exhaust VANOS Adjustment Unit	1

*Additional replacement bolt(s) may be needed if they do not torque to the correct specification, claim additional bolt(s) as necessary and explain the reason in the claim comments.

Parts List B:

The parts list below is only for vehicles that receive both intake and exhaust replacement VANOS adjustment units.

Part Number	Description	Quantity
11 12 7 587 804	Profile Seal	1
11 36 7 524 954	Collar Screw	2
11 31 7 534 251	Chain Tensioner Seal Ring	1
11 36 7 583 207	Intake VANOS Adjustment Unit	1
11 36 7 583 208	Exhaust VANOS Adjustment Unit	1

Additional Work (Parts list B and C): Removing and Installing the Engine Oil Pan when necessary

Part Number	Description	Quantity
Refer to EPC	Set Oil-Filter Element	1

NEW WARRANTY INFORMATION

Covered under the terms of the BMW New Vehicle/SAV Limited Warranty or the BMW Certified Pre-Owned Limited Warranty.

This repair is also covered by the State Emissions Warranty (dependent on vehicle model year and state of registration) that applies to the BMW models listed.

The BMW Certified Pre-Owned Limited Warranty applies to BMW vehicles that have and are still within the BMW Certified Pre-Owned coverage period, but beyond Emissions Warranty coverage that applies.

Defect Code:	11 36 01 37 00	
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Vehicles with the N51 N52K and N52T engines:**Replacing one VANOS Gear Assembly and the other VANOS gear assembly's bolts (intake or exhaust)**

Labor Operation:	Labor Allowance:	Description:
00 00 006	Refer to KSD2	Performing "vehicle test" (with vehicle diagnosis system – checking faults)
And if necessary, also:		
61 21 528	Refer to KSD2	Charging battery
And:		
11 99 000	43 FRUs - E89 manual	Includes removing and installing cylinder head cover, removing and installing electric fan with fan shroud, replacing four bolts on one VANOS gear assembly and replacing one VANOS gear.
	45 FRUs - E89 automatic	
	48 FRUs - E83	
	49 FRUs - E70	
	53 FRUs - E82 N52 manual, E88 N52 manual, E90 N52 manual, E91 manual, E92 N52 manual, E93 N52 manual, F10, F25	

	55 FRUs - E82 N52 automatic, E88 N52 automatic, E90 N52 automatic, E91 automatic, E92 N52 automatic, E93 N52 automatic	
	56 FRUs - E82 N51 manual, E88 N51 manual	
	57 FRUs - E82 N51 automatic, E88 N51 automatic, E90 N51 manual, E92 N51 manual, E93 N51 manual	
	58 FRUs - E90 N51 automatic, E92 N51 automatic, E93 N51 automatic	

Replacing both VANOS gear assemblies

Labor Operation:	Labor Allowance:	Description:
00 00 006	Refer to KSD2	Performing "vehicle test" (with vehicle diagnosis system – checking faults)
And if necessary, also:		
61 21 528	Refer to KSD	Charging battery
And:		
11 36 546	Refer to KSD	Removing and installing or replacing intake and exhaust valve adjustment units (VANOS)

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

Additional work, if necessary

Labor Operation:	Labor Allowance:	Description:
11 13 505	Refer to KSD2	Removing and installing the engine oil pan to remove fragments

And/or:

When other additional work and/or parts are required as a result of this issue, including the applicable labor operations listed in KSD2, claim these items under the defect code listed above.

Vehicles with the N55 Engine:

Replacing one VANOS Gear Assembly and the other VANOS gear assembly's bolts (intake or exhaust)

Labor Operation:	Labor Allowance:	Description:
00 00 006	Refer to KSD2	Performing "vehicle test" (with vehicle diagnosis system – checking faults)
And if necessary, also:		
61 21 528	Refer to KSD2	Charging battery
And:		
11 99 000	57 FRUs - F30 manual	Includes removing and installing cylinder head cover, removing and installing electric fan with fan shroud, replacing four bolts on one VANOS gear assembly and replacing one VANOS gear.
	58 FRUs - F30, automatic	
	60 FRUs - E82, E88, E90 manual	
	62 FRUs - E90 automatic, E92 automatic, F93 manual, F25	
	63 FRUs - E70, E71, E93 automatic, F07, F10, F12, F13	
	70 FRUs - E84	
	74 FRUs - F10 hybrid	

Replacing both VANOS gear assemblies

Labor Operation:	Labor Allowance:	Description:
00 00 006	Refer to KSD2	Performing "vehicle test" (with vehicle diagnosis system – checking faults)

And if necessary, also:		
61 21 528	Refer to KSD	Charging battery
And:		
11 36 546	Refer to KSD	Removing and installing or replacing intake and exhaust valve adjustment units (VANOS)

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

Additional work, if necessary

Labor Operation:	Labor Allowance:	Description:
11 13 505	Refer to KSD2	Removing and installing the engine oil pan to remove fragments

And/or:

When other additional work and/or parts are required as a result of this issue, including the applicable labor operations listed in KSD2, claim these items under the defect code listed above.

Refer to KSD2 for the corresponding flat rate unit (FRU) allowance. Enter the Chassis Number, which consists of the last 7 digits of the Vehicle Identification Number (VIN). Click on the “Search” button, and then enter the applicable flat rate labor operation in the FR code field.

Recall Campaign 14V-176: Replace VANOS Gear Bolts

Vehicles which require this Recall Campaign to be completed will show it “Open” when checked in the DCSnet Warranty Vehicle Inquiry and in the Key Reader.

Please refer to SI B11 07 14 and SI B11 08 14 for claim submission information.

Engine Camshaft (VANOS) Adjustment Units: Limited Warranty Extension to 10 Years Without Mileage Limitation

BMW of North America, LLC (“BMW NA”) has extended the limited warranty for the Camshaft (VANOS) Adjustment Units on certain model BMW vehicles equipped with the non-turbocharged 6-cylinder engine.

For eligible BMW Vehicles, the DCSnet Warranty Vehicle Inquiry has been updated with a corresponding component-specific warranty extension “Vehicle Comment.”

Please refer to [SI B01 10 14](#) for claim submission information.

ATTACHMENTS

View PDF attachment [B121412 VANOS Bolt Repair Procedure](#).