



SIB 11 09 23

2023-12-13

RECALL 23V-707: REPLACE VANOS ADJUSTMENT UNIT SCREWS

Please perform the procedure outlined in this Service Information on all affected vehicles before customer delivery. In the event the customer has already taken delivery of the vehicle, please perform the procedure the next time the vehicle is in the shop.

<input type="checkbox"/>	THIS REPAIR IS MOBILE FRIENDLY
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This Service Information Bulletin (Revision 1) replaces SI B11 09 23 **dated October 2023**.

What's New:

- SIB title changed
- Unaffected vehicles, Correction, Procedure, Parts Information, Claim Information added

MODEL

E60 (5 Series Sedan)	E88 (1 Series Convertible)	E93 (3 Series Convertible)
E70 (X5 Sports Activity Vehicle)	E89 (Z4)	F10 (5 Series Sedan)
E82 (1 Series Coupe)	E90 (3 Series Sedan)	F25 (X3 Sports Activity Vehicle)
E83 (X3 Sports Activity Vehicle)	E91 (3 Series Wagon)	
E84 (X1 Sports Activity Vehicle)	E92 (3 Series Coupe)	

Vehicles equipped with the N51, N52K, N52T and N55 Engines.

AFFECTED VEHICLES

Vehicles which require this campaign to be completed will show it as "Open" when checked either in AIR, AWP, Campaign Summary or Warranty Vehicle Inquiry.

Please make sure you check your dealer inventory as soon as possible. As of October 24, 2023, you can see a list of affected vehicles in Inventory Campaign Details (ICD) under ROSS.

UNAFFECTED VEHICLES

Applicable vehicles which had both VANOS adjustment units (P/N 11 36 7 583 207 and P/N 11 36 7 583 208) replaced, or had a complete new or remanufactured engine assembly (with cylinder head) previously replaced, on or after September 1, 2012: These installed replacement parts already meet the requirements of this Recall Campaign. No further repair is necessary.

SITUATION

BMW AG is conducting a Voluntary Safety Recall (effective October 23, 2023) on a certain number of Model Year 2010 - 2013 BMW vehicles that were produced between September 2, 2009, and July 12, 2012.

Please note: These vehicles had coverage under the BMW Engine Camshaft (VANOS) Adjustment Units Limited Warranty Extension (ELW) 10 Years/Unlimited Mileage (SI B01 10 14).

The VANOS assembly (engine) bolts may, over time, loosen, and eventually break. If this occurred, a reduced engine power "safe mode" may be activated. In some cases, the engine may not be able to be restarted after switching off and, in rare cases, the engine could stall which could increase the risk of a crash.

CORRECTION

Replace the VANOS assembly bolts that are not loose or broken.

If the VANOS assembly bolts are found loose or broken, then the entire VANOS assembly must be replaced.

If only one VANOS assembly has loose or broken bolts, do not replace both VANOS assemblies.

PROCEDURE

Before proceeding, review the Affected Vehicle's Repair History (Claims) section located at the bottom of the Warranty Vehicle Inquiry (WVI).

From the previous claim submissions (including ELW SI B01 10 14), or by using other available resources- If it is determined that on or after September 1, 2012, both VANOS units were previously replaced and/or repaired, no VANOS unit repair is necessary.

If an engine has broken or missing bolts, create a TSARA Hotline case with "VANOS Recall" in the subject line. In the case, describe the situation and provide photos of the broken parts. Submit the case and wait for a response.

Due to a parts shortage, we are only processing vehicles that have exhibited a failure, bolts broken, etc.

When an Affected Vehicle requires this Recall repair to be performed:

1. Replace the VANOS assembly's gear bolts on the units that **do not** have any loose and/or broken bolts (one side, or both sides as applicable).
2. If the gear bolts on a VANOS assembly are found loose and/or broken, replace the entire VANOS assembly. If the heads of the bolts are broken, the missing pieces must be found and removed from the engine before the engine repairs are completed.

The VANOS assembly bolt removal and installation video can be viewed via the TIS Website:

1. Select "Videos" from the top menu bar.
2. In the search enter "23V-707" and enter from your keyboard
3. Select "11 03 14 Recall 23V- 707: replace VANOS adjustment screw connection"

Do not automatically replace both VANOS assemblies if only one unit has a loose and/or broken bolt(s).

Refer to the attachment for special tool requirements, tool operation and repair procedures.

It is necessary that the procedure described in the attachment be performed with the vehicle at room temperature. Performing the torque sequence described in this bulletin with a hot engine will result in an inaccurate torque value.

PARTS INFORMATION

Refer to the Parts Matrix for the most up to date ordering information.

Submit a ticket to BMW/MINI Recall Parts only after receiving authorization from the TSARA Hotline.

Use and invoice the applicable part numbers listed below.

Parts List A:

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

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Part Number	Description	Quantity
11 36 8 602 263	VANOS Bolt (ISA screw M7x21)	8*
11 12 7 582 245	Profile Seal	1
11 12 7 559 699	Gasket (VVT Sensor)	1
11 12 7 552 280	Gasket (VVT Motor)	1

Parts List B:

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
11 36 7 578 877	Impulse Sending Wheel for VANOS Adjustment Unit	1
11 12 7 559 699	Gasket (VVT Sensor)	1
11 12 7 552 280	Gasket (VVT Motor)	1

Parts List C:

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
11 36 7 578 877	Impulse Sending Wheel for VANOS Adjustment Unit	2
11 12 7 559 699	Gasket (VVT Sensor)	1
11 12 7 552 280	Gasket (VVT Motor)	1

Additionally, other materials and small parts that are not specified above, such as fluids, lubricants, one-time use screws, nuts, and seals, which must be replaced or installed according to the ISTA repair instructions/ETK, must be selected from the Electronic Parts Catalog, or other approved BMW resources, according to the respective vehicle type. Invoiced these items separately under the Repair Code listed in this bulletin.

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

Bulk Materials -Sublet

Billing Part Numbers	Description	Quantity*
83 21 5 A42 D33	Engine oil (0W-30 – 209-liter drum) (DN 1/10 Liter) Copyright ©2023 BMW of North America, Inc.	Sublet as applicable

Or:		
83 21 5 A42 D39	Engine oil (0W-30 – Tank Delivery (DN 1/10 Liter)	Sublet as applicable
Or:		
83 21 5 A2A F86	Engine oil (5W-30 – 209-liter drum) (DN 1 Liter)	Sublet as applicable
83 21 5 A2A F99	Engine oil (0W-30 - 6 x 1 Liter bottle, case) (DN 1 Liter)	Sublet as applicable
Or:		
83 21 5 A2A F83	Engine oil (5W-30 - 6 x 1 Liter bottle, case) (DN 1 Liter)	Sublet as applicable

CLAIM INFORMATION

Reimbursement for this Action will be via normal claim entry utilizing the applicable work package information below, and the additional work when required, together with the part numbers listed above that apply.

Plusposition (+) work	The vehicle is already in the workshop
Main work	The vehicle arrives for this Recall, no other Main work will be performed/claimed during this workshop visit

Only one Main work flat rate labor operation code can be claimed per workshop visit.

Repair Code:	0011520700	Ex Fx N51 N52 N55 Replace VANOS adjuster bolting
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Below are the special flat rate labor operation code choices for this action.

No VANOS Repair is Necessary

Work Pkg	Labor Operation	Description	Labor Allowance
# 1	00 75 662	Vehicle's VANOS units was already taken care of through another repair, or Technical Campaign on or after September 1, 2012 (Plusposition work)	1 FRU
Or:			
# 2	00 75 134	Vehicle's VANOS units was already taken care of through another repair, or Technical Campaign on or after September 1, 2012 (Main work)	1 FRU

Or an:

Applicable VANOS Repair is Necessary

Work Pkg	Labor Operation	Description	Labor Allowance
# 3	00 75 615	Replace the attachment bolts for the VANOS adjusters (Plusposition work)	As applicable
Or:			
# 4	00 75 091	Replace the attachment bolts for the VANOS adjusters (Main work)	As applicable
Or:			
# 5	00 75 616	Replace a VANOS adjustment unit	As applicable

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		unit screw connection (other side) (Plusposition work)	
Or:			
# 6	00 75 092	Replace a VANOS adjustment unit (one side) and a VANOS adjustment unit screw connection (other side) (Main work)	As applicable
Or:			
# 7	00 75 617	Replace both VANOS adjusters (Plusposition work)	As applicable
Or:			
# 8	00 75 093	Replace both VANOS adjusters (Main work)	As applicable

When applicable:

Additional Work for "WP # 3 to WP # 8"

Labor Operation	Description (Associated work)	Labor Allowance
00 75 663	Additional work for when emission warning light (MIL) is on	4 FRU

And, If also necessary, when

The VANOS Bolt Fragments cannot be found.

Labor Operation	Description (Associated work)	Labor Allowance
00 75 701	With the replacement of one or both VANOS adjustment units: Additional work/removing and installing engine oil pan to remove fragments	As applicable

And, for:

Applicable xDrive (AWD) Vehicles: Additional Work - Wheel Alignment (with 00 75 701)

Labor Operation	Description (Associated work)	Labor Allowance
00 75 724	Additional work/chassis measurement including adjusting the toe-in/if required according to the repair instructions (AWD)	Refer to the attachment for the FRU allowance information, only until it becomes available in the system
And, if necessary:		
00 75 725	Additional work for 00 75 724/set rear axle	

Claim Repair Comments

Only reference the SIB number and the work package (Pkg) number performed in the RO technician notes and the claim comments (For example: B11 07 23 WP 3), unless otherwise required by State law.

Sublet – Bulk Materials (RO and Claim Comments Required)

Sublet Code 4	Up to \$115.00	Reimbursement for the repair-related bulk materials, primarily in conjunction with performing labor operation 00 75 701 (Do not use the BMW part numbers for the claim submission)
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Sublet reimbursement calculation for claiming the applicable repair-related bulk materials (BMW part numbers) is at the dealer net price amount for the full and/or proportional quantities used plus your center's handling.

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

BMW Group's AIR Application Resource for Flat Rate Labor Operation Codes

To obtain the corresponding flat rate unit (FRU) allowance information from the BMW Group AIR application resource, start by entering the Chassis Number (the last seven (7) characters of the VIN, select the applicable Model if two or more vehicle choices show), or enter the full VIN (17 characters), click on the "Search" button. Next, click on the "Flat Rate Units" button and enter the flat rate labor operation code in the field to the right, click "Search" to display the Flat Rate Unit Group detail choices.

Consequential Repair (RO and Claim Comments Required)

When additional or other work and/or parts (cylinder head or the engine assembly) are required as a direct result of addressing the issue outlined in this Service Information bulletin, claim these items under the Repair Code in this bulletin together with the corresponding labor operation codes and their flat rate unit (FRU) allowance(s), including the diagnosis that applies (**SI B01 01 20 or B01 07 20**).

Please explain the reason for this consequential repair work (the why and the what) on the repair order and in the claim comments section.

Alternative Mobility Solution (AMS) for Vehicle Owners (RO and Claim Comments Required)

This Recall qualifies for Alternative Mobility Solution (AMS) expense reimbursement, claim this item under the Repair Code in this bulletin as follows:

- Sublet Code 2 - Itemize the claimed AMS sublet amount on the repair order and in the claim comment section.

Please refer to [SI B01 29 16](#) for additional information.

TREAD Act Reimbursement - Qualifying Prior Customer-Pay Repairs

BMW of North America, LLC (BMW NA) will reimburse qualifying customer-pay repairs on Affected Vehicles to address the issue described in this Service Information Bulletin that were performed **prior** to the release of this Recall.

The customer arrives at your workshop with an Affected Vehicle, and a customer-pay RO/invoice for a prior repair

Open a RO, create a repair order (RO) line item for the applicable open Recall work package that was performed.

After review and in conjunction with the Recall line item, when it is determined that the prior customer pay repair RO/invoice qualifies, create an additional RO line item for the reimbursement and claim it as described below.

Submit for both the completed Recall work package and for the customer-pay prior repair reimbursement.

Or:

The customer only presents your center with a customer-pay invoice for a prior repair

After review, if the vehicle (VIN) and the prior customer-pay repair RO/invoice both qualify:

When it is determined that the prior customer pay repair RO/invoice qualifies, open a RO, and create a RO line item for the reimbursement and claim it as described below.

Prior Customer-pay Invoice Review and Reimbursement Submission Procedure

Review and verify that the prior customer-pay RO/invoice (BMW center or by an independent repair shop) contains a repair that was performed to address the issue described in this Recall Service Information Bulletin.

When the prior repair qualifies, reimburse the customer (labor and parts).

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Submit for their prior customer-pay repair expense under Repair Code **85 99 00 12 NA** as follows:

- Sublet Code 3
- Dollar amount (with no markup)
- Comment: RECALL 23V-707: REPLACE VANOS ADJUSTMENT UNIT SCREWS - Reimbursement for allowable expenses that relate to performing the prior qualifying customer-pay repair
- Explain and itemize the claimed sublet amount on the RO and in the claim comment section

Retain the original customer pay RO/invoice in your files; this documentation may be requested by BMW during the claim review process.

Repairs that do not Qualify for Reimbursement

The diagnosis and repair of issues beyond the scope of the Recall (other unrelated vehicle issues). This exclusion also applies to repairs that were performed using (including those repairs that result from using) non-genuine BMW parts, and/or used BMW passenger car or light truck parts.

When the TREAD Act repair reimbursement claim is submitted as described above, it **will not close** the Open Safety Recall on the vehicle.

FEEDBACK REGARDING THIS BULLETIN

Technical Feedback	To submit feedback for the technical topic of this bulletin: Submit your feedback in the rating box at the top of this bulletin
Warranty Feedback	To submit feedback for the CLAIMS section of this bulletin: Submit an IDS ticket to the Warranty Department, or use the chat available in the Warranty Documentation Portal
Parts Feedback	To submit feedback for the PARTS section of this bulletin: Submit an IDS ticket to the Parts Department

Supporting Materials

[picture_as_pdf B110923 Attachment 23V-707-VANOS-FAQ-\(23Oct2023\).pdf](#)

[picture_as_pdf B110923 Attachment VANOS Repair Procedure.pdf](#)

[picture_as_pdf B110923 Attachment Recall Notice.pdf](#)

[picture_as_pdf B110923 Attachment AWD Wheel Align FRU \(Interim\) 12_2023.pdf](#)

SAFETY RECALL NOTICE

To: All Center Operators, Sales Managers, Service Managers, Parts Managers and Warranty Processors

RE: Recall 23V-707: Replace VANOS Adjustment Unit Screw Connection – B11 09 23

BMW AG is conducting a Voluntary Safety Recall (effective October 23, 2023) on a certain number of Model Year 2010 - 2013 BMW vehicles that were produced between September 2, 2009, and July 12, 2012.

Please be reminded that it is a violation of federal law (The Safety Act) for you to sell, lease or deliver any new motor vehicle covered by this notification until the recall repair has been performed. This means that Centers may not legally deliver new motor vehicles to consumers until they are fixed or use/sell replacement equipment/parts subject to this recall. Note also that substantial civil penalties apply to violations of the Safety Act.

Also, you should not sell, lease or deliver any Certified Pre-Owned or used vehicles subject to a safety recall until the repair is completed.

Please follow any special instructions that we provide to you for the return or disposition of recall parts.

We appreciate all your assistance with this Recall.

Safety Recall
23V-707
VANOS
Model Year 2010-2013
BMW 1 Series, 3 Series, 5 Series
BMW X1, X3, X5, Z4
(Models with inline 6-cylinder engine)
Issue Date: 10/23/2023

Q1. Which BMW Group models in the US are potentially affected by this Safety Recall?

Certain Model Year 2010-2013 BMW 1 Series, 3 Series, 5 Series, X1 SAV, X3 SAV, X5 SAV, and Z4 models in the US are potentially affected. *Please note that these vehicles have been previously covered by a BMW Extended Warranty program.*

Q2. What is the specific issue?

The VANOS assembly (engine) bolts may, over time, loosen, and eventually break. If this occurred, a reduced engine power “safe mode” may be activated. In some cases, the engine may not be able to be restarted after switching off and, in rare cases, the engine could stall which could increase the risk of a crash.

If your vehicle stalls, or if you notice a rough running engine, or unusual engine noise, which may include illumination of the Check Engine (or Service Engine Soon) warning lamp and/or a warning message in the instrument cluster, your vehicle may be experiencing this issue. If this occurs, you should carefully move away from traffic and pull over to a safe location as soon as possible. Do not continue to drive your vehicle. You should immediately contact the nearest authorized BMW center to arrange for pickup and transportation of your vehicle to the BMW center. If you are not the only driver of this vehicle, please advise all other drivers and passengers of this important information.

Q3. Why are other models / vehicles not included in this Safety Recall?

Other models have a VANOS system with a different specification.

Q4. Can I continue to drive my vehicle?

Yes. However, when you are notified by BMW of this Safety Recall, please contact an authorized BMW center to schedule an appointment as soon as possible. For the latest updates to this Safety Recall, please visit bmwusa.com/recall. **If you are not the only driver of this vehicle, please advise all other drivers of this important information.**

Q5. How did BMW Group become aware of the issue?

BMW Group became aware of the issue through its quality control procedures.

Q6. How will I be informed of this Safety Recall?

Owners of potentially affected vehicles will be notified via First Class mail and requested to schedule an appointment with an authorized BMW center to have the remedy performed. Owners can locate their nearest authorized BMW center at bmwusa.com/dealer.

To ensure BMW has the most up-to-date contact and vehicle information, owners should register their vehicle at bmwusa.com/myBMW. Registration is free and will give them access to other information specific for their BMW vehicle. Alternatively, owners can visit bmwusa.com/recall and click on “**Manage recall notices and contact information**”.

Q7. How will my vehicle be remedied?



Potentially affected vehicles will have the VANOS attachment bolts replaced for free which should take about four hours.

Q8. Do I have to wait for BMW to contact me to have the remedy performed?

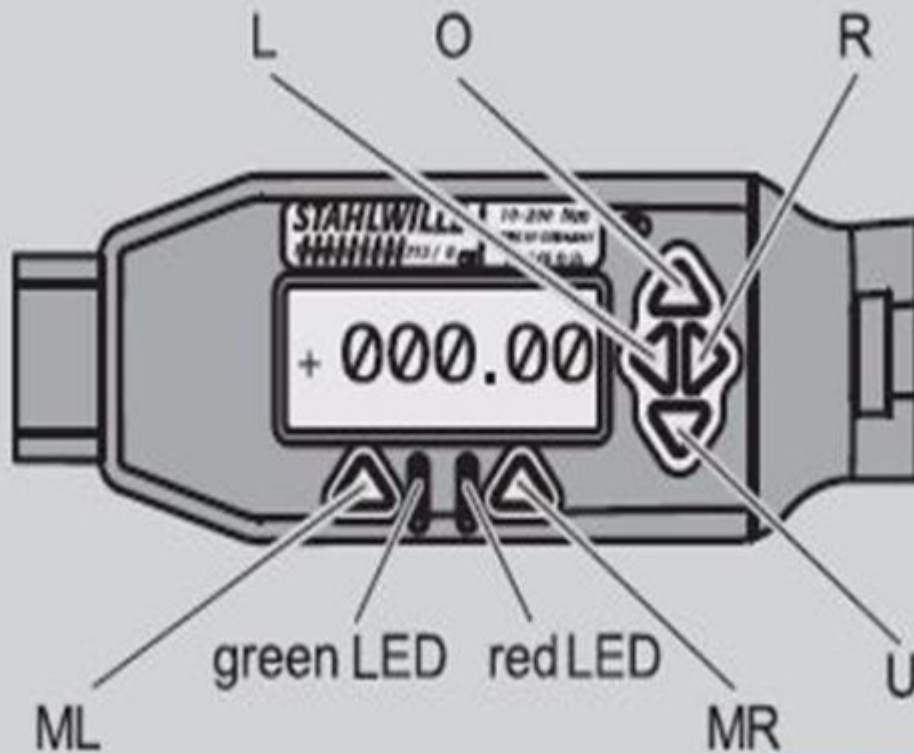
Yes. We are in the process of implementing this Safety Recall to ensure that the necessary parts, tools, and procedures are available. For the latest updates to this recall, please visit bmwusa.com/recall.

PROCEDURE

Follow the repair procedure outlined below; it contains modified instructions that optimize the repair procedure. This modified procedure is reflected in the labor operation time allowances.

Required special tools:	
	<p>Socket for Torque Wrench</p> <p>P/N 83 30 2 333 891</p> <p>Distributed via Automatic Tool Shipment. Refer to SI B04 08 14.</p>
	<p>Torque Wrench</p> <p>P/N 81 64 0 418 185</p> <p>Distributed via Automatic Tool Shipment. Refer to SI B04 08 14.</p>

Torque Wrench Set Up:	
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GRUSB114-55

Initial set up of torque wrench must be completed when using the tool for the first time.

Push any of the green buttons to turn on.

Press the "ML" button to select language, scroll up and down with the "O" and "U" buttons to select the English language.

Press the "MR" button to select.

Press the "ML" button to enter the menu, select "OK" and scroll using the "O" and "U" buttons to select "presets". Select the "MR" button to select "modify".

Scroll down using the "U" button to "shutdown time". Select the "MR" button to select "modify". Increase the time by using the "O" button, press repeatedly until "9" is displayed. Select the "MR" button to "save" the setting. This setting will now automatically turn off the tool after 9 minutes of inactivity and it will be saved for the next usage.

Select "return" twice with the "ML" button to go back to the main screen.
Select "menu" with the "ML" button

Select "OK" with the "MR" button

Scroll with the "O" and "U" buttons to "presets" and select "modify" with the "MR" button

Scroll with the "O" and "U" buttons to "unit" and select "modify" with the "MR" button

Scroll with the "O" and "U" buttons to "Nm" and select "OK" with the "MR" button

Scroll with the “O” and “U” buttons to “adaptor length” and select “modify” with the “MR” button

Scroll with the “O” and “U” buttons and the “L and R” buttons to enter the digits. Enter 17.50 mm and select “OK” with the “MR” button. This setting identifies the length of the tool, i.e. ratchet head or crows foot wrench end.

Select “return” twice with the “ML” button to go back to the main screen.

If the batteries are replaced the initial set up will need to be performed again.

Selecting and Entering Rotation Angle Mode:

Press the “L” and “R” buttons at the same time. The “preload” screen should now be displayed. Preload is the initial torque setting.

Scroll with the “O” and “U” buttons and the “L and R” buttons to enter the digits. Enter 6.00 (6 Nm initial torque) and select “OK” with the “MR” button. The angle torque screen will be displayed automatically when this is complete.

Scroll with the “O” and “U” buttons and the “L and R” buttons to enter the digits. Enter 60.00 (60 degree angle torque) and select “OK” with the “MR” button. The screen will now state it is the “direct” mode.

Press the “tare” to zero the measurement. The torque wrench is now ready for use.

These values will stay stored as long as the tool is powered up, if the tool turns off after 9 minutes of inactivity then the initial torque and angle torque will be erased and will not be available for the next usage. The values will need to be reentered if the torque wrench turns off.




Preliminary Work:

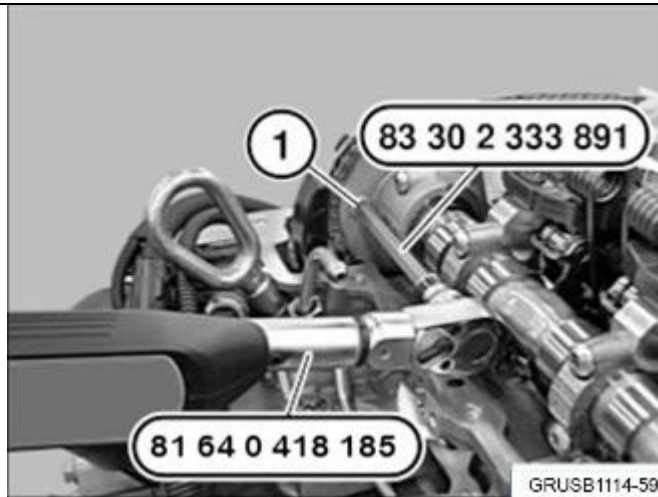
1. Remove the cylinder head cover as per Repair Instruction 11 12 000 “Removing and installing or sealing cylinder head cover”.

2. Remove the fan and fan cowl as per Repair Instruction 17 11 035 “Removing and installing/replacing fan cowl with electric fan”.

IMPORTANT: Aluminum bolts must not be reused. If the aluminum bolts are removed then they must be replaced with new bolts.

IMPORTANT: Never loosen more than one VANOS assembly bolt (1-4) at a time.

Intake VANOS Adjustment Unit:	
 <p>GRUSB1114-56</p>	<p>3. Replace and torque the aluminum bolts (1-4) one at a time.</p> <p>Note: 1-4 is not a sequence they can be replaced in any sequence.</p>
 <p>GRUSB1114-57</p>	<p>4. Turn the engine by hand using a suitable tool on the crankshaft central bolt to align one of the bolts (1) as shown in the illustration.</p> <p>Remove the bolt (1) using the required special tool (2).</p>
 <p>GRUSB1114-58</p>	<p>5. Clean the threads on the VANOS assembly using compressed air to remove the excessive oil.</p> <p>Always wear safety glasses.</p>



6. **IMPORTANT: The bolts require initial torque and angle torque. Observe the procedures in this step and the next step very carefully!**

Install one new P/N 11 36 8 602 263 aluminum VANOS bolt and apply the initial torque using the required special tools to the specification below.

Initial torque: 6 Nm

Turn the torque wrench very slowly and do not over torque the bolt. The handle of the torque wrench will vibrate and the green led will briefly blink when the 6 Nm has been reached.

Angle torque: 60°

The torque wrench will automatically switch to angle torque and show zero degrees. Begin turning the torque wrench. The red and green LED's will blink on the tool warning the technician that the desired value is approaching. When 60 degrees has been reached the handle will vibrate and the green LED will illuminate. The screen may or may not record the angle torque. Do not be alarmed, if the screen freezes and captures a value that is a few degrees lower than the desired value.

Do not rotate the torque wrench any further after the handle vibrates and both of the LED's illuminate.



7. While performing the angle torque the digital screen on the torque wrench will display the current Nm meter value. This value should be between **8 Nm – 14 Nm**.

If the displayed value is not within the specification then the bolt will need to be removed and replaced with a new bolt again. Repeat as necessary.

To reset torque wrench and clear screen to Nm again just press the "MR" button to continue replacing additional bolts.

8. If any of the bolts were loose or broken during this procedure then the VANOS assembly will need to be replaced. Refer to step 14.

If no bolts were found loose then repeat steps 4-6 for the remaining 3 bolts on the VANOS gear assembly. It is good practice to mark each bolt head as it is replaced with a felt marker so that one is not mistaken and removed again.

When all of the intake VANOS assembly bolts have been replaced successfully then proceed to step 9.

Exhaust VANOS Adjustment Unit:



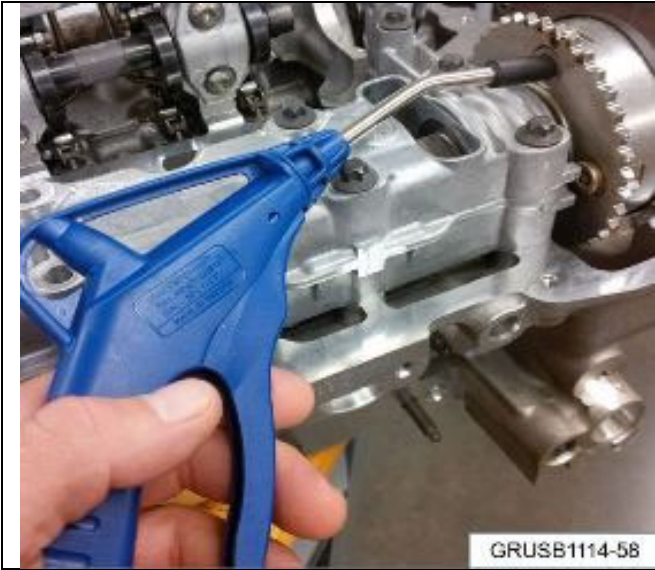
9. Replace and torque aluminum bolts (1 - 4) one at a time.



10. Turn the engine by hand using a suitable wrench on the crankshaft central bolt to align the bolt (1) with as shown in the illustration.

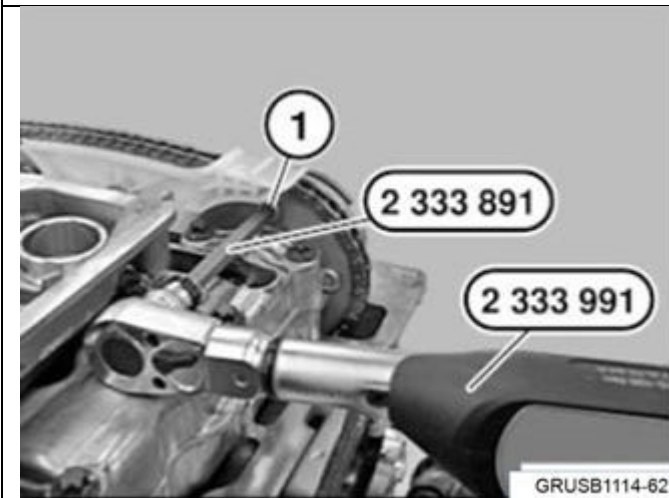
Remove the bolt (1) using the required special tool.

Note: The tool will be on a slight angle when loosening.



11. Clean the threads on the VANOS assembly using compressed air to remove the excessive oil.

Always wear safety glasses.



12. **IMPORTANT: The bolts require initial torque and angle torque. Observe the procedures in this step and the next step very carefully!**

Install one new P/N 11 36 8 602 263 aluminum VANOS bolt and apply the initial torque using the required special tools to the specification below.


Initial torque: 6 Nm

Turn the torque wrench very slowly and do not over torque the bolt. The handle of the torque wrench will vibrate and the green led will briefly blink when the 6 Nm has been reached.

Angle torque: 60°

The torque wrench will automatically switch to angle torque and show zero degrees. Begin turning the torque wrench. The red and green LED's will blink on the tool warning the technician that the desired value is approaching. When 60 degrees has been reached the handle will vibrate and the green LED will illuminate. The screen may or may not record the angle torque. Do not be alarmed, if the screen freezes and captures a value that is a few degrees lower than the desired value.

Do not rotate the torque wrench any further after the handle vibrates and both of the LED's illuminate.

	Note: The tool will be on a slight angle when Tightening.
	<p>13. While performing the angle torque the digital screen on the torque wrench will display the current Nm meter value. This value should be between 8 Nm – 14 Nm.</p> <p>If the displayed value is not within the specification then the bolt will need to be removed and replaced with a new bolt again. Repeat as necessary.</p> <p>To reset torque wrench and clear screen to Nm again just press the “MR” button to continue replacing additional bolts.</p>
<p>14. If any of the bolts were loose or broken during this procedure then the VANOS assembly will need to be replaced. Refer to step 15.</p> <p>If no bolts were found loose then repeat steps 4 - 6 for the remaining 3 bolts on the VANOS gear assembly. It is good practice to mark each bolt head as it is replaced with a felt marker so that one is not mistaken and removed again. Refer to step 16.</p>	
<p>15. If any of the VANOS bolts were found loose or broken then that VANOS unit will need to be replaced. Refer to Repair Instruction 11 36 046 “Removing and installing or replacing intake and exhaust camshaft adjusters”</p>	
<p>16. Reassemble vehicle as per the applicable repair instructions.</p>	

Applicable xDrive (AWD) Vehicles: Additional Work – Front Wheel Alignment (with 00 75 701)

Labor Operation	Description (Associated work)	Labor Allowance
00 75 724	Additional work/chassis measurement including adjusting the toe-in/if required according to the repair instructions (AWD)	Refer to the table below for FRU allowance information, only until it becomes available in the system

For the VIN being repaired, obtain either the “AG Model Code” or the “Lead type.”

Example:

Warranty Vehicle Inquiry (WVI)	AIR
AG Model Code/Desc: NV13 - 528i xDrive Sedan	Lead type NV13

Then use “Control” “F” to search by the vehicle’s “AG Model Code” / ”Lead type” to obtain the FRU allowance that applies.

AG Model Code/Lead type	Series	Motor	Transmission	Drive	Labor Allowance
NV13	E60	N52	MECH	AWD	14
NV23	E60	N52	AUT	AWD	14
FE43	E70	N52	AUT	AWD	14
ZV43	E70	N55	AUT	AWD	14
FG23	E71	N55	AUT	AWD	14
PC03	E83	N52	AUT	AWD	13
PC73	E83	N52	MECH	AWD	13
PC83	E83	N52	AUT	AWD	13
PC93	E83	N52	MECH	AWD	13
PK53	E90	N51	MECH	AWD	13
PK63	E90	N51	AUT	AWD	13
PK73	E90	N52	MECH	AWD	13
PK83	E90	N52	AUT	AWD	13
PL53	E90	N55	MECH	AWD	13
PL63	E90	N55	AUT	AWD	13
UU33	E91	N52	MECH	AWD	13
UU43	E91	N52	AUT	AWD	13
KF03	E92	N55	AUT	AWD	13
KF33	E92	N52	MECH	AWD	13
KF43	E92	N52	AUT	AWD	13
KF53	E92	N51	MECH	AWD	13
KF63	E92	N51	AUT	AWD	13
KF93	E92	N55	MECH	AWD	13
WC33	E92	N52	MECH	AWD	13
WC43	E92	N52	AUT	AWD	13
WV53	E92	N51	MECH	AWD	13
WV63	E92	N51	AUT	AWD	13
FU83	F10	N55	AUT	AWD	15
WX63	F25	N52	AUT	AWD	14
WX83	F25	N55	AUT	AWD	14

Applicable xDrive (AWD) Vehicles: Additional Work – Rear Wheel Alignment (with 00 75 724)

And, if necessary:

Labor Operation	Description (Associated work)	Labor Allowance
00 75 725	Additional work for 00 75 724/set rear axle	Refer to the table below for FRU allowance information, only until it becomes available in the system

AG Model Code/Lead type	Series	Motor	Transmission	Drive	Labor Allowance
NV13	E60	N52	MECH	AWD	6
NV23	E60	N52	AUT	AWD	6
FE43	E70	N52	AUT	AWD	6
ZV43	E70	N55	AUT	AWD	6
FG23	E71	N55	AUT	AWD	6
PC03	E83	N52	AUT	AWD	4
PC73	E83	N52	MECH	AWD	4
PC83	E83	N52	AUT	AWD	4
PC93	E83	N52	MECH	AWD	4
PK53	E90	N51	MECH	AWD	4
PK63	E90	N51	AUT	AWD	4
PK73	E90	N52	MECH	AWD	4
PK83	E90	N52	AUT	AWD	4
PL53	E90	N55	MECH	AWD	4
PL63	E90	N55	AUT	AWD	4
UU33	E91	N52	MECH	AWD	4
UU43	E91	N52	AUT	AWD	4
KF03	E92	N55	AUT	AWD	4
KF33	E92	N52	MECH	AWD	4
KF43	E92	N52	AUT	AWD	4
KF53	E92	N51	MECH	AWD	4
KF63	E92	N51	AUT	AWD	4
KF93	E92	N55	MECH	AWD	4
WC33	E92	N52	MECH	AWD	4
WC43	E92	N52	AUT	AWD	4
WV53	E92	N51	MECH	AWD	4
WV63	E92	N51	AUT	AWD	4
FU83	F10	N55	AUT	AWD	6
WX63	F25	N52	AUT	AWD	6
WX83	F25	N55	AUT	AWD	6