

SUBJECT **VANOS Rattle Noise After Engine Start**

MODEL E39 M5 and E52 Z8 with S62 engine produced up to 11/30/00.

SITUATION A rattling noise coming from the front of the engine (VANOS area) may be heard for a few seconds after start up.

CAUSE The VANOS adjusting units may cause a momentary rattling noise after the engine is started due to varying torque of the camshafts before sufficient VANOS adjustment oil pressure is built up.

When the engine is switched off, oil bleeds out of the high-pressure chamber in the VANOS adjustment cylinder. This can cause the VANOS adjustment piston to move freely against the housing during engine start up causing the momentary rattling noise.

This noise has **no** effect on engine power output or durability.

CORRECTION M5 and Z8 vehicles produced from 12/1/00 incorporate a VANOS accumulator shutoff valve which prevents oil bleed off of the high-pressure chamber after the engine is switched off.

On a customer complaint basis only, a VANOS accumulator shutoff valve can be installed to eliminate the momentary rattling noise after the engine is started on vehicles produced before 12/1/00.

Note: Three VANOS accumulator shutoff valve kits have been developed to accommodate the running production changes on M5 and Z8 vehicles.

-- Kit part number 11 36 7 832 855 should be used on M5 vehicles produced up to 8/31/00 and 11 36 7 832 856 should be used on Z8 vehicles produced up to 9/1/00. These kits include electrical and mechanical components for the VANOS accumulator shutoff valve installation.

Kit part number 11 36 7 832 858 should be used on M5 and Z8 vehicles produced from 9/1/00 up to 11/30/00. This kit includes mechanical components for the VANOS accumulator shutoff valve installation since the wiring harness is already installed during production on these vehicles.

Section A of the procedure below outlines the wiring installation instructions needed to install the VANOS accumulator shutoff valve on **M5 and Z8 vehicles produced up to 8/31/00**.

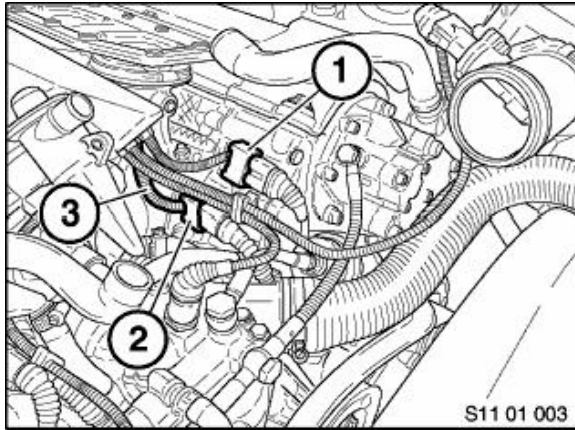
Section B of the procedure below outlines the installation of a VANOS accumulator shutoff valve (mechanical components only since the wiring harness is already installed during production on these vehicles) on **M5 and Z8 vehicles produced from 9/1/00 up to 11/30/00**.

Note: Both section A and B procedures must be used on M5 and Z8 vehicles produced up to 8/31/00 to complete the VANOS accumulator shutoff valve installation.

PROCEDURE **Section A:** VANOS accumulator shutoff valve wiring harness installation - applies to **M5 and Z8 vehicles produced up to 8/31/00**.

1. Disconnect the battery.

2. Remove the air intake duct (intake air silencer upper section, air mass meter, bellows) for cylinder banks 1 and 2.
3. Remove intake manifold as outlined in repair manual group 11 section 11 61 050 .

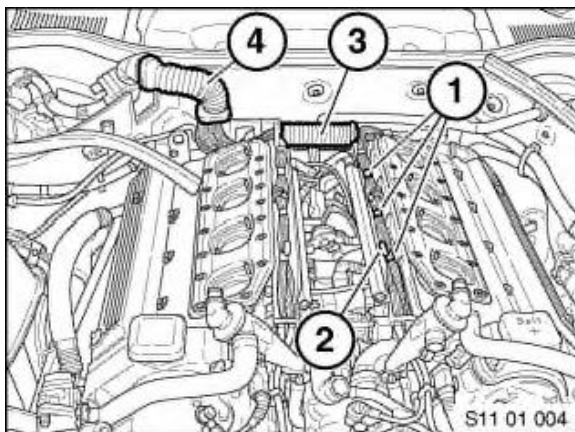


4. Separate plug connections:
 - (1) VANOS connector, cylinder bank 2
 - (2) Oil switchover valve connector, generator wire terminal 61, thermal oil level sensor
 - (3) Corrugated tubing
5. Remove the fabric tape (water proofing tape for corrugated tubing) from end of wire harness (2)

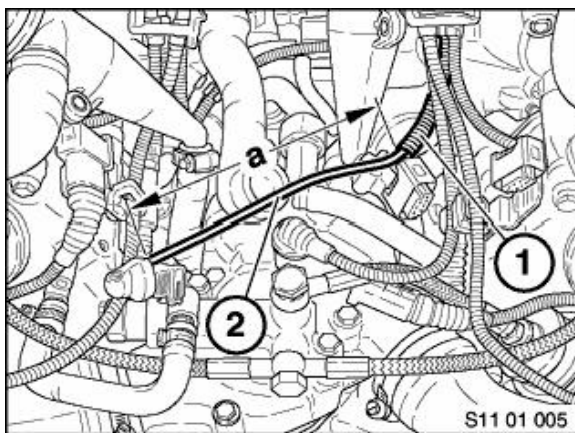
6. Carefully unclip and raise the wiring duct covers located next to the fuel rail on both cylinder banks 1 and 2.

Important: If any of the cover retaining clips break off when removing the wiring duct covers they must be replaced. New covers are included in kit part number 11 36 7 832 855.

7. Remove E box cover.



8. Remove wire ties (1)
 - (1) Wire ties
 - (2) Crimp connector X6461
 - (3) Bellows connecting wiring duct for cylinder bank 1 and 2
 - (4) Bellows connecting wiring duct for cylinder bank 1 and E box



9. Remove the fabric tape (water proofing tape for corrugated tubing) from end of wire harness (1)
 - (1) Fabric water proofing tape located inside the end of the corrugated tubing
10. Thread the additional wire harness (2) red-violet and brown wires through the corrugated tubing (1) until

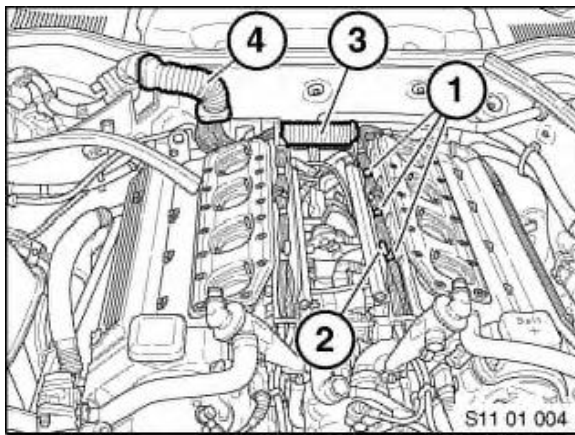
distance (a) has been reached.

(2) Additional wire harness included in parts kit

(a) = 175mm (approx. 7 inches)

Installation Notes: Use a piece of slightly bent welding or tie wire to assist in carefully threading the wires through the corrugated tubing.

Attach the brown wire to the partially threaded red-violet wire with tape and carefully thread both wires through the corrugated tubing until distance (a) has been reached.

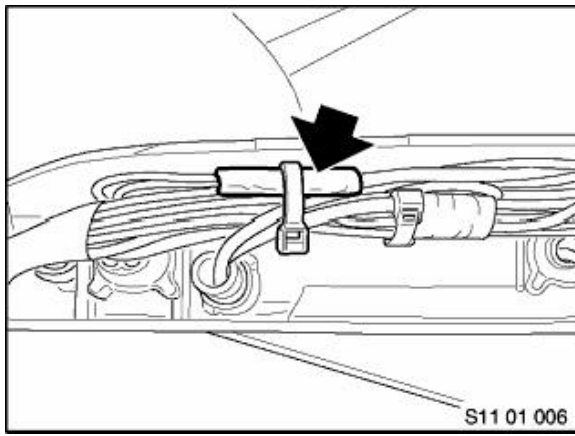


11. Route the red-violet wire through bellows (3) and (4) into the E box.

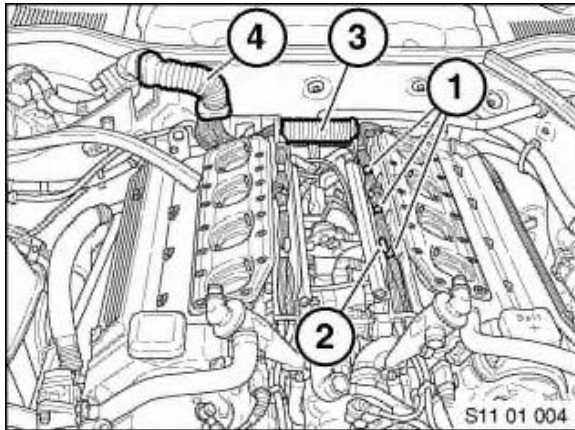
12. Plug the red-violet wire into the DME connector, module 2, pin 8.

Note: If the connector on the end of the red-violet wire is damaged during the threading process it should be repaired using the 100mm (4 inch) piece of red-violet wire with the new connector included in the parts kit. To perform this repair, cut off 100mm of the damaged red-violet wire and attach new wire section using a butt connector (PN 61 13 8 353 747) and shrink tubing (PN 61 13 1 379 833) found in BMW electrical repair kit number IV.

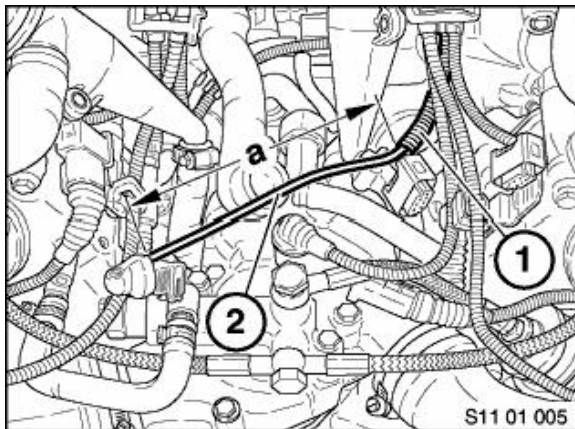
13. Using electrical tape secure the red-violet wire in the E box and pull back any excess length of wire into the wire duct for cylinder bank 2.
14. Cut ground wires - 1 x brown, cross section 2.5mm and 2 x black-brown, cross section 0.5mm - directly at crimp connector X6461 (green or blue protective cap). See illustration S11 01 004 item (2) above.
15. Slide shrink tubing (PN 61 13 1 379 833) onto the brown 2.5mm ground wire. Plug the brown 2.5mm ground wire, the two black-brown 0.5mm wires and new brown 0.75mm into butt connector (PN 61 13 8 353 748) and crimp connection.



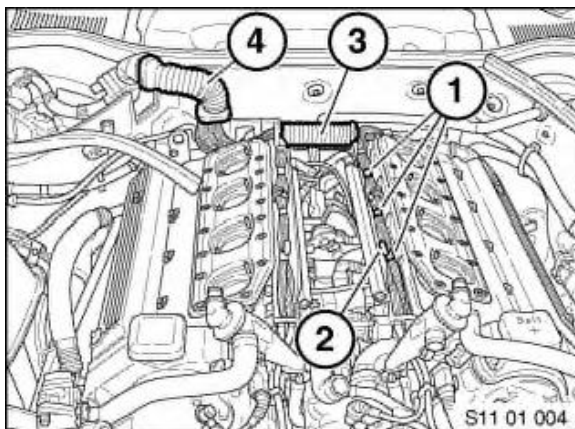
16. Install shrink tubing on butt connector as show.



17. Reinstall 3 wire ties as shown(1).



18. Wrap butylene tape (water proofing tape) around the end of the corrugated tubing (1) to assure a proper seal.



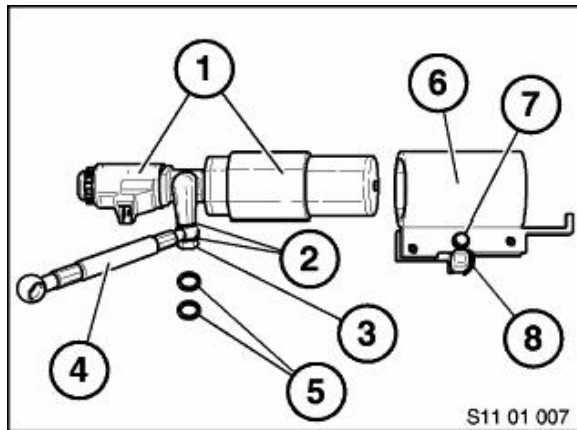
Note: When reinstalling wire harness bellows boots, items (3) and (4), insure that the double lip seal connections at the ends are installed properly to avoid leaks.

19. Reinstall the E box cover.

20. Reinstall wiring duct covers on both cylinder banks.

21. Reinstall intake manifold as outlined in repair manual group 11 section 11 61 050 .

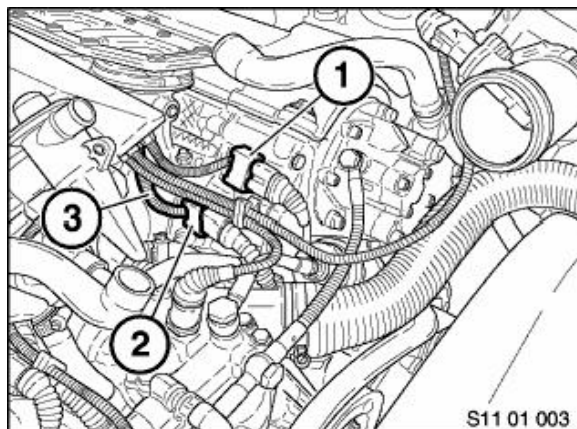
Section B: The procedure below outlines the installation of a VANOS accumulator shutoff valve (mechanical components only) on **M5 and Z8 vehicles produced from 9/1/00 up to 11/30/00.**



Parts kit part number 11 36 7 832 858 includes:

- (1) VANOS accumulator with electric shutoff valve
PN 11 36 7 832 189
- (2) Seal washer A10 x 13 (Qty = 2)
PN 07 11 9 963 072
- (3) Hollow bolt PN 11 36 7 832 139
- (4) Hose PN 11 36 7 832 174
- (5) Seal washer A12 x 15 (Qty = 2)
PN 07 11 9 963 129
- (6) Bracket PN 11 36 7 832 158
- (7) Hex bolt with washer M6 x 14
PN 07 11 9 901 436
- (8) Clip PN 12 51 2 246 906

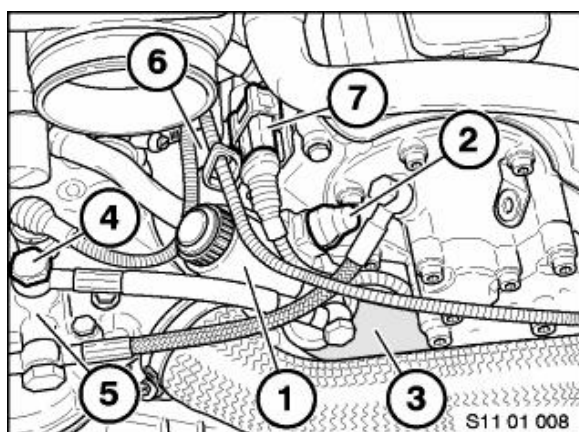
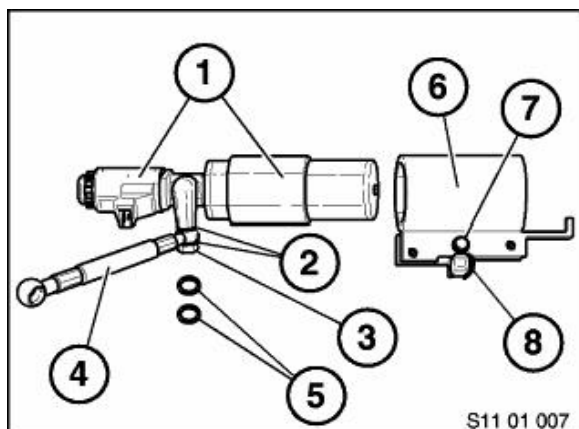
- 1. If not already removed (repairs performed in Section A), remove the air intake duct (intake air silencer upper section, air mass meter, bellows) for cylinder bank 2.
- 2. Remove the radiator fan/clutch assembly. See repair manual group 11, section 11 52 020 .
- 3. Remove the main fan belt. See repair manual group 11, section 11 28 010 .
- 4. Remove the front engine lifting eye bracket.



- 5. Disconnect plug (1) and remove the wire harness plug housing from the bracket.
- 6. Disconnect plug (2) and unclip the corrugated tubing for this wire at the VANOS accumulator bracket.

7. Remove the VANOS accumulator with connecting hose (to the oil distributor) and bracket.

Important: The hollow bolt (PN 11 36 1 407 716) used to secure the hose to the oil distributor and both M6 x 25 hex bolts with washers (PN 07 11 9 900 249) used to secure the accumulator bracket to the timing case cover are still needed. Do not discard.



8. Pre-fit the hex bolt with washer (7) to bracket (6). Only hand tighten the bolt so that the new VANOS accumulator (1) can be easily pushed into the bracket (6). Install clip (8) on bracket (6).
9. Attach the bracket (6) to the timing case cover using the two M6 x 25 hex bolts. Hand tighten bolts only.
10. Pre-fit connecting hose (4) to the VANOS accumulator (1) using hollow bolt (3) and two seal washers (2). Hand tighten bolt only.
11. Slide the new VANOS accumulator (1) into bracket (3). Slide accumulator in up to stop on bracket.
12. Pre-fit the connecting hose to the oil distributor (5) using hollow bolt (4) and two seal washers. Hand tighten bolt only.

(1) VANOS accumulator with electric shut off valve

(2) Plug connector for electric shut off valve

(3) Bracket

(4) Hollow bolt (oil distributor connection)

(5) Oil distributor

(6) Oil switchover valve connector, generator wire terminal 61, thermal oil level sensor

(7) VANOS connector, cylinder bank 2

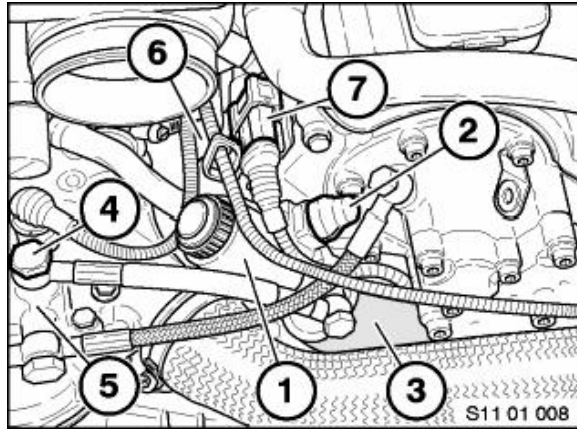
13. Position all installed components and tighten all bolts.

Torque specifications:

Hollow bolt M12 for connecting hose to oil distributor = 20 Nm (14.7lb.ft.)

Hollow bolt M10 for connecting hose to VANOS accumulator = 13 Nm (9.6lb.ft.)

M6 hex bolts for bracket to timing case cover = 10 Nm (7.4lb.ft.)



14. Plug connector (2) onto VANOS accumulator shutoff valve
15. Plug in connector (6). Clip corrugated tubing for this wire onto the VANOS accumulator bracket clip.
16. Lock connector housing into support and plug in connector (7)

17. Reinstall the front engine lifting eye bracket.

18. Reinstall the main fan belt.

19. Reinstall the radiator fan/clutch assembly.

20. Reinstall the air intake duct (intake air silencer upper section, air mass meter, bellows) for cylinder bank 2.

Reprogram the Engine Control Module (ECM/DME) on all M5 and Z8 vehicles produced prior to 9/1/00 using DIS or MoDiC software version CD 26 or higher. This reprogramming will allow for the activation of the VANOS accumulator shut off valve.

Note: This data is included in the Engine Control Module (ECM/DME) on M5 and Z8 vehicles produced from 9/1/00.

Procedure for reprogramming the Engine Control Module (ECM/DME):

1. Using CD26 or higher, reprogram the Engine Control Module (ECM/DME).
2. Using the DIS/MoDiC, select:
 - Programming
 - 3 "DME Programming"
 - 2 "Exchange control unit"
 - 1 "Determine basic control unit"
 - "Is faulty control unit still installed in car" select "YES"

-- "Turn on ignition - start automatic determination" select "YES"

-- Automatic determination active - please wait"

-- Follow the directions to complete the programming

Clear the fault memory after reprogramming.

The following numbers (reference only) will be installed after programming with CD26:

Vehicle	Basic control unit	Programmed control unit
M5	7 832 339	7 832 350
	7 833 151	7 833 164
Z8	7 832 339	7 832 358
	7 833 151	7 833 161

Basic and Programmed control unit numbers are subject to change with future DIS software releases.

PARTS INFORMATION

Part Number	Description	Quantity
11 36 7 832 855	VANOS accumulator shutoff valve kit. Includes <u>electrical and mechanical components</u> for M5 vehicles produced up to 8/31/00.	1
11 36 7 832 856	VANOS accumulator shutoff valve kit Includes <u>electrical and mechanical components</u> for Z8 vehicles produced up to 8/31/00.	1
11 36 7 832 858	VANOS accumulator shutoff valve kit Includes <u>mechanical components</u> for M5 and Z8 vehicles produced from 9/1/00 up to 11/30/00.	1

WARRANTY INFORMATION

Covered under the terms of the BMW New Vehicle Limited Warranty.

Defect Code	11 36 92 39 00
Labor Operation:	00 52 362 Install VANOS accumulator shutoff valve (mechanical components only) on M5 and Z8 vehicles produced from 9/1/00 up to 11/30/00.
Labor Allowance:	10 FRU
Labor Operation:	00 52 363 Install VANOS accumulator shutoff valve

(mechanical components and wiring harness)
on **M5 and Z8 vehicles produced up to 8/31/00.**

Labor Allowance: 58 FRU

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.