

3.4 Adaptive Damping System (ADS II) with electronic level control

Diagnosis - Function Test

Preliminary testing

Read out DTC, actual/nominal values and perform activations using Hand-Held Tester (HHT).



- Prior to performing any repairs, read out DTC memory from the ADS control module using the HHT.

The HHT display indicates the defective components or refers directly to the appropriate test step in the corresponding Diagnostic Manual chapter.

1. Connect the HHT to data link connector (X11/4) as shown section 0.
2. Ignition: **ON**
3. Read DTC memory from ADS control module.
4. Read out nominal/actual value displays.
5. Perform component activations.
6. Perform repairs according to DTC memory readout.
7. After completing repairs erase DTC memory.



Customers which have driveways with extreme approach/exit angles or travel frequently on bad road surfaces may have the vehicle's ADS control module (N51) reprogrammed (see HHT menu selection "Programming") for an increased stage 1 ride height (+15 mm) at vehicle speeds below 35 mph (58 km/h) with the switch **pressed**.

After reprogramming the ride height (as described above), mark the ADS control module with a **red dot** for identification purposes. The stage 2 increased ride height is not affected by this programming change. In any case, the increased ride height is cancelled when the vehicle speed exceeds 37 mph (62 km/h).

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Component Locations

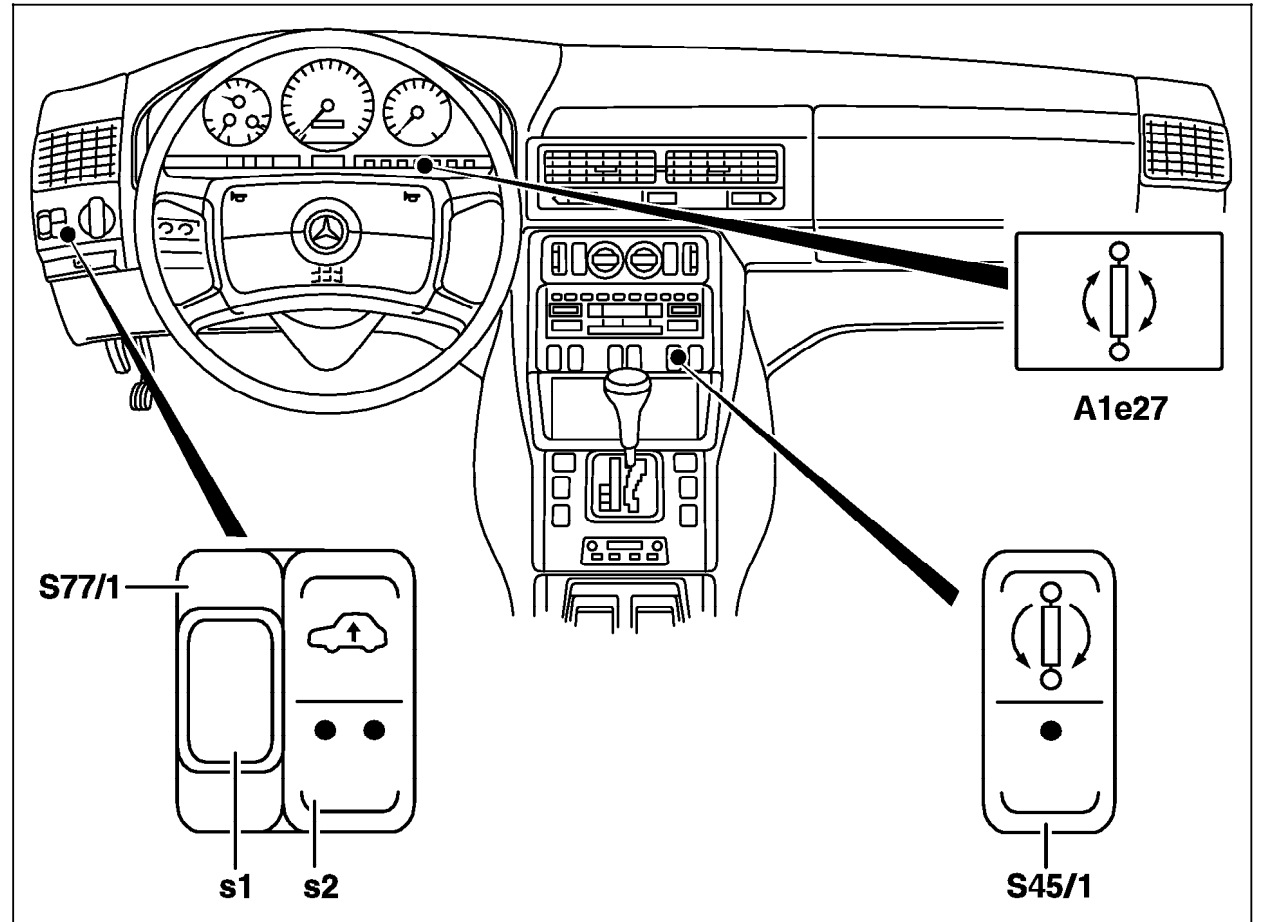


Figure 1

- A1e27 ADS MIL
- S45/1 Comfort/sport switch
- S77/1 Level adjustment switch
- S77/1s1 Level control lock-out switch
- S77/1s2 High/normal level control switch

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Diagnosis – Function Test

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy ¹⁾
⇒ 1.0 ADS MIL (A1e27)	Ignition: ON Level adjustment switch (S77/1) in position: normal level Engine: at Idle	A1e27: ON A1e27: OFF	Read out DTC memory and actual value display with HHT. Steering angle sensor (N49) not initialized, turn steering wheel from stop to stop. DTC stored: read out DTC memory and actual value display.
⇒ 2.0 Comfort/sport switch (S45/1)	Switch (S45/1) set to: Sport Switch (S45/1) set to: Comfort	LED in switch (S45/1): ON LED in switch (S45/1): OFF	Read out DTC memory and actual value display. Read out DTC memory and actual value display.

¹⁾ Observe Preparation for Test, see 22.

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Diagnosis – Function Test

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy ¹⁾
⇒ 3.0 High/normal level control switch (S77/1s2)	Engine: at Idle High/normal level control switch (S77/1s2): normal level	A1e27: OFF LED's in high/normal level control switch (S77/1s2): OFF	Read out DTC memory and actual value display.
Raise vehicle level	High/normal level control switch (S77/1s2): stage 1 raise (press switch once)	One LED in S77/1s2: blinks Vehicle level is raised up to 15 mm. After reaching level, LED remains lit. Note: This process occurs slowly. Increase engine speed to 2000 rpm to speed up raising procedure.	32 Hydraulic oil pump. 33 Test leveling valve pressure.
Raise vehicle level	High/normal level control switch (S77/1s2): normal level	Vehicle level lowers. LED's in S77/1s2: OFF	
Raise vehicle level	High/normal level control switch (S77/1s2): stage 2 (press switch twice)	Two LED's in switch: blink Vehicle level raised up to 30 mm. After reaching level, LED's remain lit. Note: This process occurs slowly. Increase engine speed to 2000 rpm to speed up raising procedure.	32 Hydraulic oil pump. 33 Test leveling valve pressure.

¹⁾ Observe Preparation for Test, see 22.

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Diagnosis – Function Test

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy ¹⁾
Hold vehicle level	Ignition: OFF 1 minute.	Vehicle remains at raised level.	
⇒4.0 Level control lock-out switch (S77/1s1)	Ignition: ON Press: level control lock-out switch (S77/1s1) Engine: at Idle	LED's in high/normal level control switch (S77/1s2): ON . Lamp in S77/1s1: ON LED's in high/normal level control switch (S77/1s2): OFF Lamp in S77/1s1: ON LED's in high/normal level control switch (S77/1s2): OFF . A1e27 (MIL): ON	Read out DTC memory and actual value display.

¹⁾ Observe Preparation for Test, see 22.