

Soft Top Does Not Close Completely or is Intermittent in Operation

Topic number	LI77.33-P-075246
Version	7
Function group	77.33 - Vario roof, soft top - mechanical system
Date	2/23/24
Validity	Model series 232
Reason for change	Repair information changed

Complaint

Soft top does not close:

A: Soft top does not close completely

B: Fault message following teach-in process

Cause

Causes of repair needs for A and B:

A. Locking hooks may require adjustment or Soft Top Flap Assembly does not reach intermediate position

B. Calibration of the Soft Top Flap Assembly may be required

Remedy

Analysis to identify the remedy:

If available, perform a software update of the rear passenger compartment control unit (N22/6). Then reconstruct the fault profile. If faults continue to be present: Check the fault codes in N22/6 (Rear passenger compartment control unit) in the quick test.

- B196277 and/or B196377: Perform teach-in process. Select "YES" for the question regarding part exchange. If fault message appears following the process, continue with A. If no fault message appears, check the function. If the soft top does not function, continue with B.
- B228646 and/or B228654: Execute rear passenger compartment control unit (N22/6) control unit log and continue with step A.
- B180013 and/or B180071 and/or B180077: Check the wiring at the engine of the soft top lock in the top of the soft top as well as the Hall sensor above.
- If nothing visually can be seen: Open a TIPS Case
- If remedy is successful: Processing is complete; otherwise, continue with step B.

If none of the specified fault codes occurs in the quick test, continue with step B.

A. Fault cause GAK calibration

Review of "Soft Top Flap Assembly" in control unit log: See picture 1.1 in "Pictures of GAK calibration".

Example for OK values and target range:

1: GAK1_left_Open 738 Specified value: >660;

example: 730 OK, 643 NOK

2: GAK1_left_closed -309 Specified value: > -336;

example: -335 OK, -341 NOK

3: GAK1_left_Hall_Sensor_activation_from_Closed_Position -46 Specified value: < -20;

example: -23 OK, -14 NOK

4: GAK1_left_Hall_Sensor_activation_from_Open_Position 44 Specified value: > 20;

example: 63 OK, 14 NOK

5: GAK1_right_Open 747 Specified value: >660;

example: 730 OK, 643 NOK

6: GAK1_right_closed -289 Specified value: > -336;

example: -335 OK, -341 NOK

7: GAK1_right_Hall_Sensor_activation_from_Closed_Position -36 Specified value: < -20;

example: -23 OK, -14 NOK

8: GAK1_right_Hall_Sensor_activation_from_Open_Position 63 Specified value: > 20;

example: 63 OK, 14 NOK

If all values OK -> Step B

If value 1, 2, 4, 5, 6 or 8 NOK: continue with "Repositioning of Soft Top Flap Assembly and teach-in process" and case I.

If value 3 or 7 NOK: continue with "Repositioning of Soft Top Flap Assembly and teach-in process" and case II.

Repositioning of Soft Top Flap Assembly and teach-in process (see PDF Step by Step Soft Top Calibration):

1: Via the actuators in XENTRY (see Slide 5 in "Soft Top Calibration Teach-In") to the same height as Soft Top Flap Assembly (see Slide 5 in "Soft Top Calibration Teach-In")

2: Open the soft top locks using XENTRY (see "Slide 2 in "Soft Top Calibration Teach-In")

3. Gradually raise the soft top via XENTRY (see Slide 5 in "Soft Top Calibration Teach-In") to the same height as Soft Top Flap Assembly (see Slide 5 in "Soft Top Calibration Teach-In")

Important note: All electric motors are actuated via the XENTRY add-on without monitoring. If the desired soft top position is reached, the button must be released. Risk of damage

Case differentiation as follows:

Case I: Value 1,2,4,5,6 or 8 NOK

XENTRY Tips

4.I: Incrementally close the NOK Soft Top Flap Assembly (one to two increments in the direction of travel (see "Soft Top Calibration Teach-In", picture 1.6)) - Note: Each actuation of the Soft Top Flap Assembly ("header bow/GAK") via XENTRY causes the Soft Top Flap Assembly to move by one increment.

Case II: Value 3 or 7 NOK

4.II: Incrementally open the NOK Soft Top Flap Assembly (one to two increments in the direction of the trunk (see "Soft Top Calibration Teach-In", picture 1.6)) - Note: Each actuation of the- Soft Top Flap Assembly ("header bow/GAK") via XENTRY causes the Soft Top Flap Assembly to move by one increment.

5: Raise the soft top via XENTRY (see Slide 7 in "Soft Top Calibration Teach-In") until values M47/2 and M47/3 are in the range [-900;-800] and [800;900].

6: Start teach-in process (see Slide 8 in "Soft Top Calibration Teach-In") and confirm that the part exchange has taken place

-> If, following the teach-in process, no fault message appears and the soft top is functioning, processing is complete.

-> If a fault message appears: Create new control unit log and perform A again. If, after two attempts, this remains unsuccessful: Step B.

B. Reproduce fault and record ACTUAL values

1. Reproduce fault and leave the soft top in the position it is in when the process is canceled.

Important: The actual values absolutely must be recorded in the position at which point the process is canceled. This is only possible in the event of a fault. Adjusting the position using the soft top control (without the fault occurring) leads to false results for the actual values and means that an analysis cannot take place.

2. Record and save actual values via XENTRY (XENTRY N22/6 – Status of Hall sensors).

3. Create TIPS case, including pictures of problem, recorded actual values and current control unit log for rear passenger compartment control unit.

Include a video of attempting to operate the soft top to see where in motion it stops

- Include a photo of the Header Bows from the back of the car -- to see where Soft Top Flap Assembly lineup when they are in the intermediate position

- Include a photo of the latch hooks (located on the inside of the soft top) BEFORE attempting to close the soft top

AND after attempting to close the soft top of the where the latch hooks are stopped.

- There should be a roller that the latch hooks are attempting to wrap around.
- Include a photo of the Soft Top Flap Assembly linkage position and lock clip position

- Additional documentation can be found: XENTRY Workshop (Local Contents) --> AMG --> 232 SL

NOTE: The information contained in this document is intended for use by trained, professional technicians with the knowledge to properly and safely perform diagnosis and repairs on Mercedes-Benz vehicles, using Mercedes-Benz approved tools and equipment. It informs service technicians about conditions that could occur in certain vehicles and provides information that could assist in proper vehicle diagnosis, service, or repair. It does not indicate that a defect is present in any vehicle referenced in this document nor does it imply warranty coverage. DO NOT assume that a symptom or condition, or a described cause of a symptom or condition, affects any particular vehicle or groups of vehicles, or that a described repair applies to any particular vehicle or groups of vehicles. There can be multiple causes

resulting in the same or similar symptoms or conditions described in this document, and trained professional service technicians must use their diagnostic skills to make evaluations on a case-by-case basis. The information contained in this document does not guarantee warranty coverage nor does it extend the vehicle's warranty in any way.

Attachments	
File	Description
Bilder GAK Kalibrierung_06.2023_english.pdf	Pictures GAK Calibration
232+SL+Soft+Top+Calibration+final.pdf	232 Soft Top Calibration

Symptoms
Body > Roof system > Convertible top/vario roof > Does not open
Body > Roof system > Convertible top/vario roof > Does not close
Body > Roof system > Convertible top/vario roof > Stiff/sluggish
Body > Roof system > Convertible top/vario roof > Remains stationary
Body > Roof system > Convertible top/vario roof > Malfunction

Control unit/fault code	
Control unit	Fault text
N22/6 - Rear control unit (SG-FOND) (CRCM232)	B180071 - The output for the actuator motor 'Front soft top lock' has a malfunction. The actuator is blocked. B180013 - The output for the actuator motor 'Front soft top lock' has a malfunction. There is an open circuit. B228654 - The calibration of the control unit has been lost or was not carried out. Calibration is missing. B228646 - The calibration of the control unit has been lost or was not carried out. There is an error in the calibration or parameterization memory. B180707 - The values from the limit switches 'Soft top lock' are implausible relative to each other. There is a mechanical fault. B180077 - The output for the actuator motor 'Front soft top lock' has a malfunction. The commanded position cannot be reached. B196377 - Right actuator motor 'Header bow 1 for convertible roof frame' has a malfunction. The commanded position cannot be reached. B196277 - Left actuator motor 'Header bow 1 for convertible roof frame' has a malfunction. The commanded position cannot be reached.

Operation numbers/damage codes				
Op. no.	Operation text	Time	Damage code	Note