

Soft Top Does Not Close Completely or is Intermittent in Operation

Topic number	LI77.33-P-075246
Version	6
Function group	77.33 - Vario roof, soft top - mechanical system
Date	7/25/23
Validity	Model series 232
Reason for change	Update of Fault Codes

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 Header Bow does not reach intermediate position

B. Calibration of the Header Bow 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 attempt operation of Soft Top. If fault 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: Replace electric motor A2329066500 and Hall sensor.
- 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.

XENTRY TIPS

A. Fault cause GAK calibration

Review of "GAK calibration values" in control unit log: See picture 1.1 in "Pictures of GAK calibration".

Example for ACCEPTABLE values and target range:

1: GAK1_left_Open 738 Specified value: >660;

- example: 730 Good, 643 Poor

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

- example: -335 Good, -341 Poor

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

- example: -23 Good, -14 Poor

4: GAK1_left_Hall_Sensor_activation_from_Open_Position 44 Specified value: > 20;

- example: 63 Good, 14 Poor

5: GAK1_right_Open 747 Specified value: >660;

- example: 730 Good, 643 Poor

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

- example: -335 Good, -341 Poor

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

- example: -23 Good, -14 Poor

8: GAK1_right_Hall_Sensor_activation_from_Open_Position 63 Specified value: > 20;

- example: 63 Good, 14 Poor

If all values "GOOD" -> Step B

If value 1, 2, 4, 5, 6 or 8 "Poor": continue with "Repositioning of Header Bow and teach-in process" and case I.

XENTRY TIPS

If value 3 or 7 "Poor": continue with "Repositioning of Header Bow and teach-in process" and case II.

Repositioning of Header Bow 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 Header Bow (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 Header Bow (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 "Poor"

4.I: Incrementally close the "Poor" Header Bow (one to two increments in the direction of travel (see "Pictures of GAK calibration", picture 1.6)) - Note: Each actuation of the header bow ("GAK") via XENTRY causes the Header Bow to move by one increment.

Case II: Value 3 or 7 "Poor"

4.II: Incrementally open the "Poor" Header Bow (one to two increments in the direction of the trunk (see "Pictures of GAK calibration", picture 1.6)) - Note: Each actuation of the header bow ("GAK") via XENTRY causes the Header Bow 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 Header Bows lineup when they are in the intermediate position

XENTRY TIPS

- 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 GAK linkage position and lock clip position
- Additional documentation can be found: XENTRY Workshop (Local Contents) --> AMG --> 232 SL

Attachments	
File	Description
Bilder GAK Kalibrierung_06.2023_english.pdf	Pictures of GAK calibration
232+SL+Soft+Top+Calibration+final.pdf	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)	<p>B180071 - The output for the actuator motor 'Front soft top lock' has a malfunction. The actuator is blocked.</p> <p>B180013 - The output for the actuator motor 'Front soft top lock' has a malfunction. There is an open circuit.</p> <p>B228654 - The calibration of the control unit has been lost or was not carried out. Calibration is missing.</p> <p>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.</p> <p>B180707 - The values from the limit switches 'Soft top lock' are implausible relative to each other. There is a mechanical fault.</p> <p>B180077 - The output for the actuator motor 'Front soft top lock' has a malfunction. The commanded position cannot be reached.</p> <p>B196377 - Right actuator motor 'Header bow 1 for convertible roof frame' has a malfunction. The commanded position cannot be reached.</p> <p>B196277 - Left actuator motor 'Header bow 1 for convertible roof frame' has a malfunction. The commanded position cannot be reached.</p>

XENTRY TIPS

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