Soft Top Does Not Close Completely or is Intermittent in Operation

Topic number	LI77.33-P-075246
Version	4
Function group	77.33 - Vario roof, soft top - mechanical system
Date	5/4/23
Validity	Model series 232
Reason for change	Repair information incl. attachment changed

Complaint

Soft top does not close/open

Cause

The problem could be due to various causes:

A. Software problems/window standardization

B. Faulty/incorrectly calibrated GAK

C. Faulty welding of the stop buffer of a stop screw

Remedy

A. Software update N22/6 (rear control unit)

1 Software update to SW A2329023601.

2 Lock vehicle and wait for bus idle. Start the engine and attempt to reproduce the fault.

3 If fault is not reproducible: Repair completed

4 If fault is reproducible: Perform a quick test

4.1 In the event of fault code 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." -> Step B

4.2 If fault code B228646 does NOT appear -> step C

B. Fault cause Header Bow calibration (see PDF Step by Step Soft Top Calibration)

1. Installation of add-on 23528 for XENTRY – XENTRY release 06/22

2. Readout of the calibration data of the Header Bows via XENTRY via rear control unit (N22/6) control unit log OR via VeDoc CRCM232

3. Export PDF

4. Review of Header Bow calibration values: See Slide 1 in "Soft Top Calibration Teach-In"

GAK1_links_Hall_Sensor_activation_from_Closed_Position, specified value: < -20

Example: -23 good, -14 poor

GAK1_links_Hall_Sensor_activation_from_Open_Position, specified value: > 20

Example: 63 good, 14 poor

GAK1_rechts_Hall_Sensor_activation_from_Closed_Position, specified value: < -20

Example: -23 good, -14 poor

GAK1_rechts_Hall_Sensor_activation_from_Open_Position, specified value: > 20

Example: 63 good, 14 poor

5. If all values OK -> step D

6. If GAK1_links_Hall_Sensor_activation_from_Closed_Position or GAK1_rechts_Hall_Sensor_activation_from_Closed_Position is not OK: Move soft top into soft top position and GAK into intermediate position (see Slides 3-4 in "Soft Top Calibration Teach-In")

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

8. Gradually raising 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 using the XENTRY add-on without monitoring. If the desired soft top position is reached, the button must be released. Risk of damage

9. Measure minimum distance between Header Bow and soft top for position from previous step (see Slide 6 in "Soft Top Calibration Teach-In")

Important note:

The measurement must always be conducted with the soft top raised, coming from the open-top position. It should never be conducted from the closed position! (critical distance in movement). Risk of damage

10. Perform adjustment of not OK Header Bow using XENTRY (see Slide 4 in "Soft Top Calibration Teach-In") - gradually opening not OK Header Bow 1 to 20 mm distance (see Slide 6 in "Soft Top Calibration Teach-In") between Header Bow and soft top

11. Lift soft top to "Cobra position" (see Slide 7 in "Soft Top Calibration Teach-In") using XENTRY (see Slide 7 in "Soft Top Calibration Teach-In") until all values are green.

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

13. Renewed reading out of calibration data and review values – see operation steps 2 – 4

-> If all values are OK and soft top function is OK - action completed

-> If one or more values are not OK and distance of 17 mm set: Exchange affected Header Bow!

14. Review soft top function:

-> If OK, case closed

-> If not OK, continue with step C

C. Review of weld seam fault cause

1 Review (visual check) of welded buffer of stop screw at Header Bow.

->Compare with picture 1.1 and picture 1.2 in attachment "Pictures of weld seam". This shows a weld that is not OK and how it may appear in the vehicle.

2 If weld is not OK: Replace Header Bow – repair completed

3 If both sides are OK: Continue with step D

D. 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 and recorded actual values

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

• Include a photo of the Header Bows from the back of the car -- to see where Header Bowss line up 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 GAK linkage position and lock clip position

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

Attachments	
File	Description
Bilder Schweißnaht.pdf	Pictures of Weld Seam
Latch Hook Positioning and Locking Clip Check.pdf	Latch Hook Positioning and Locking Clip
Photos for GAK Calibration.pdf	Photos for GAK Calibration
232 SL Soft Top Calibration final.pdf	232 SL Soft Top Calibration Steps

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

XENTRY TIPS

Body > Roof system > Convertible top/vario roof > Malfunction

Control unit/fault code

Control unit	Fault text
N22/6 - Rear control unit (SG-FOND) (CRCM232)	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. B196777 - Right actuator motor 'Header bow 2 for convertible roof frame' has a malfunction. The commanded position cannot be reached. B196677 - Left actuator motor 'Header bow 2 for convertible roof frame' 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
			69C0V	Please refer to the TIPS document in the dealership text, if possible with reference to remedy (A, B or C)
			69R0V	Please refer to the TIPS document in the dealership text, if possible with reference to remedy (A, B or C)