

## Soft Top Does Not Close Completely or is Intermittent in Operation


---

Topic number	LI77.33-P-075246
Version	3
Function group	77.33 - Vario roof, soft top - mechanical system
Date	10/31/22
Validity	Model series 232
Reason for change	Revised repair instructions based on new findings

---

### Complaint

Soft top does not close – Soft top mechanical components/linkage outlet flaps ("GAK") move into the intermediate position (picture 1) and then cancel the closing process.

Attachments	
File	Description
<a href="#">Bild 1.jpg</a>	Picture 1
	

### Cause

There could be three causes for this problem:

- A. Welding status of the stop buffer of a stop screw
- B. GAK may require additional calibration
- C. Additional adjustment of the stowage space locking mechanism needed

### Remedy

# XENTRY TIPS

---

Initially required:

1. Software update for control unit N22/6
2. Installation add-on 23528 for XENTRY – XENTRY release 06/22

Steps to identify the cause are processed below. To begin with, however, the locking hooks should be checked in the position in which the closing process is aborted by means of a visual check (see picture 2 and Locking Clip Check attachment). For this, check the locking hooks on both sides. This is the most common fault cause and can shorten the analysis process. If one of the two hooks has not opened, proceed with step C.2. (Only step A must then additionally be observed). If both hooks have opened, proceed to step A.

One possible immediate measure to close the soft top once: Press GAKs backward by hand and slightly lift soft top above the locking hook (see picture 3) (possible that the locking hook audibly opens). Then close soft top using normal actuation means in the vehicle. This may not be possible in every case.

Process and check the following steps to determine the fault cause and find a remedy (even if the one-off immediate measure proved helpful).

Please note the sequence.

## A. Review of weld seam

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

->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 the weld seam requires repair: Exchange GAK. Once the repair is complete, check soft top and proceed to B if problem reoccurs. If the soft top closes without any issue -> Close the case.

3. If both sides are OK: Continue with 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 closing process is canceled (this can be done via video of Xentry at time of actuation/process stoppage). 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 for "GAK1" and "Soft top" via XENTRY (XENTRY N22/6 – Status of Hall sensors)

## GAK requiring calibration – Analysis of actual values "GAK1"

1. Inspection of actual values "Hall sensor GAK1 intermediate position left" and "Hall sensor GAK1 intermediate position right" – see picture 1.1 in "Pictures of GAK calibration"

-> If both values are on "ACTUATED" -> this is OK and continue with step C

-> If one or both values are on "NOT ACTUATED" -> this is not OK and continue with 2.

2. Reading out calibration data of GAKs using XENTRY via – control unit log – reading out ACTUAL values

3. Export PDF

4. Review of GAK calibration values: See picture 1.2 in "Pictures of GAK calibration"

GAK1\_links\_Hall\_Sensor\_activation\_from\_Closed\_Position, specified value: < -20

# XENTRY TIPS

---

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 are OK -> Do not exchange actuated GAK

6. If GAK1\_links\_Hall\_Sensor\_activation\_from\_Closed\_Position or GAK1\_rechts\_Hall\_Sensor\_activation\_from\_Closed\_Position is below values: Move soft top into soft top position and GAK into intermediate position (see "Pictures of GAK calibration", picture 1.3)

7. Open soft top locks using XENTRY (see "Pictures of GAK calibration", picture 1.4)

8. Gradually raising the soft top via XENTRY (see "Pictures of GAK calibration", picture 1.5) to the same height as GAK (roughly 60-65mm)(see "Pictures of GAK calibration", picture 1.6)

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 GAK and soft top for position from previous step (a minimum distance of 15mm must be ensured from both sides of the GAK)

**IMPORTANT:** Carry out distance measurement at the narrowest point in the movement sequence between the top of the roof and GAK

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. New adjustment of not OK GAK using XENTRY (see "Pictures of GAK calibration", picture 1.7) - gradually opening under value/over valued GAK1 to 20 mm distance (see "Pictures of GAK calibration", picture 1.8) between GAK and soft top

11. Lift soft top to "Cobra position" (see "Pictures of GAK calibration", picture 1.9) using XENTRY (see "Pictures of GAK calibration", picture 1.5)

12. Start teach-in process (see "Pictures of GAK calibration", picture 1.10) and confirm that the part exchange has taken place (see "Pictures of GAK calibration", picture 1.10 marked red, necessary for teach-in process start)

**IMPORTANT:** Select "YES" only for teach-in process (selecting "NO" can cause issues)

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 below/above calibration values and distance of 20 mm set: attempt process a 2nd time (if possible).

- IF possible: Review soft top function
- IF NOT possible: Open PTSS case and exchange affected GAK!

14. Review soft top function:

-> If OK, case closed

-> If calibration not completing, continue with step D

# XENTRY TIPS

---

## C. Soft top lock does not open due to locking mechanism

1. Inspection of actual values "Hall sensor CT locking left" and "Hall sensor CT locking right" – see "Pictures of soft top lock", picture 1.1

-> If both values are on "NOT ACTUATED" – this is OK and continue with step D

-> If one or both values are on "ACTUATED" – this is not OK and continue with 2.

2. Determine unopened locking hook (ACTUATED) using actual values and visual check. A hook is unopened in the event of a fault (see "Pictures of soft top lock", picture 1.2 (closed) and picture 1.3 (opened))

3. Move GAKs into "inclined position", open over soft top (see "Pictures of soft top lock", picture 1.4), then disassemble rear passenger compartment seat cushion padding (AR91.12-P-1022SLY), seat backrest (AR91.12-P-1713SLY), trim above roll bars and crossmember trim – see "Pictures of soft top lock", picture 1.5

4. Bring GAKs into intermediate position and soft top into open-top position (cf. position in picture 1.6). Then open the locking hooks: either by reproducing the fault and supporting the jammed hook by hand, or by actuating the locking hooks via XENTRY (see picture 1.7). If the hook jams as in the case of the fault, the soft top can be pulled upward by hand via the hook. The hook then opens

5. Adjustment of the repository lock – increase tension on cable:

-> Release cable clamp and secure it to prevent it from falling (see picture 1.8)

-> Press roller of repository lock by hand inward up to the end stop (see picture 1.9) and hold it in place. (Information: If this is not possible, you will need to pull very firmly in the next step)

-> If the roller is pressed inward, tension the cable – to do so, expand the distance to the sleeve of the cable to obtain more tension – it is necessary to pull firmly on the cable! (see picture 1.10)

-> Position clamps

6. Close locking hooks (picture 1.7)

-> If soft top is operable after - attempt to open/close 1- times

-> If soft top is inoperable after - continue to step 7

7. Check the position of the repository lock in relation to the hook

-> OK position: Option 1: No contact between the hook and the roller at the top and sufficient distance at the side between the groove of the hook and the roller - cf. picture 1.11 outlined in green (top)

Option 2: Contact between the hook and the roller at the top, but with sufficient distance at the side between the groove of the hook and the roller - cf. picture 1.11 outlined in green (bottom)

-> unadjusted position: Contact at the top and very small distance between the groove of the hook and the roller - cf. picture 1.11 outlined in red.

8. If OK: Measure complete - If softtop still inoperable: Adjust stop screw. To do so, proceed as follows:

-> Loosen conternut (7 mm) of the stop screw below the cable – picture 1.12

-> Unscrew stop screw to the left (min. 1.5 revolutions, max. 2 revolutions) – picture 1.13

-> Tighten conternut and secure screw to prevent it from turning

9. Check the position of the repository lock in relation to the hook – see step 7

# XENTRY TIPS

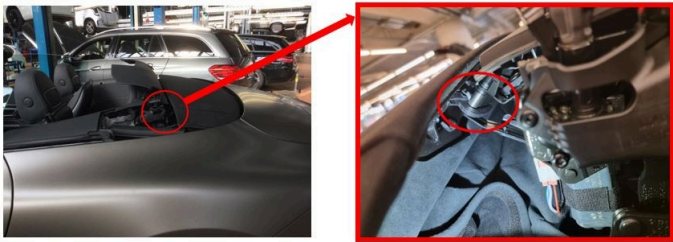

---

10. If soft top function is OK: Install removed parts

If function still does not operate: Continue with step D

D. Create TIPS case, including pictures of problem and recorded actual values of "GAK1" and "soft top"

- Include a video of attempting to operate the soft top so we can see where in motion it stops
- Include a photo of the GAKs from the back of the car -- to see where GAKs 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
<a href="#">Bilder Schweißnaht.pdf</a>	Pictures of weld seam
<a href="#">Bild2.jpg</a> 	Picture 2
<a href="#">Bild3.jpg</a> 	Picture 3

# XENTRY TIPS

<a href="#">Latch Hook Positioning and Locking Clip Check.pdf</a>	Latch Hook Positioning and Locking Clip
<a href="#">Photos for GAK Calibration.pdf</a>	Pictures of GAK Calibration
<a href="#">Soft Top Calibration.pdf</a>	Pictures of Locking Hooks

<b>Symptoms</b>
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

<b>Control unit/fault code</b>	
<b>Control unit</b>	<b>Fault text</b>
N22/6 - Rear control unit (SG-FOND) (CRCM232)	<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>B196777 - Right actuator motor 'Header bow 2 for convertible roof frame' has a malfunction. The commanded position cannot be reached.</p> <p>B196677 - Left actuator motor 'Header bow 2 for convertible roof frame' 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>

<b>Operation numbers/damage codes</b>				
<b>Op. no.</b>	<b>Operation text</b>	<b>Time</b>	<b>Damage code</b>	<b>Note</b>
			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)