

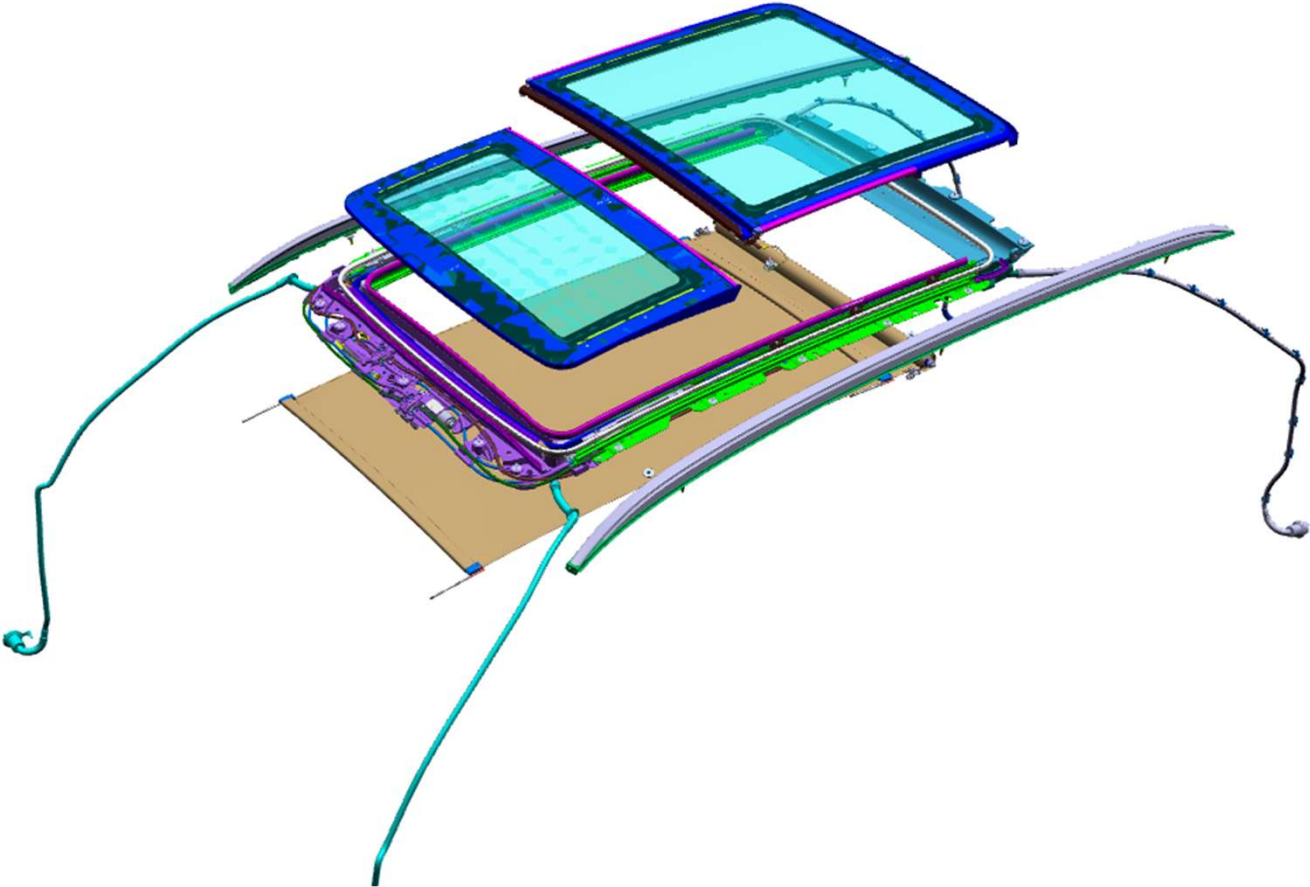
SUNROOF DIAGNOSIS WHAT IS THE ISSUE?

Water Leak

Wind Noise

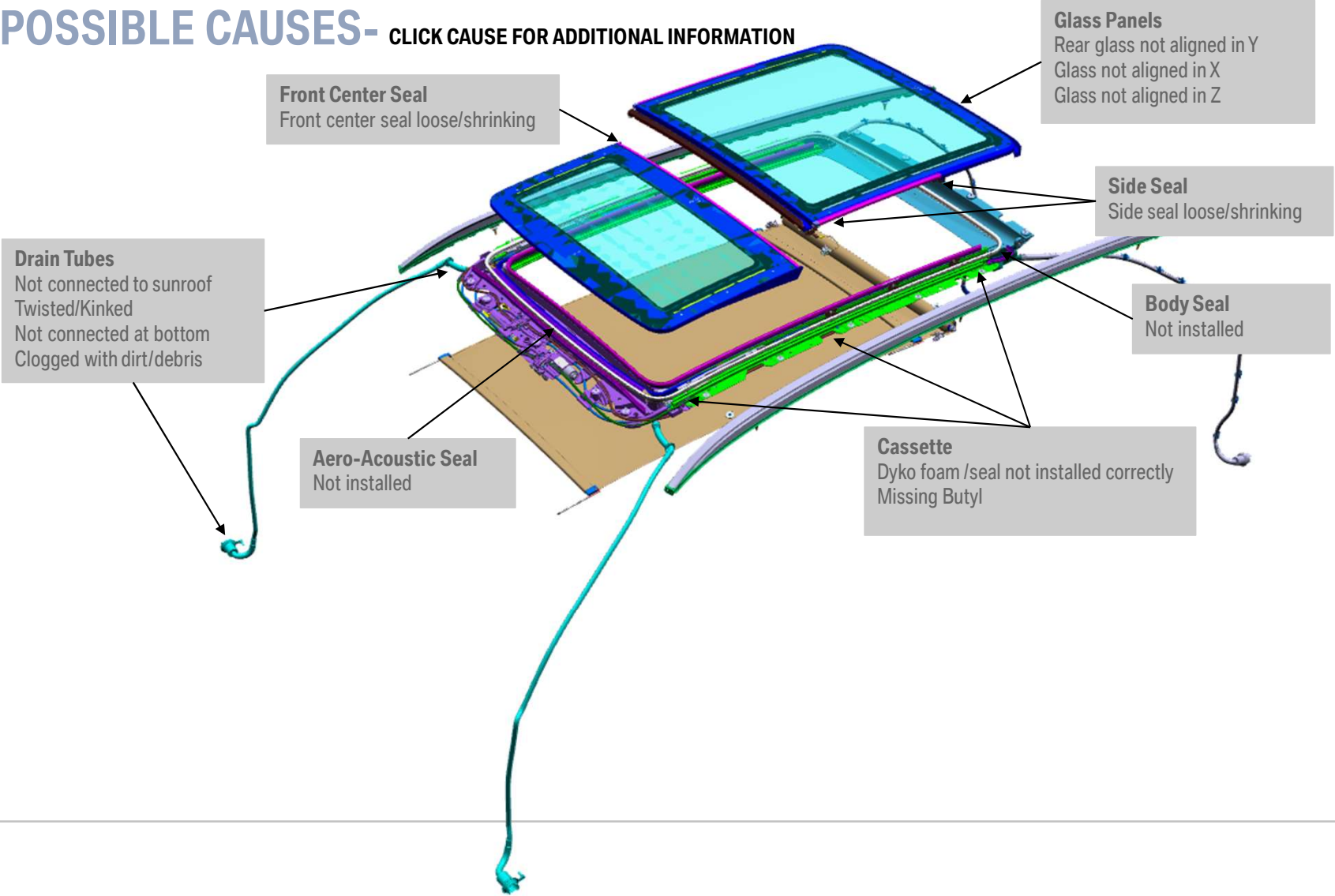
Static Noise

Function Noise

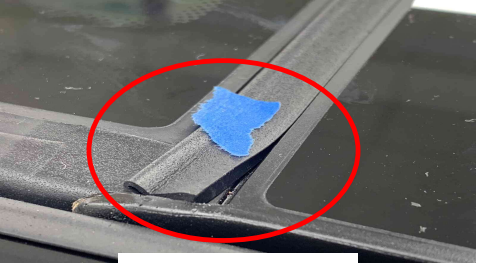
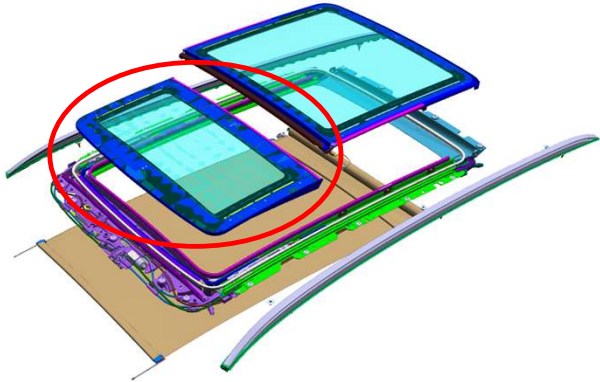
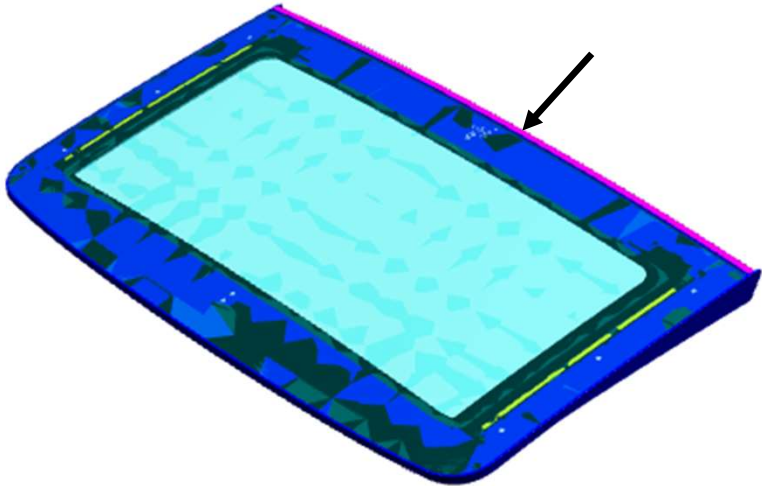


WATER LEAKS

POSSIBLE CAUSES- CLICK CAUSE FOR ADDITIONAL INFORMATION



FRONT CENTER SEAL LOOSE/SHRINKING



Defect: separated



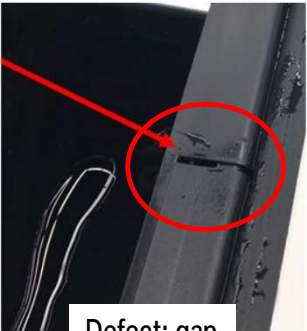
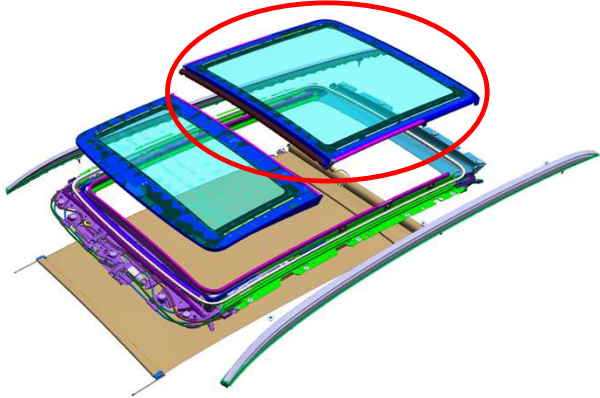
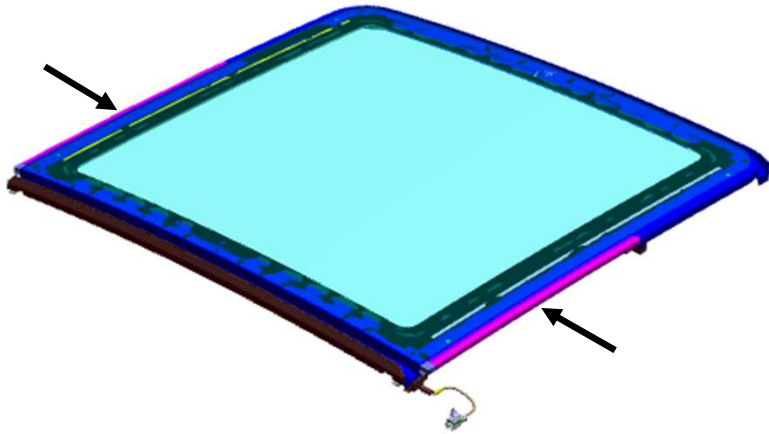
Defect: shrunken / gap

Situation: Excessive water enters through the sunroof seals.

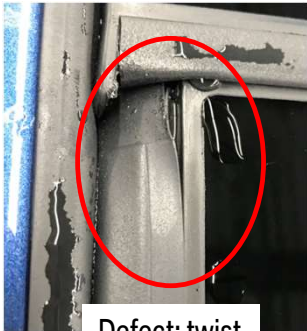
Repair: Look for gap near end of the seal on front glass. If found, replace seal according to ISTA/AIR instructions REP 54 13 052. Also refer to B54 04 21.

SIDE SEAL LOOSE/SHRINKING

March 2023



Defect: gap



Defect: twist

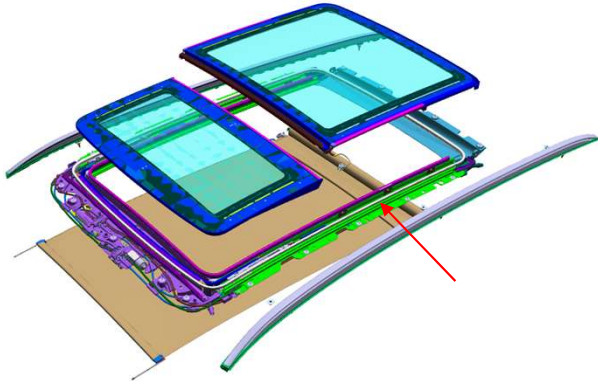
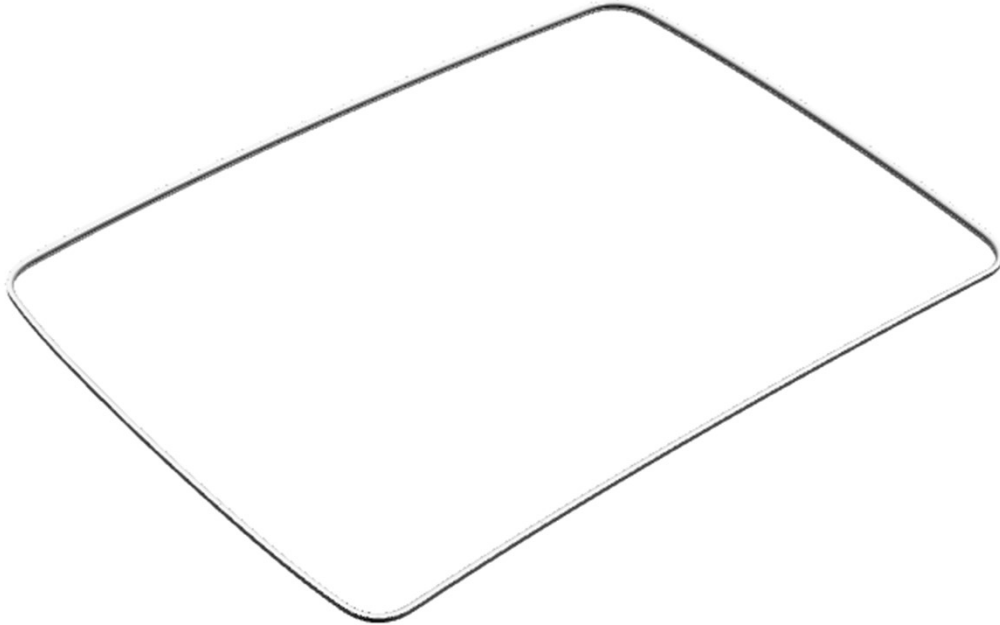


Defect: loose

Situation : Excessive water enters through the sunroof seals. (see pictures)

Repair: Look for gap near ends or twist in seal. If found, replace seal according to ISTA/AIR instructions.
REP 54 13 050

BODY SEAL NOT ATTACHED



Situation : Excessive water enters through the sunroof seals.

Repair: Inspect the sunroof perimeter seal for defects. Replace body seal according to ISTA/AIR instructions REP 54 13 055.

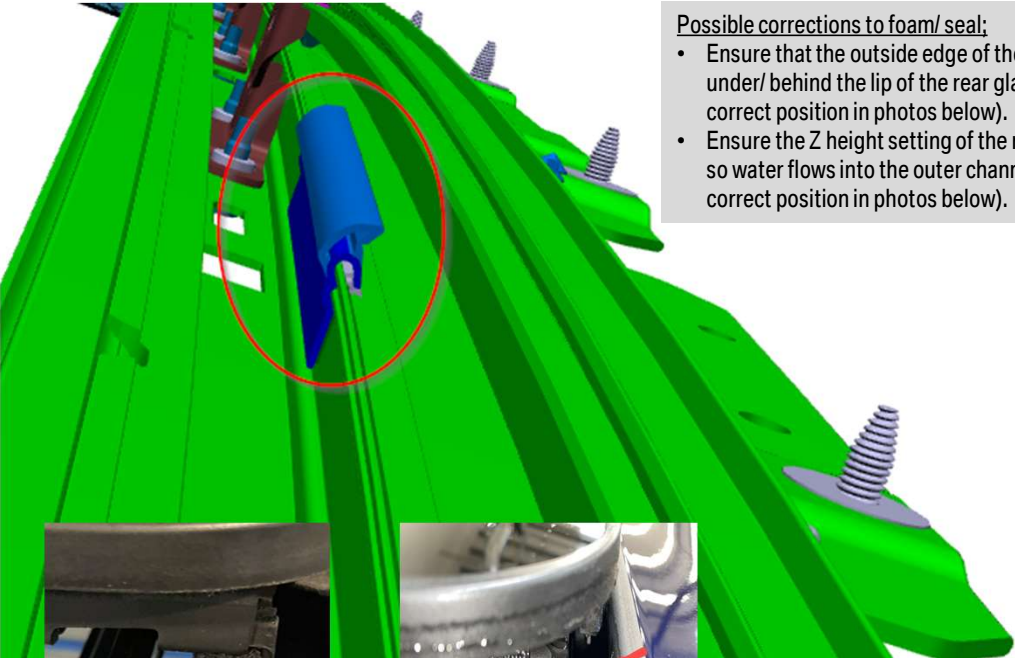


example: gap/not flush

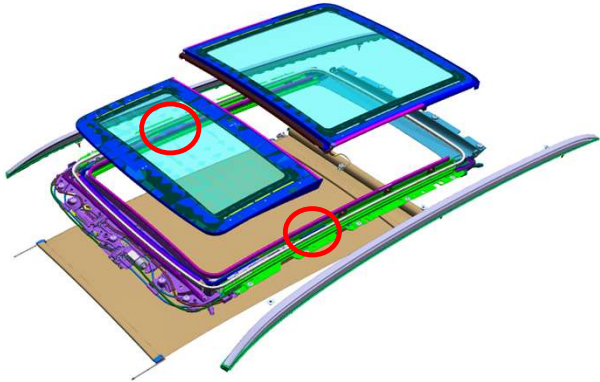


example: gap/not flush

DYKO FOAM/SEAL- WATER INTRUSION INTO DRY SIDE OF CHANNEL



- Possible corrections to foam/ seal;
- Ensure that the outside edge of the foam/ seal is tucked under/ behind the lip of the rear glass drain channel. (See correct position in photos below).
 - Ensure the Z height setting of the rear glass panel is correct so water flows into the outer channel of the cassette.(See correct position in photos below).



Solution: If there is a water leak near the middle drain channel, check position of the seal and foam.

Production before March 26 2020: foam (a)
 Production after March 26 2021: seal (b)
 Production in between: no foam/seal

(!) If NO foam/seal is present, the root cause of a water leak is NOT the foam/seal. Missing foam/seal will NOT CAUSE A WATER LEAK!! DO NOT REPLACE THE FFRAE FOR THIS.

Repair: Check position of the seal/ foam. Remove foam/ seal if deformed or damaged.

Part Number: 9466049-02, if new rubber seal is not available it is approved to use the foam for repair.



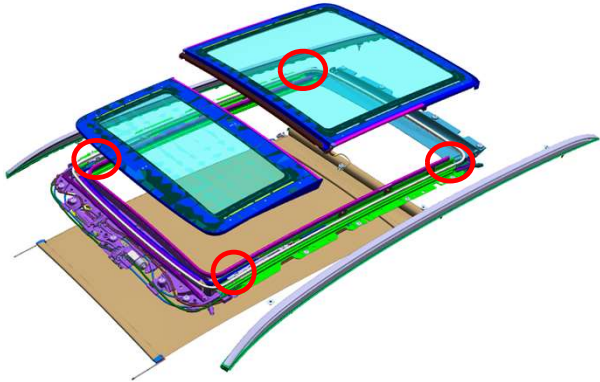
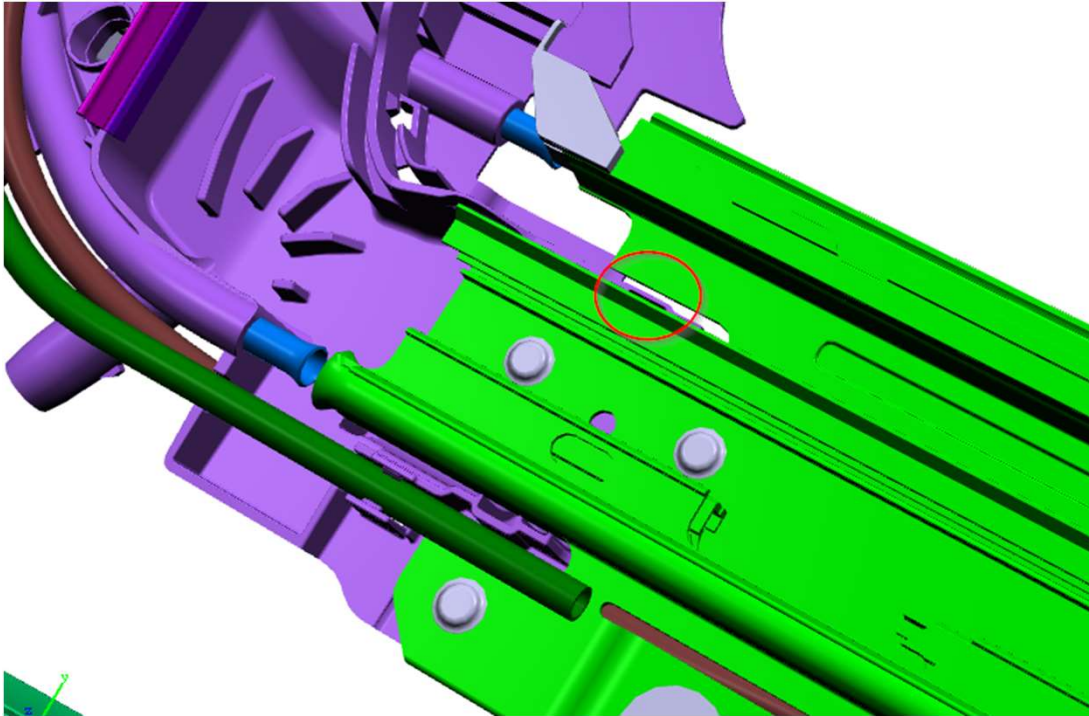
Correct foam position (a)



Correct seal position (b)



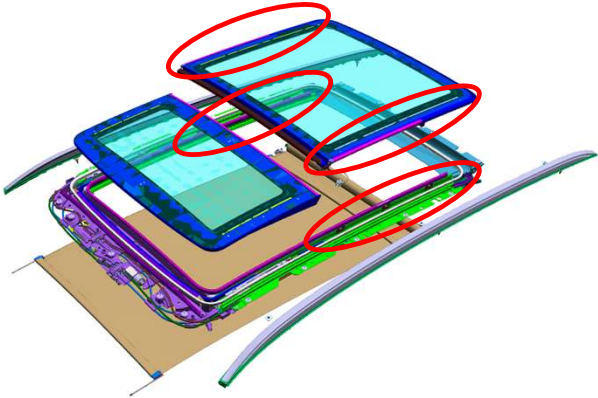
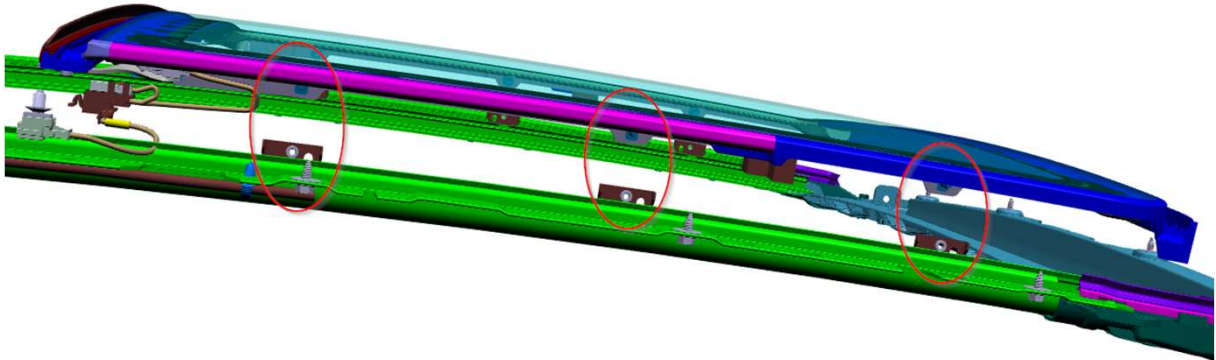
MISSING BUTYL BETWEEN SIDE GUIDES AND BEAM



Situation : There is a water leak running between front/rear beam and side guide.

Repair: There may be missing butyl sealer. ENSURE ALL OTHER WATER MANAGEMENT (SEALS, DRAINS) ARE CHECKED FIRST. ENSURE PROPER WATER TESTING PROCEDURES ARE BEING FOLLOWED (DO NOT OVERFLOW THE SEALED TRACK)
Replace frame according to ISTA/AIR instructions REP 54 13 261.

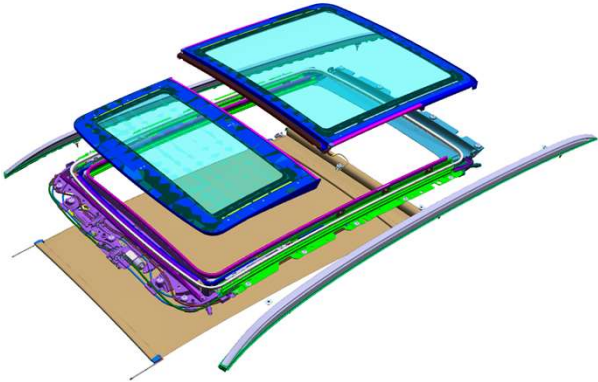
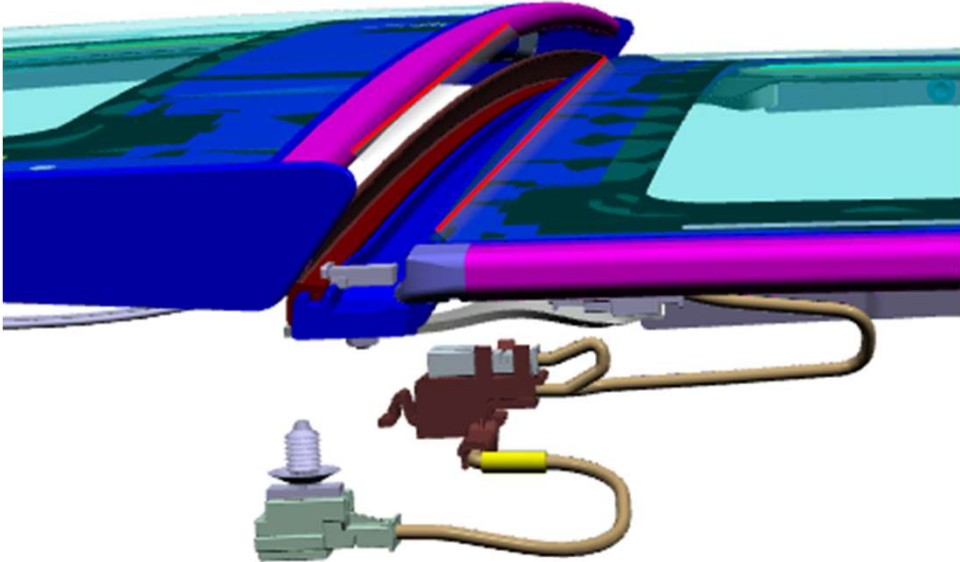
REAR GLASS NOT ALIGNED LEFT TO RIGHT



Situation: Excessive water enters a gap between the side seals and body.

Repair: Check the seals. If seals are OK, check left to right alignment of rear glass (minimal adjustment possible).
Adjust the rear sunroof glass and recheck left to right adjustment. Potential adjustment is very minor. If issue persists then replace frame according to ISTA/AIR instructions REP 54 13 261.

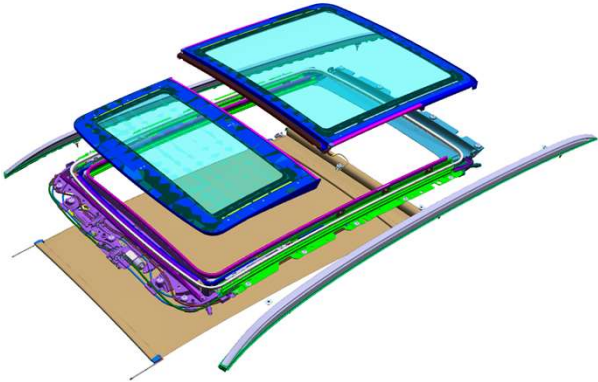
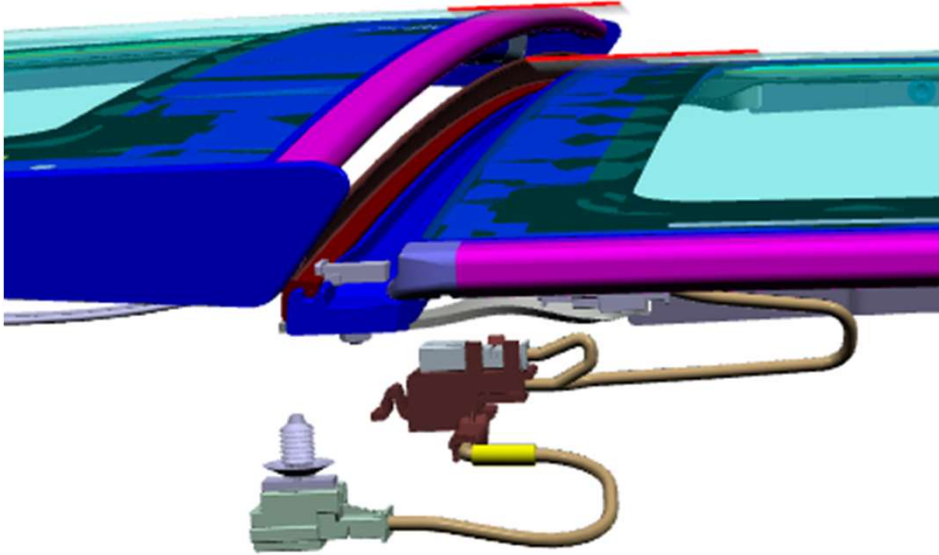
FRONT/REAR GLASS NOT ALIGNED IN X



Situation: Excess water enters the perimeter of the glass. Front and/or rear glass panels misadjusted front to rear.

Repair: Adjust both sunroof glass panels according to ISTA/AIR instructions REP 54 13 002.

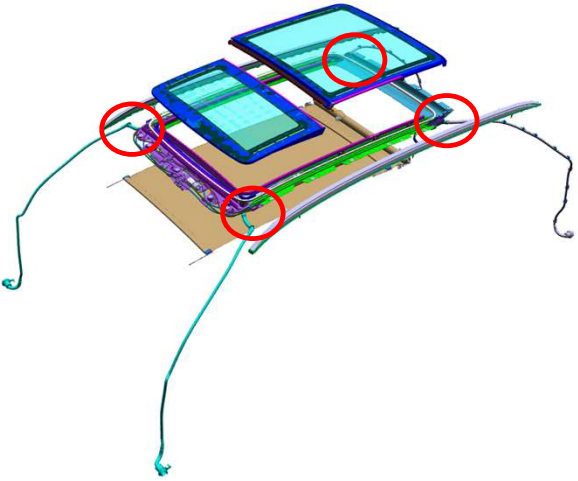
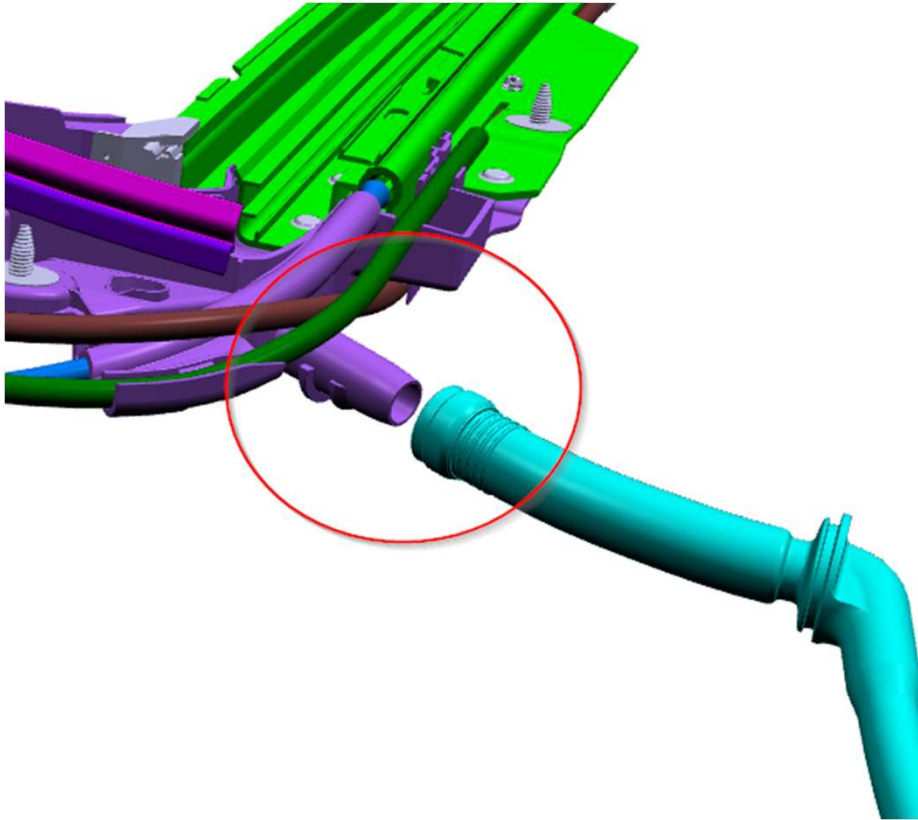
FRONT/REAR GLASS NOT ALIGNED IN Z



Situation: Excess water enters between the glass panels. Front and/or rear glass panel height misadjusted.

Repair: Adjust both sunroof glass panels according to ISTA/AIR instructions REP 54 13 002.

DRAIN TUBE NOT CONNECTED AT TOP

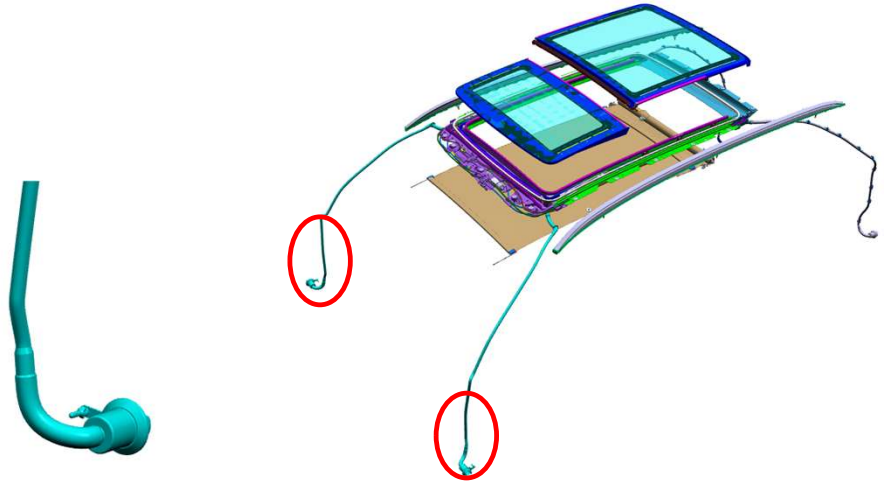


Situation: There is a water leak near the trunk area or you have a water leak near the front carpets. The drain tubes may not be properly connected at the sunroof frame (the top).

Repair: Check the drain tube connections at the sunroof. Reconnect if necessary.



FRONT DRAIN TUBE TWISTED/KINKED



twisted

kinked

Slightly kinked



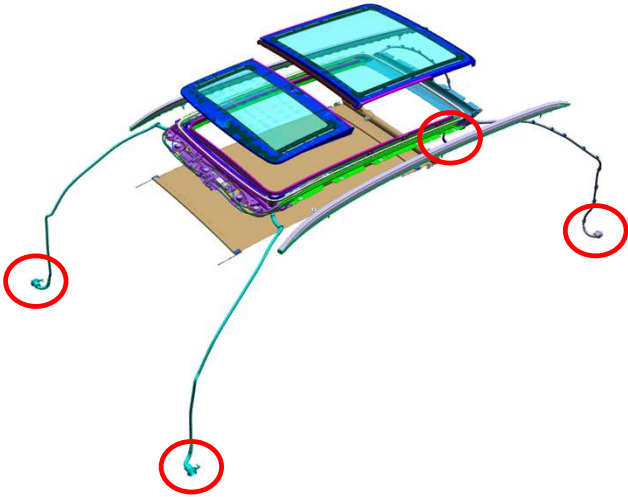
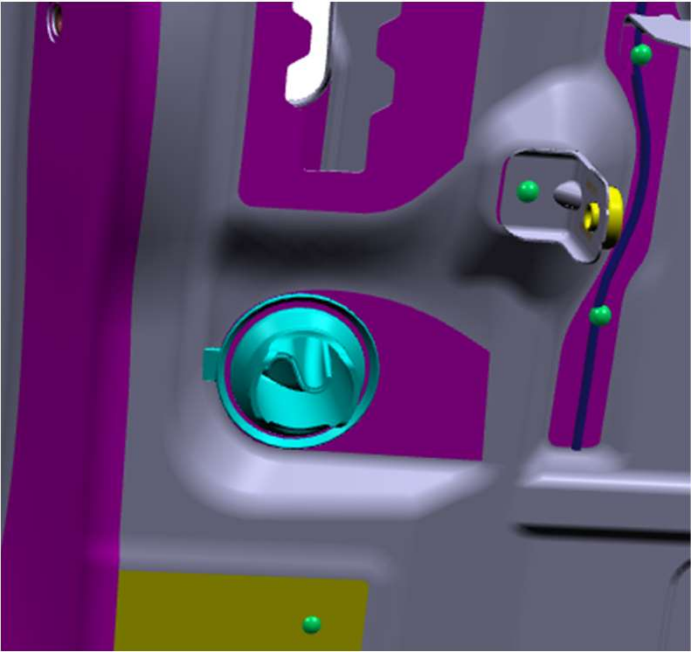
Situation: There is a water leak near the front or rear carpets. The drain tubes may be twisted. Remove A-pillar kick panels to check if front drain tube is twisted/kinked. Use borescope if needed.

Repair: Reposition hose to remove kink. If kink can't be removed, refer to B54 11 19 Attachment 1 for repair instructions.

!!This situation is one of the more common issues. Investigate thoroughly!!



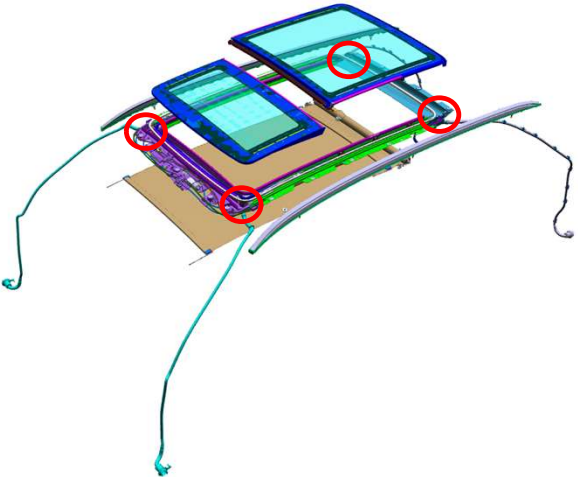
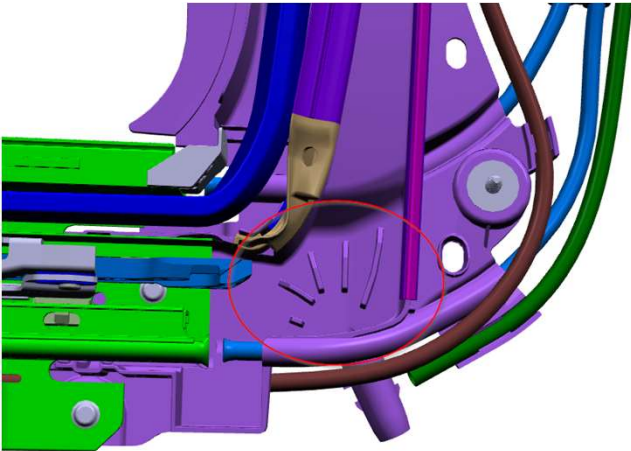
DRAIN TUBES NOT CONNECTED AT BOTTOM



Situation: There is a water leak near the trunk area or you have a water leak near the front carpets. The drain tubes may not be properly connected at the A-Pillar or D pillar at the bottom

Repair: Make sure that drain grommet is seated correctly in the A-Pillar. If not, correctly seat grommet.

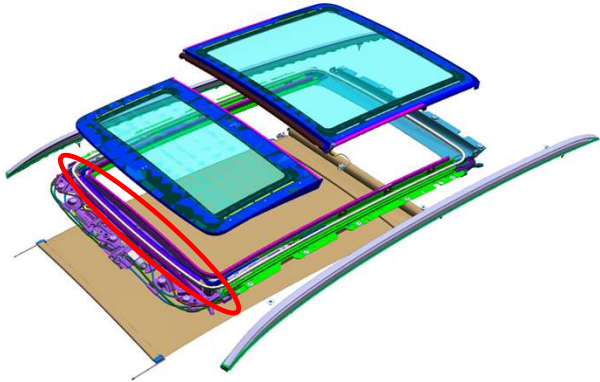
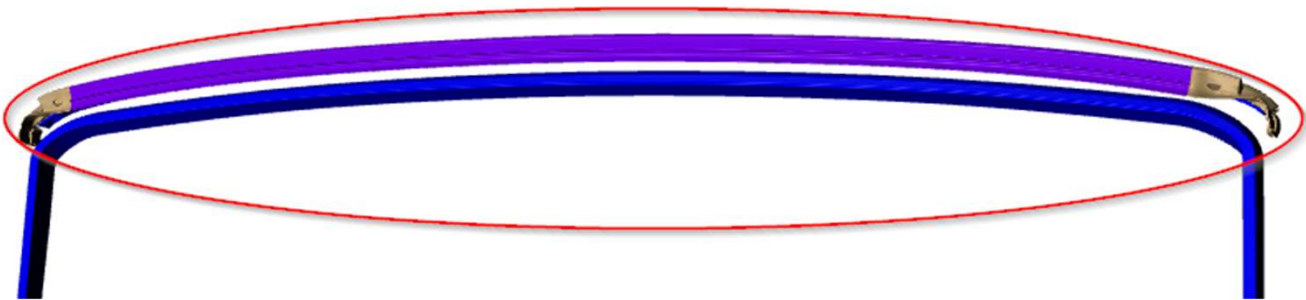
DRAIN TUBES CLOGGED (DIRT/DEBRIS)



Situation: There is a water leak onto the carpets. The drain tubes may be clogged.

Repair: Verify water flow through drain tube. Check for twist/kinks in drain hoses first. If no defect is found, gently blow air through drain tube to force debris to come out. Submit TSARA case for assistance if clog cannot be cleared.

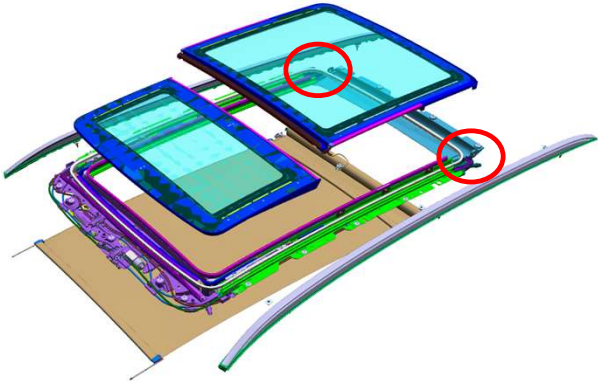
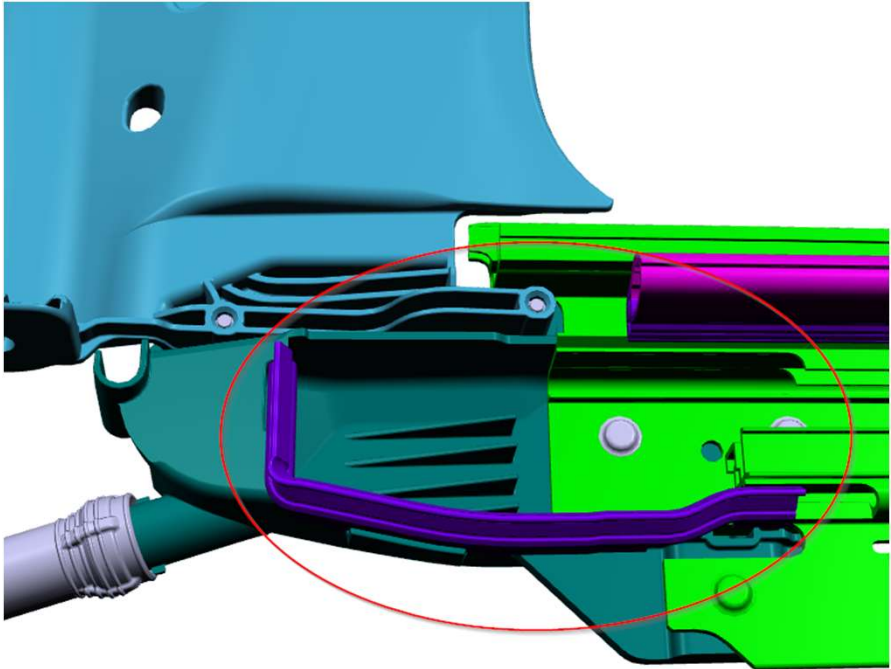
AERO ACOUSTIC SEAL NOT INSTALLED / STUCK



Situation: There is a water leak in the front. The aero-acoustic seal may be incorrectly installed or deformed.

Repair: Check if seal is properly seated and in good condition. If not, then reset or replace the aero-acoustic seal and replace the body seal according to ISTA/AIR instructions REP 54 13 055.

REAR BEAM DYKO SEAL NOT INSTALLED



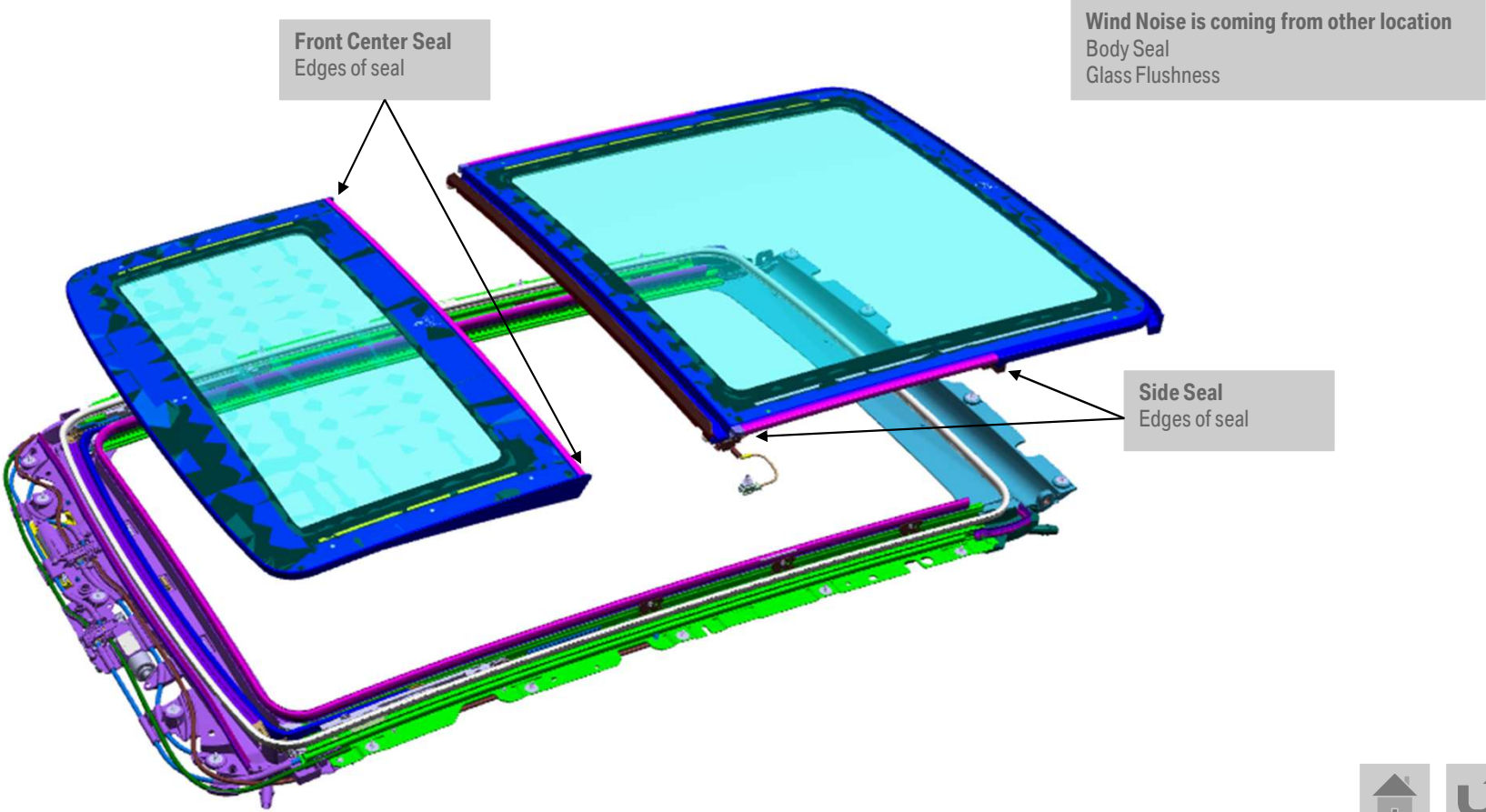
Situation: There is water ingress in the trunk area. The rear beam seal may not be installed.

Repair: Check if seal is properly seated. Loosen bolts to lower the frame in order to properly inspect seal. If seal is completely missing then replace frame according to ISTA/AIR instructions REP 54 13 261.

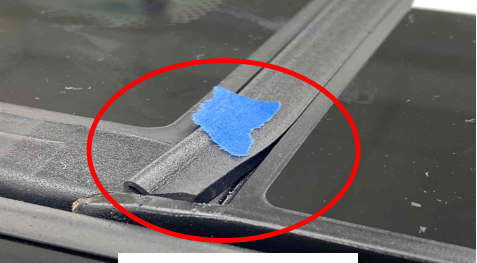
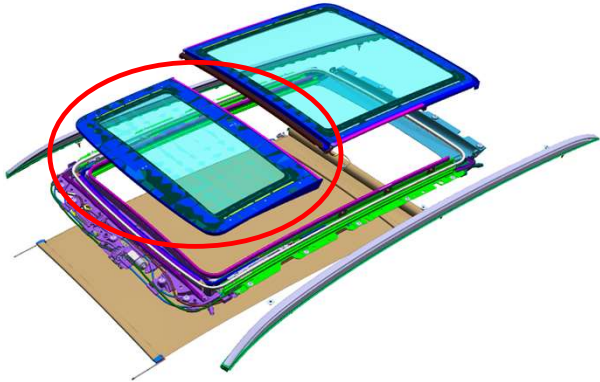
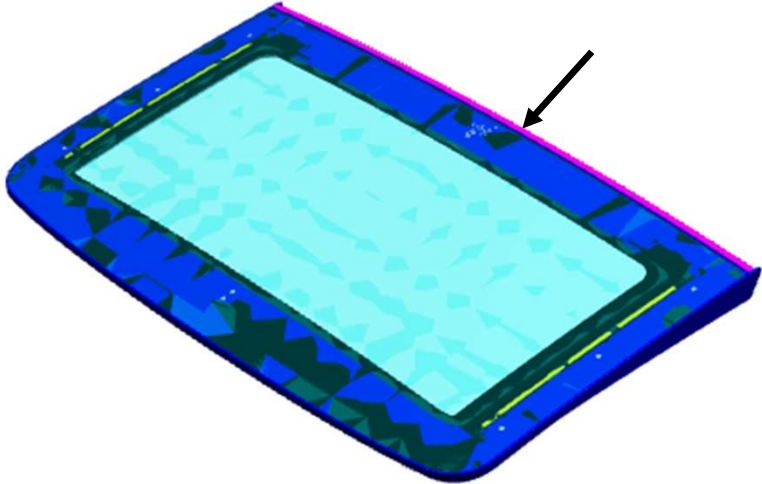
WIND NOISE

The background features a light blue and white color palette. A grid of thin, light blue lines is visible, with some lines blurred to create a sense of motion or depth. The overall effect is clean and modern.

WHERE IS THE WIND NOISE COMING FROM?



FRONT CENTER SEAL LOOSE/SHRINKING



Defect: separated



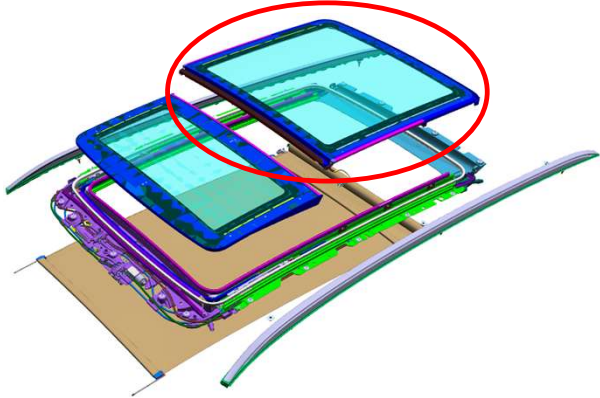
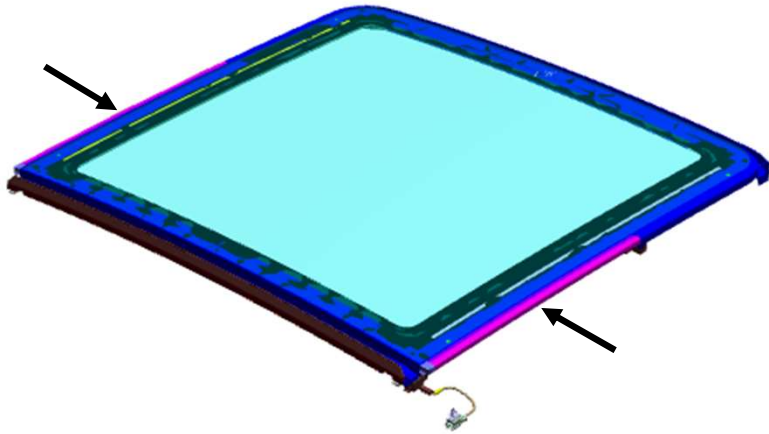
Defect: shrunken / gap

Situation: Wind noise heard at speeds of 30 Mph. A gap can be seen near the end of the seal on front glass.

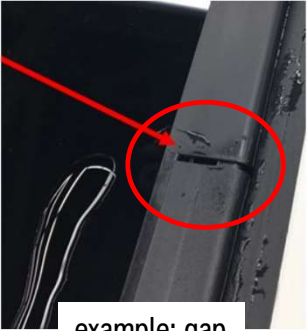
Repair: Replace seal according to ISTA/AIR instructions REP 54 13 052. Refer to B54 04 21.

SIDE SEAL LOOSE/SHRINKING

March 2023



Situation: Wind noise heard at speeds of 30mph.
Repair: Look for gap near ends or twist in seal. If found, replace seal according to ISTA/AIR instructions.
REP 54 13 050



example: gap

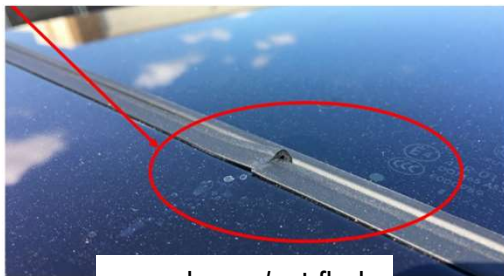
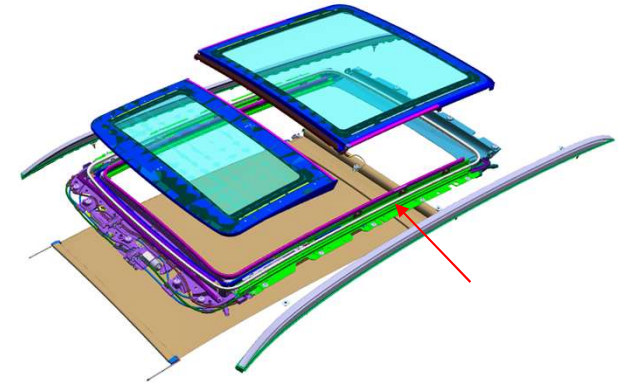
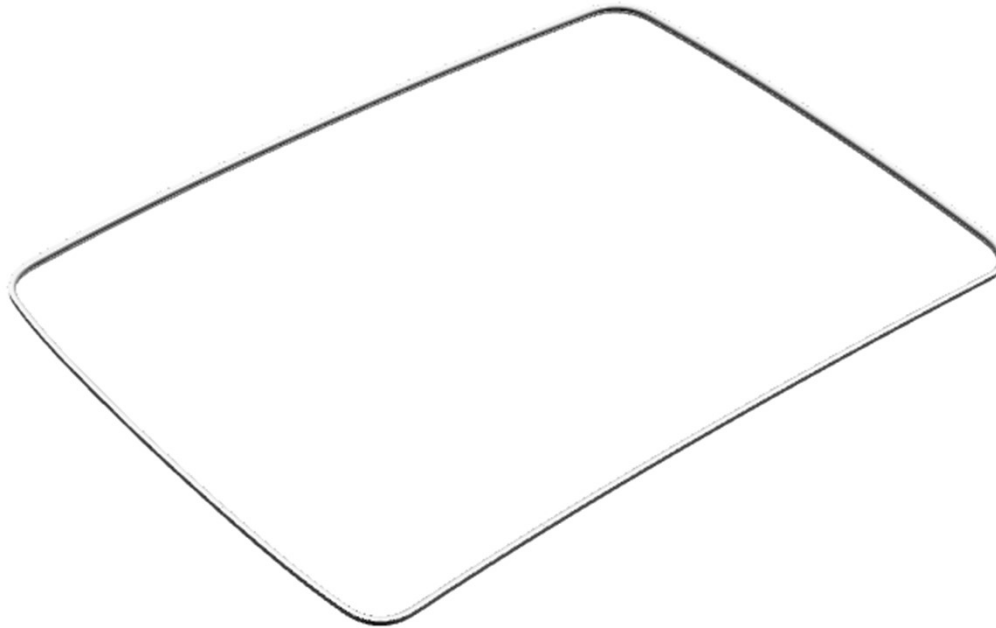


example: twist



example: loose

BODY SEAL NOT ATTACHED



example: gap/not flush



example: gap/not flush

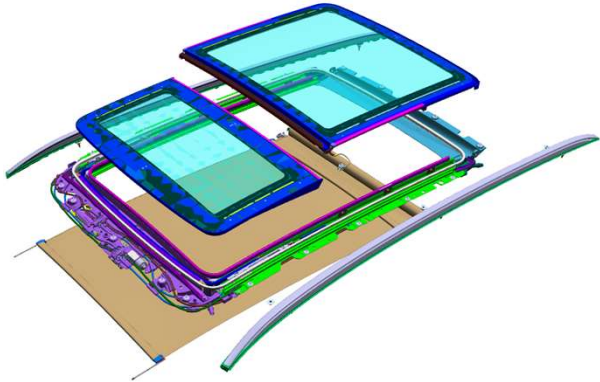
Situation: The body seal may be detached or improperly installed.

Repair: Check body seal to see if it is flush to vehicle. (no loose areas/wrinkles)

If damaged, replace body seal according to ISTA/AIR instructions REP 54 13 055.



GLASS NOT FLUSH



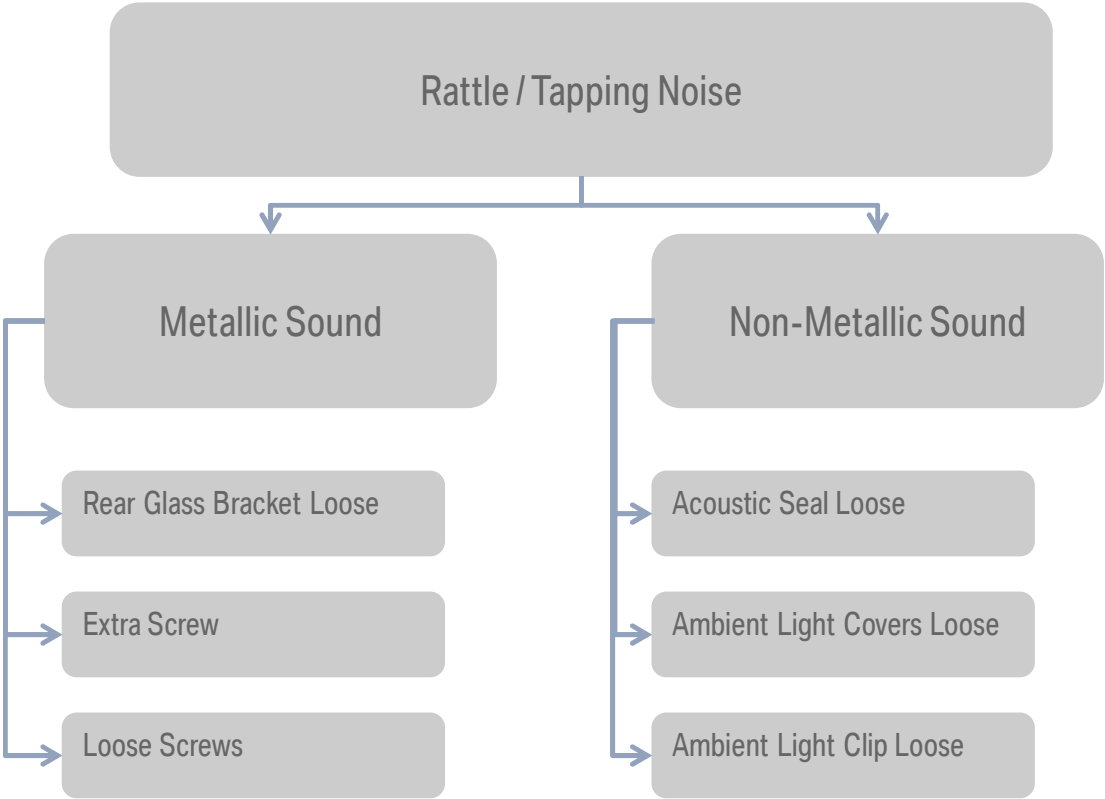
Situation: Rushing wind noise is heard from center of the glass.

Repair: Tape can be used to isolate noise and find where glass is not flush.

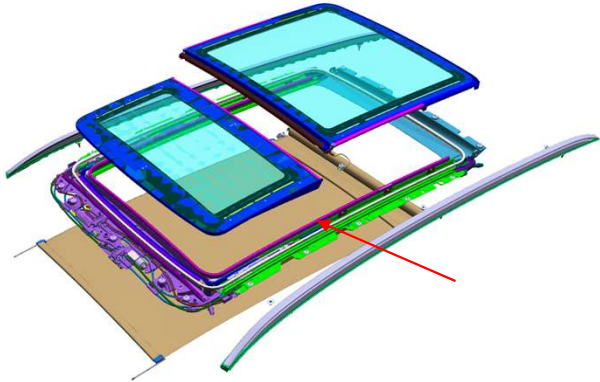
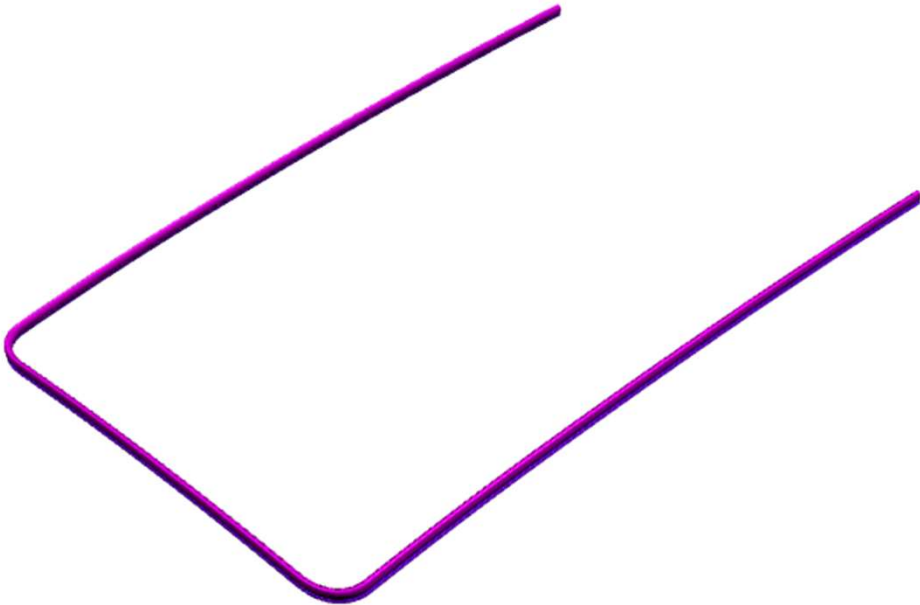
Adjust both sunroof glass panels according to ISTA/AIR instructions REP 54 13 002.

STATIC NOISE

WHAT DOES THE STATIC NOISE SOUND LIKE?



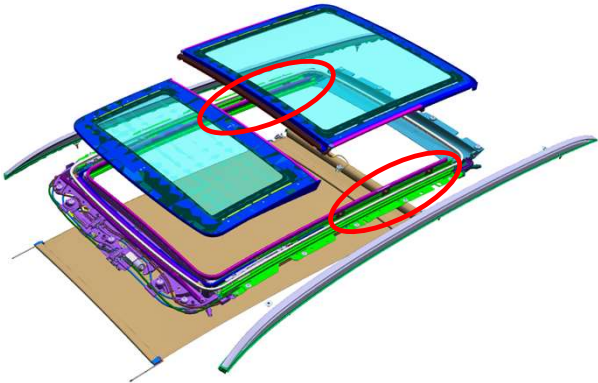
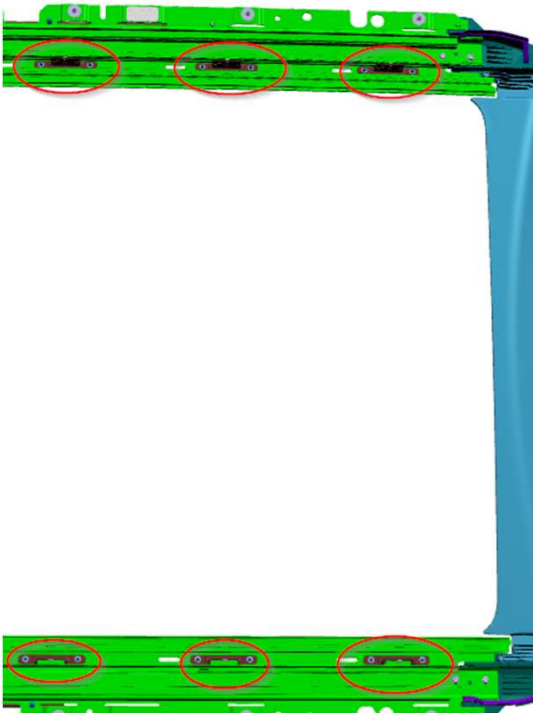
ACOUSTIC SEAL LOOSE



Situation: Rattle or groaning noise heard while driving over rough road surfaces. Upwards pressure on the glass will stop the noise. The cause is interference between the sunroof glass and acoustic seal mounted to the sunroof frame (not the roof perimeter seal).

Repair: Slightly lower glass (within specification) to increase pressure between the glass and the seal.

REAR GLASS BRACKET LOOSE

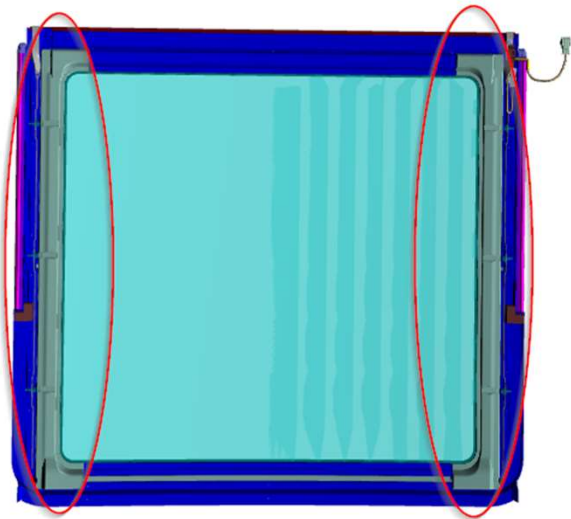
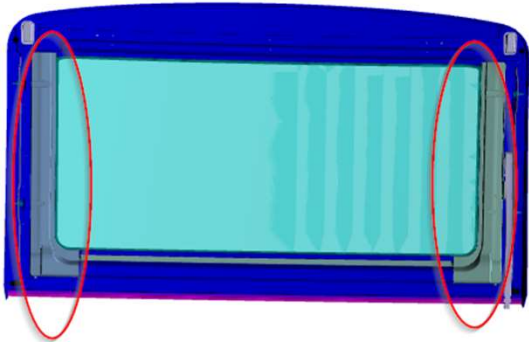


example

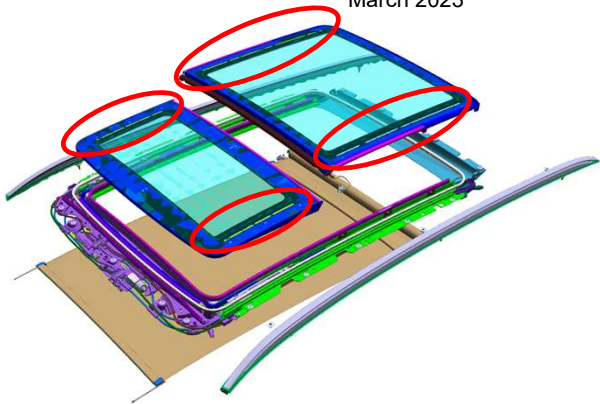
Situation: Metallic noise heard while driving over rough road surfaces.

Repair: Inspect bracket screws (**Bracket to frame**, not glass to bracket). Check for any cross threaded screws. If cross threaded screws are found then replace screws. If screws can't be tightened correctly, the frame would need replacement.

AMBIENT LIGHT COVERS LOOSE



example



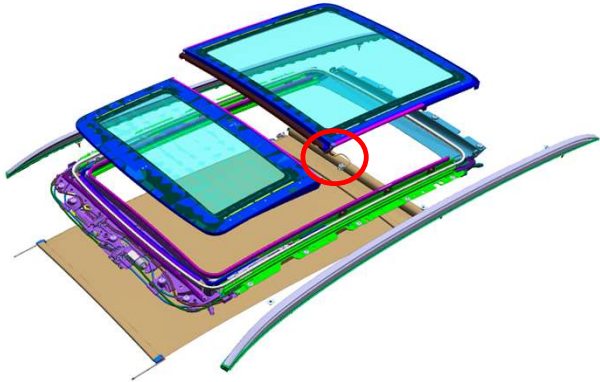
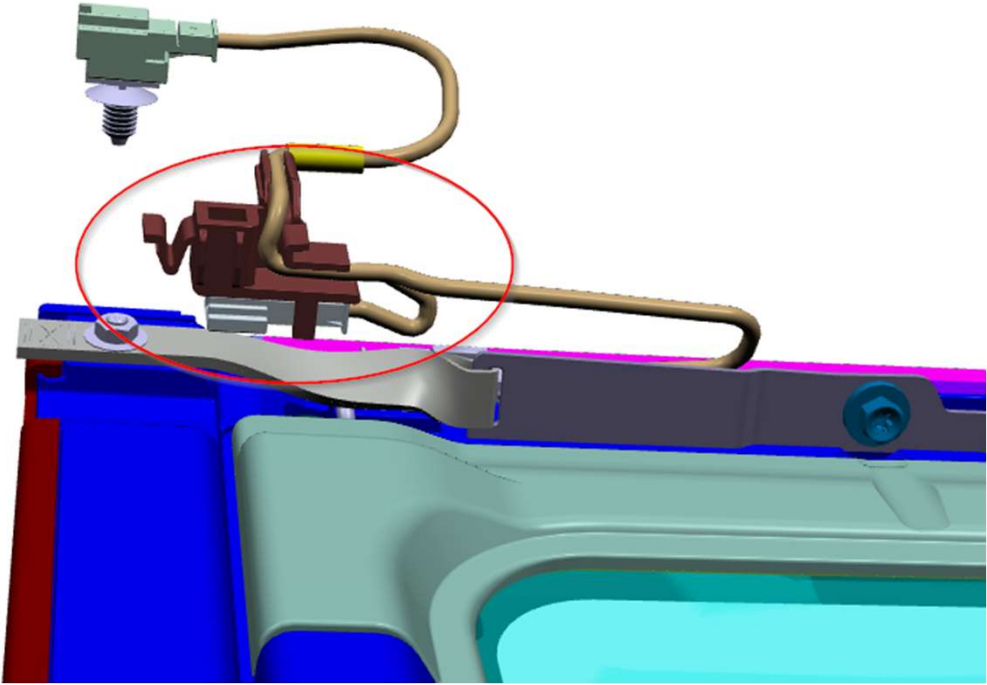
Situation: Rattle is heard from plastic cover tapping on glass panel (front or rear glass) when driving on rough road surfaces.

This situation only affects vehicles with SA407 (Panoramic Sky Lounge LED Roof)

Repair: Attempt to insulate with felt tape is visually appropriate. Replace glass panel according to ISTA/AIR instructions REP 54 13 250 if insulation is not possible.



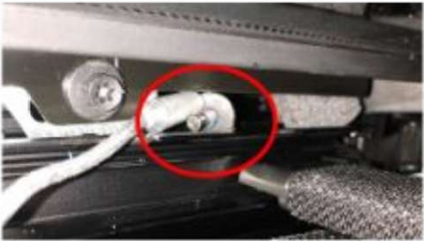
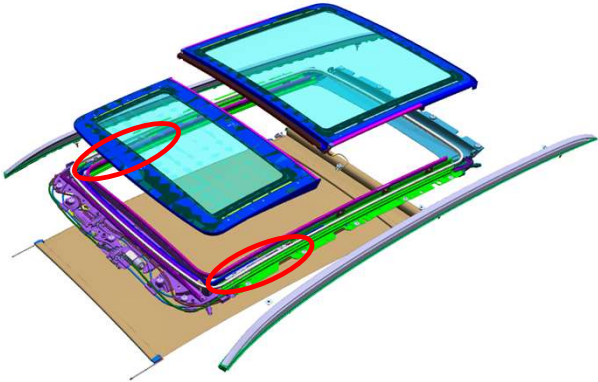
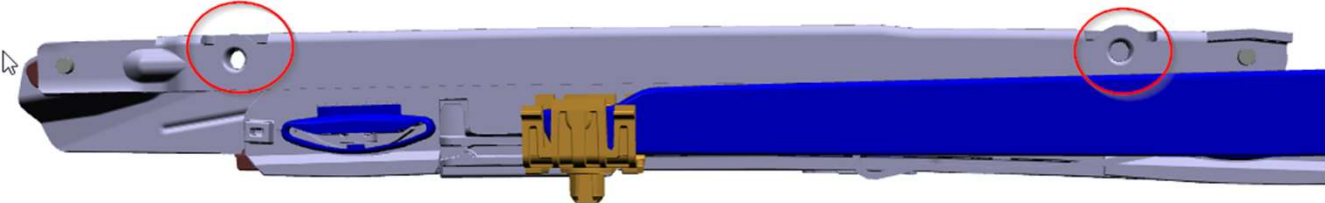
AMBIENT LIGHT CLIP LOOSE/NOT INSTALLED



Situation: A loose clip for the ambient light harness is tapping on the glass or contacting the sunroof mechanism. Only affects vehicle with SA407 (Panoramic Sky Lounge LED Roof).

Repair: Correctly install the harness clip.

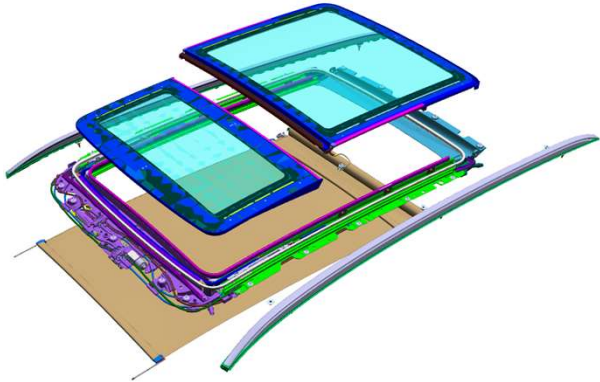
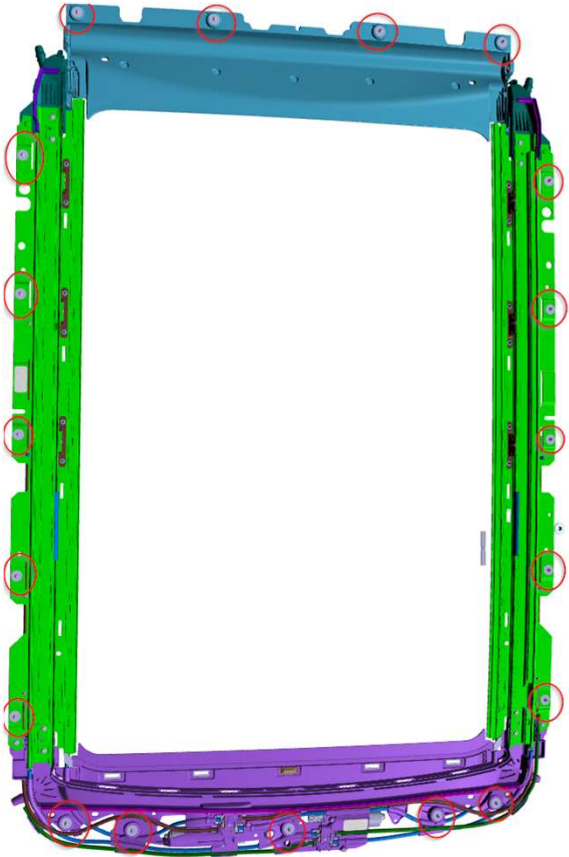
EXTRA SCREW



Situation: A metallic “rolling” noise is heard during acceleration/deceleration. An extra screw may have fallen into the track during production. The screw is not missing from any location.

Repair: Remove the extra screw. Additional repairs are not necessary, all other screws are correctly installed.

LOOSE SCREW



Situation: Rattling noise is heard from the roof area. One or more sunroof frame screws may be loose.

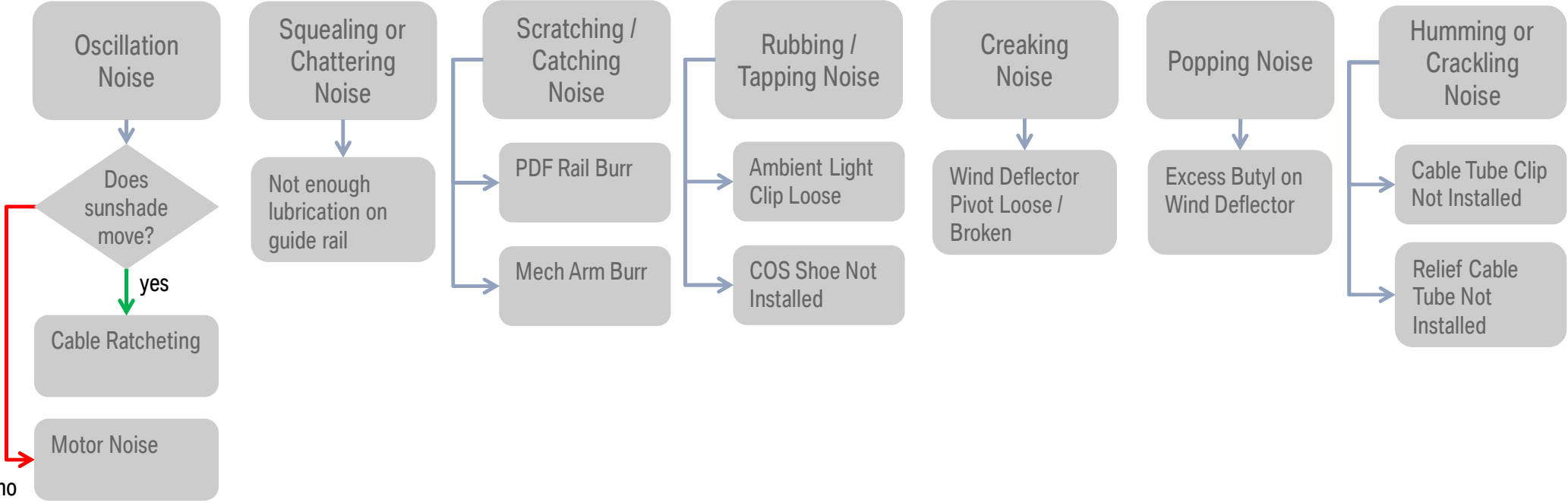
Repair: Inspect screws for signs of cross-threading. Replace screws if damaged. Retorque frame screws correctly according to ISTA/AIR repair instructions to 5.4nm. Retorque glass panel screws to 4.5nm.

Note: 1 under torqued screw is unlikely to cause a noise. Fully investigate to ensure loose screws are the only cause. Attempt to measure torque if not correct and provide feedback via INFO case.

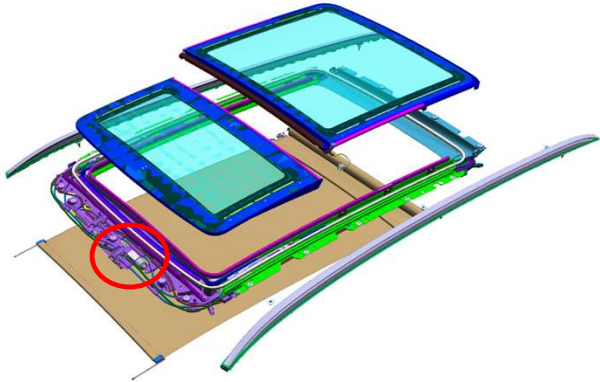
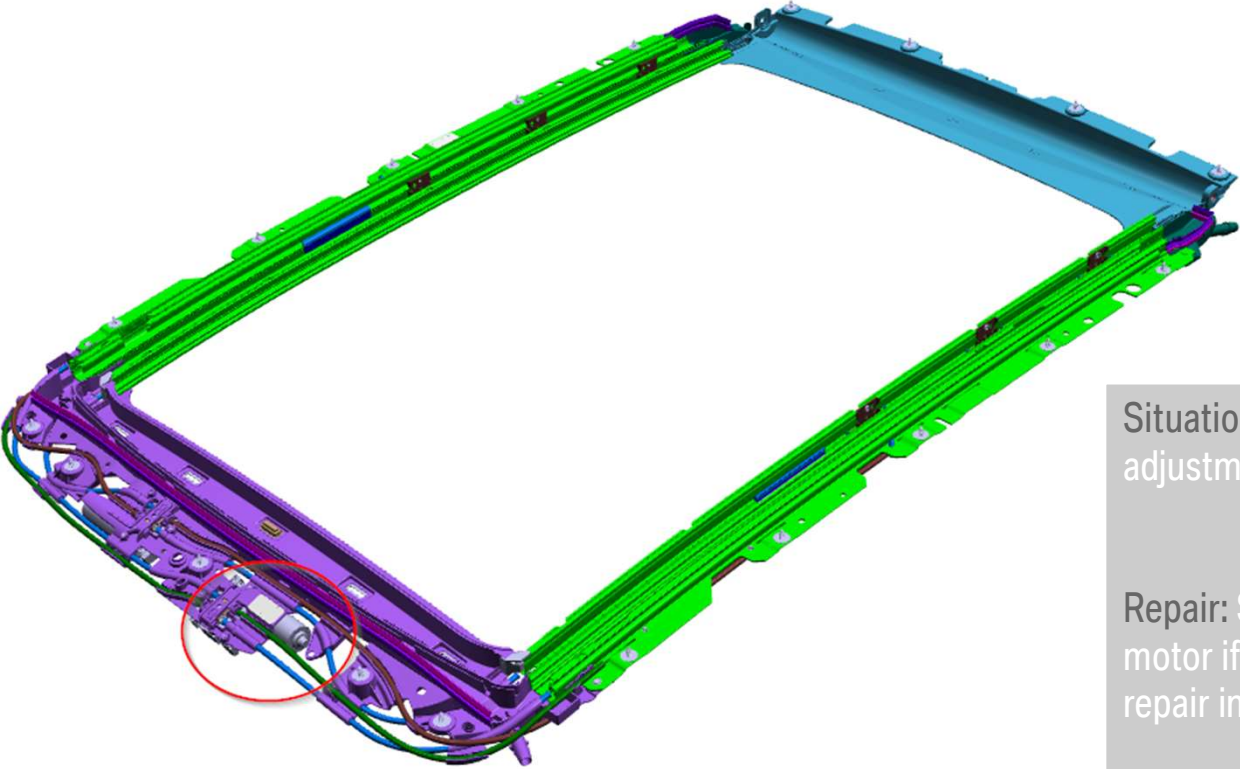


FUNCTION NOISE

WHAT DOES THE FUNCTION NOISE SOUND LIKE?



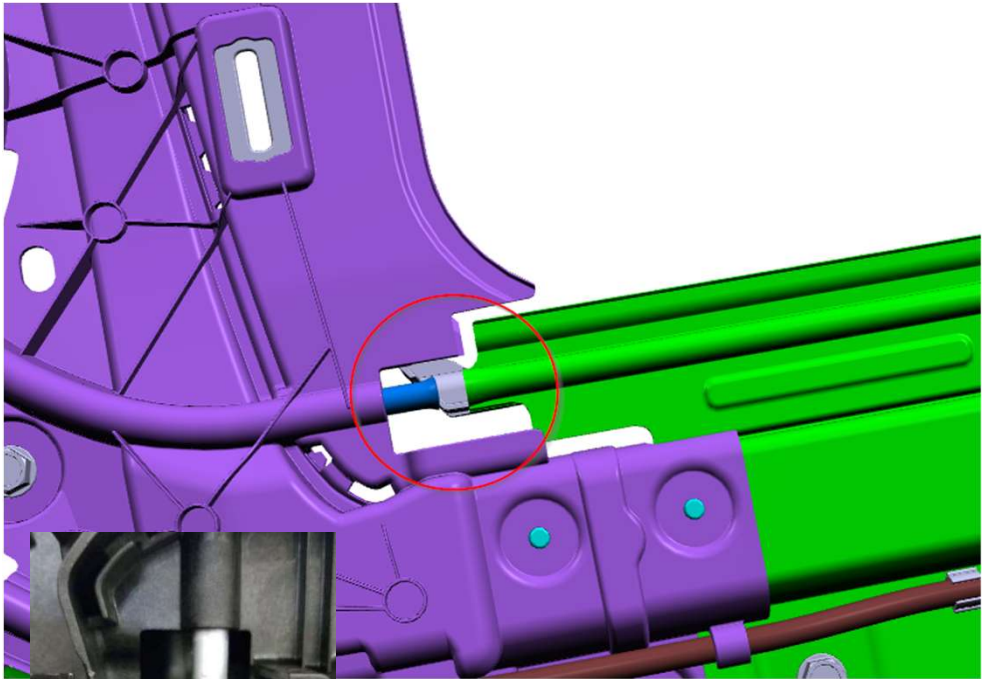
MOTOR NOISE



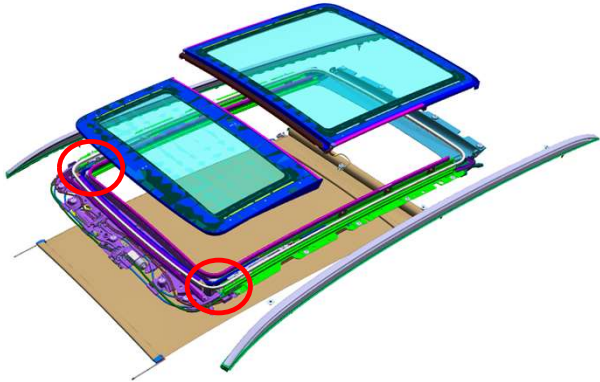
Situation: An oscillation noise is present from the adjustment motor when the shade or glass is moving.

Repair: Swap/replace the motor and retest. Replace the motor if found to be the cause according to ISTA/AIR repair instruction REP 67 61 580.

CABLE RATCHETING



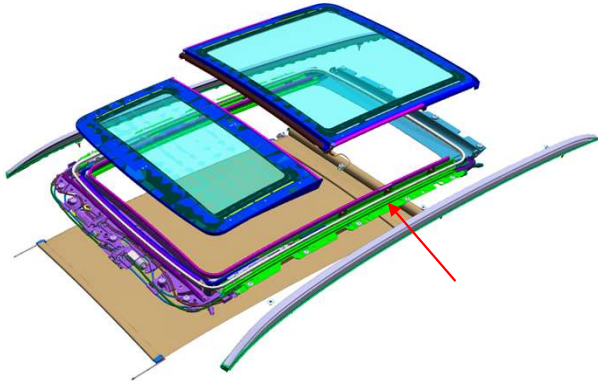
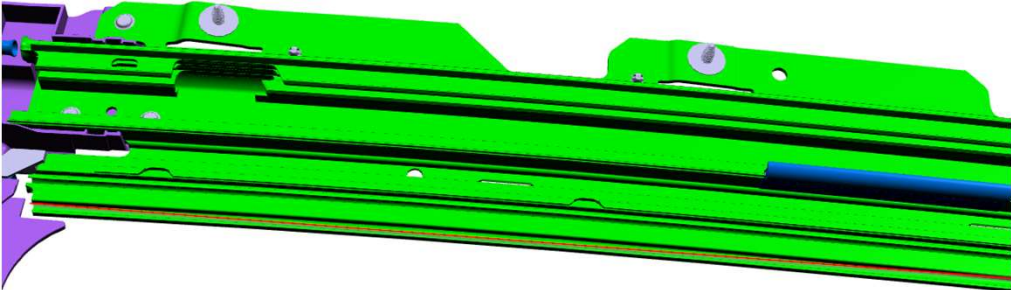
Defect: misaligned or burr



Situation: A quiet oscillating/chattering noise is present when moving only the sunshade.

Repair: Inspect the sunroof frame for misalignment or a burr on the cable guide as shown. If damage is found, replace the frame according to ISTA/AIR instructions REP 54 13 261.

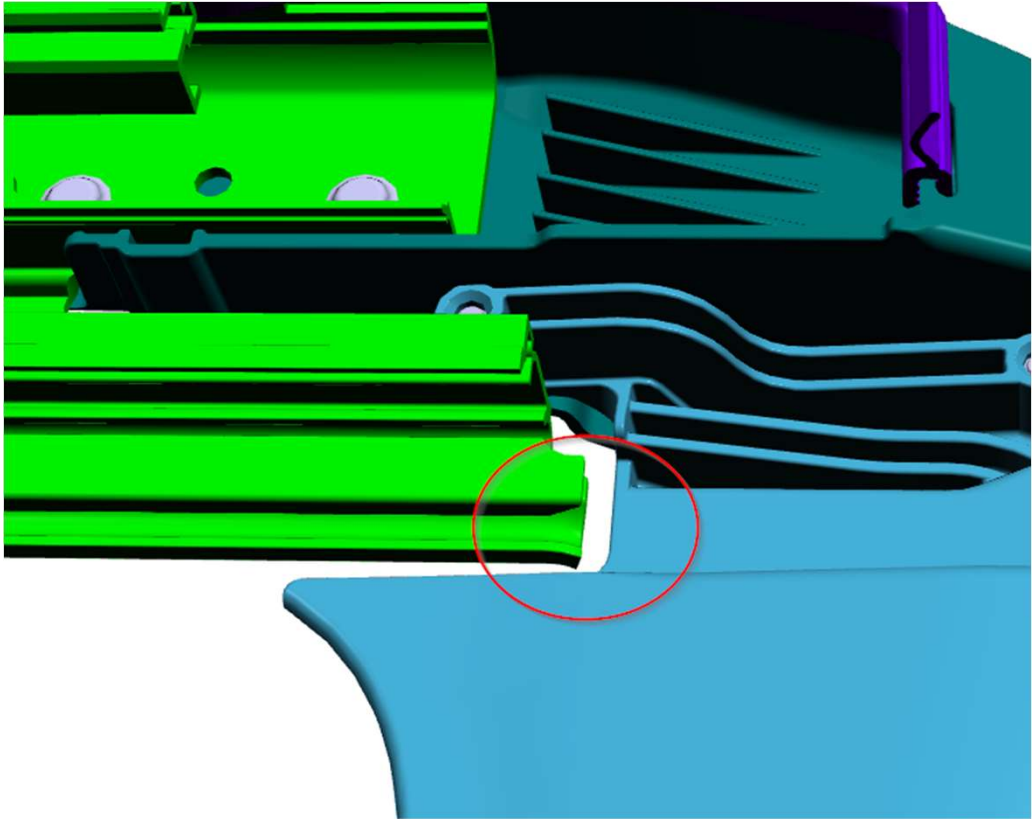
GUIDE RAIL NOT ENOUGH LUBRICATION



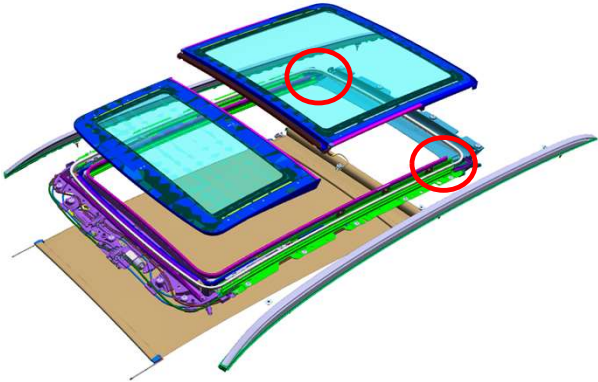
Situation: A squealing or chattering noise is heard when moving the sunshade. Typically on Alcantara (suede) equipped vehicles.

Repair: Clean and lubricate the sunroof guides. If noise persists then replace sunshade according to ISTA/AIR instructions REP 54 13 548.

PDF RAIL BURR



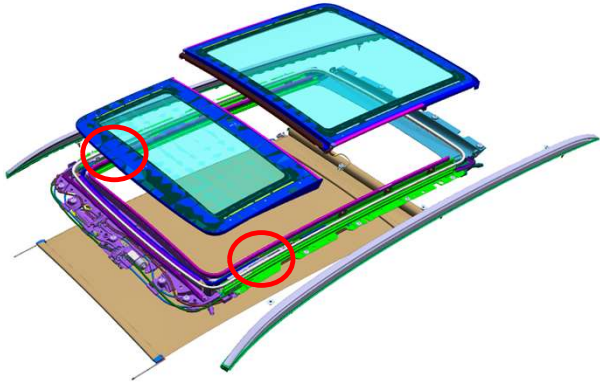
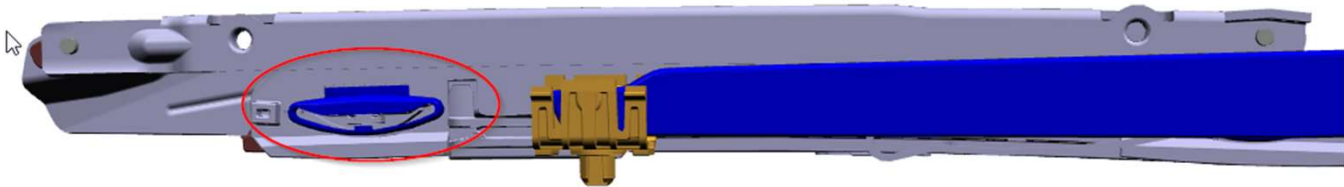
March 2023



Situation: A scratching/catching noise is heard while shade is moving.

Repair: Replace frame according to ISTA/AIR instructions REP 54 13 261.

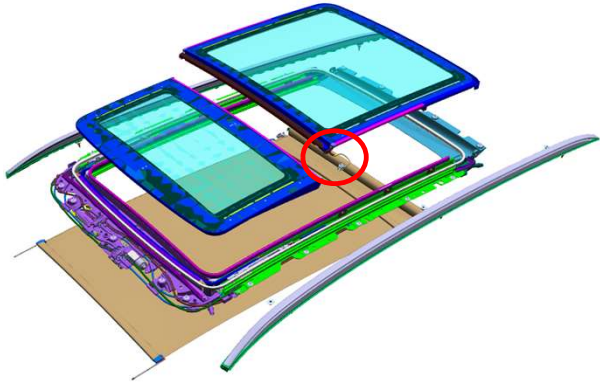
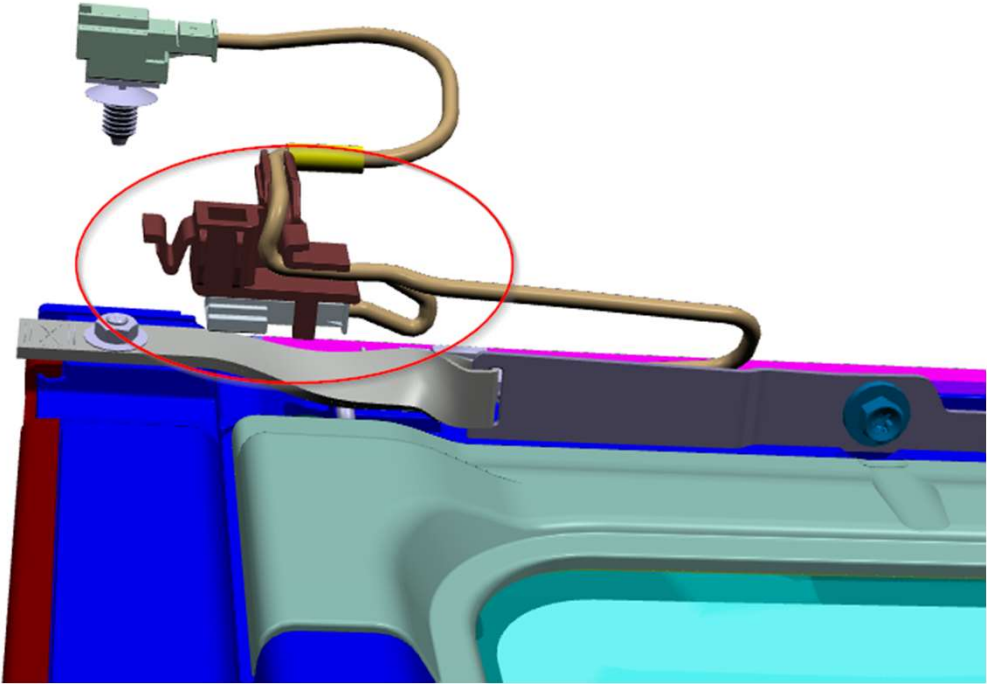
GUIDE SHOE NOT INSTALLED CORRECTLY



Situation: A rubbing/tapping noise heard when glass is moved.

Repair: Replace mechanism according to ISTA/AIR instructions REP 54 13 515.

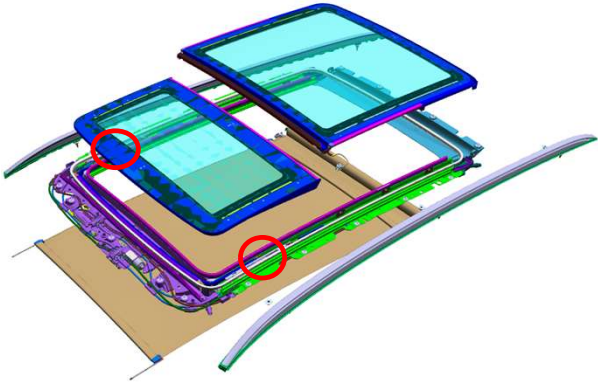
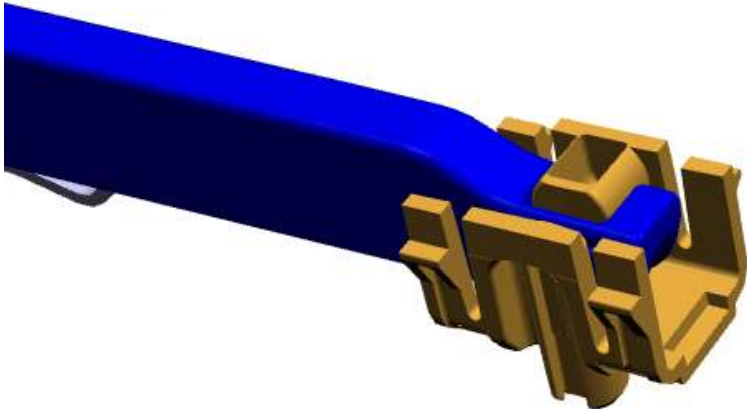
AMBIENT LIGHT CLIP LOOSE/NOT INSTALLED



Situation: A loose clip for the ambient light harness is tapping on the glass or contacting the sunroof mechanism. Only affects vehicle with SA407 (Panoramic Sky Lounge LED Roof).

Repair: Correctly install the harness clip.

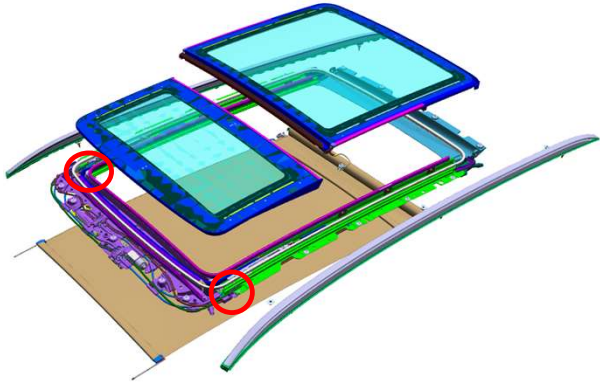
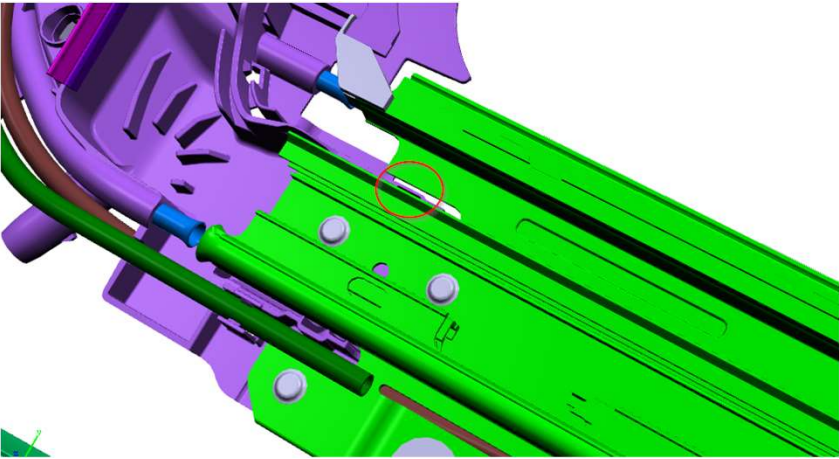
WIND DEFLECTOR PIVOT POINT LOOSE/BROKEN



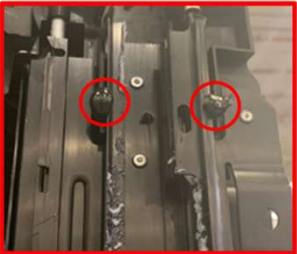
Situation: A creaking noise is present while the wind deflector raises/lowers. Sunroof may reverse due to anti-trap when closing.

Repair: Replace pivot point and wind deflector according to ISTA/AIR instructions REP 54 13 090

WIND DEFLECTOR EXCESS BUTYL



Picture of NOK (Before adjustment)



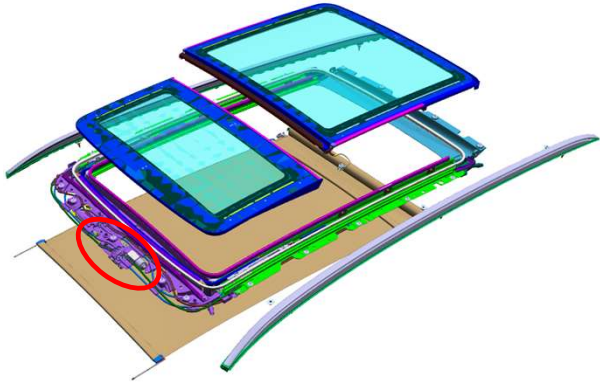
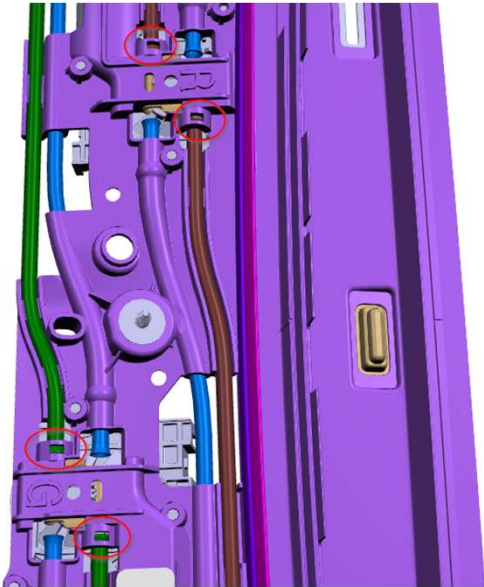
Picture of OK (After adjustment)



Situation: A popping noise is heard when the wind deflector raises/lowers.

Repair: Remove excess butyl to allow the wind deflector to move freely.

RELIEF CABLE TUBE NOT INSTALLED

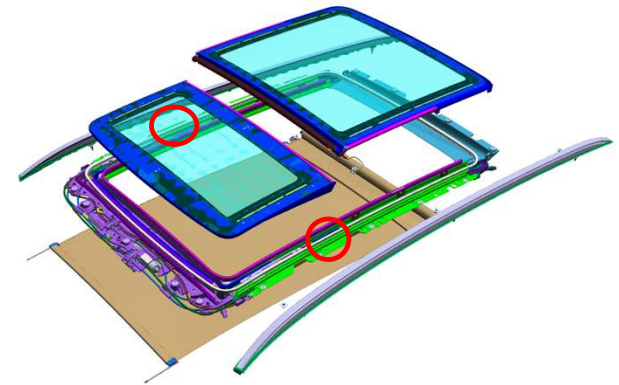
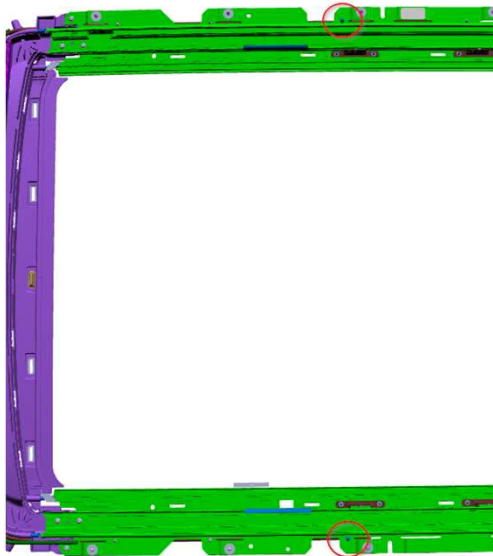


Situation: A humming / crackling noise is present when opening the glass or sunshade.

Repair: Replace frame according to ISTA/AIR instructions REP 54 13 261.



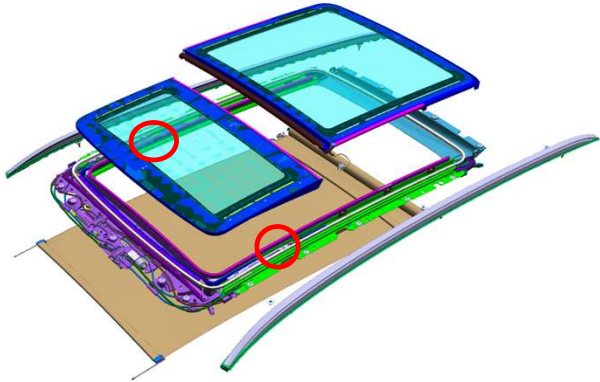
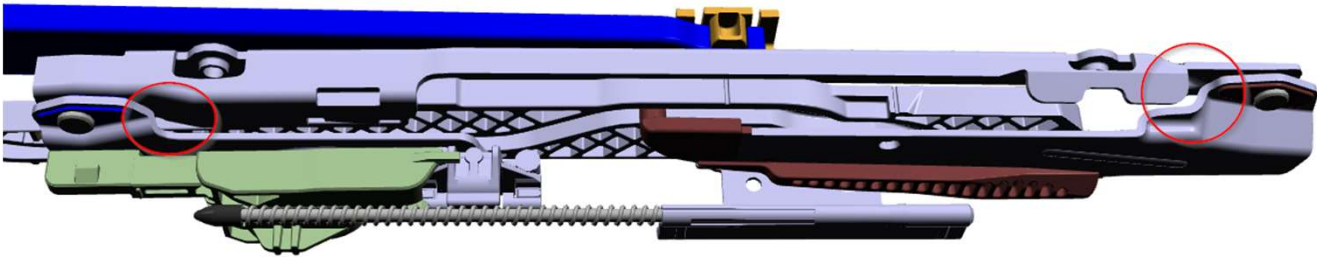
CABLE TUBE CLIP NOT INSTALLED



Situation: A humming / crackling noise is present when opening the sunshade. Or, a plastic rattling noise is heard while driving on rough road surfaces.

Repair: Reinstall the guide tube clip into the frame. If tube is damaged and noise persists then replace the frame according to ISTA/AIR instructions REP 54 13 261.

MECHANIC ARM BURR



Situation: A clicking sound is present when the glass is opened to vent.

Repair: Inspect the pivot area for a burr and remove it if found. If burr is not found then replace the sunroof mechanisms according to ISTA/AIR instructions REP 54 13 515.

A PROBLEM NOT SHOWN HERE?

- If you are seeing issues on any of the Spartanburg built vehicles that aren't included here please send me an email with as many details as you can. We are working closely with Plant 10 to investigate emerging issues and trends and we want to know about new problems.
 - If you see a problem that's not included in the presentation- we probably have never seen it.
-

QUESTIONS?
