Pop-Up Troubleshooting Guide

Offered by
Signature Automotive Products

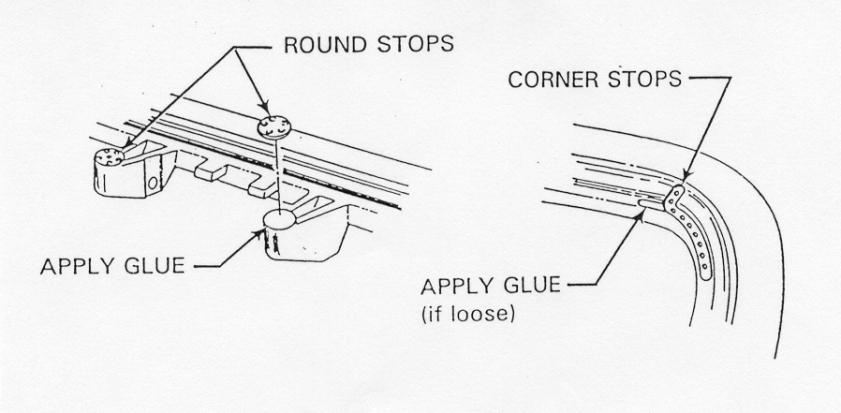
WATER INTRUSION

DETERMINE HOW THE WATER ENTERS THE VEHICLE

1) Does the water come in from the area where the top frame attaches to the vehicle roof? (Look for water stains and/or wet spots on the interior headliner).
2) Is the water entering between the main seal and the glass? (Look for water drops on the inside of the glass panel or on the interior frame after a rainy day or after a water test or car wash).
3) Is the water entering through the corners?

EXAMINATION OF THE SUNROOF STRUCTURE AND COMPONENTS

1) Check whether both front hinges are tight or whether one or both of them are loose. (Remove the glass panel and try to rotate the two metal hinges. You should not be able to move the hinges without applying force).
2) Check whether all the frame stoppers (round and straight) are still attached to the top frame. (Each roof has 6 frame stoppers attached. One stopper in each corner and one stopper directly in the front and the rear of the top frame).



3) Check the condition of the silicon seal.
    A. Is the seal still in place and safely attached to the top frame?
    B. Is the seal fully extended and upright, specifically in the corners, or does it appear as if the seal is collapsed?
    C. Is the seal damaged? Look for cuts, deformation and /or foreign objects on the seal.

4) On models IS520 and IS525 it is required to confirm whether the crank handle can be operated without slipping, in particular when the glass panel is cranked to a fully closed position.

SUGGESTED SOLUTIONS TO THE OBSERVED CONDITIONS

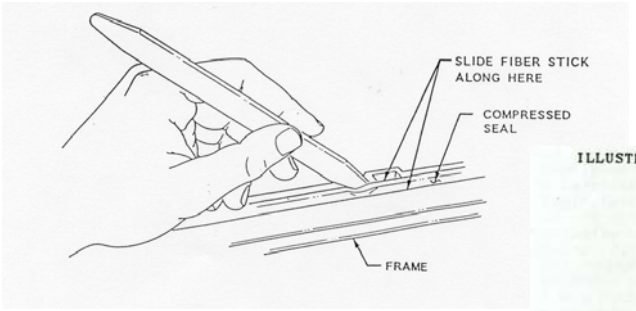
A) If the water is entering through the sunroof to car roof attachment section, you have to proceed as follows:
   1) Verify whether sufficient butyl or silicon sealant is used to bond the sunroof to the vehicle roof surface. If that is confirmed, verify whether all the frame screws on the bottom frame appear to be tight and torqued right. Provided you have sufficient sealant, tighten the frame screws if necessary.
   2) If you still detect a leak, the butyl must be replaced. Remove the screws and remove the old butyl or sealant from underneath the frame and from the vehicle roof surface. Apply fresh butyl or sealant to the frame and re-install the sunroof. Tighten the frame screws without the glass panel installed. Install the glass panel after the installation of the frame is complete.

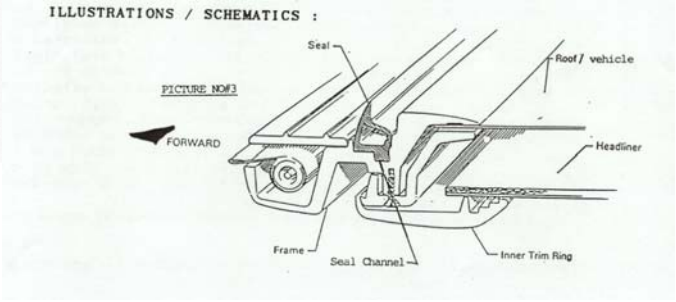
B) If the water is entering through the main silicon seal, proceed as follows:
   1) Loose Hinges: This condition can create various problems since the glass panel is not sealing properly. The loose hinges may cause the leak. Loose hinges might also create noise problems due to the glass panel rubbing against the frame when it is out of alignment. Tighten and/or replace hinges as needed. Note: When replacing hinges, always replace both the right & left as a set.
   2) Missing stoppers will always create a leak since the glass is not seating properly (bad contact with the seal and frame). This condition may also cause wind noise. Identify which stopper is missing and reattach with super glue.
   3) If you observe a malfunction of the top silicon seal, try the following first:
      a) Remove any foreign objects.
      b) Clean the seal with a wet sponge.
      c) In case the seal is collapsed, try to re-erect the seal by running your fingertip around the edge of the collapsed seal portion in an attempt to lift the seal up. If the seal comes up and stays that way, the problem is corrected. If the seal collapses again, remove the worn out seal.
      d) After you have ruled out all other possible factors of why the seal could have failed (dirt build up, improper handling procedures of the sunroof, improper glass panel insertion after “topless” driving, etc) you want to consider an exchange of the seal to remedy the situation. Any serious condition, which could impair the function of the seal, must be considered a reason for seal replacement. (Pinched seal, collapsed seal, loss of the entire seal, loss of seal portions, etc) All Inalfa Sunroofs’ pop ups have a unique 100% silicon contact seal that is attached to the seal channel to the top frame with a liquid, fast curing silicon material which creates an excellent bond between the polymer of the frame and the main seal. Inalfa uses two types of main seals. A hollow profile seal with a lip and a hollow profile with a long seal stem. Both types are made from 100% silicon that has been proven to be very durable. Only very few precautions must be observed to achieve optimal results and the new seal will be functioning without problems for many years to come.

Seal Removal

1) Remove the glass panel and store the glass in a safe and secure place.
2) Run a hook tool into the groove between the seal & frame. This should help you to separate the seal from the frame. Note: try to avoid any damage to the old seal. The goal is to remove the old seal from the seal channel in one piece.
3) Hold on to a portion of the seal and pull the seal out of the frame groove. Pull evenly, which avoids rupture of the old seal.
4) Clean the seal channel (frame groove) with a scrape tool and assure that all the major silicon particles have been removed from the groove. (The seal channel should be reasonably clean – small silicon residue may be neglected and will not create problems)
5) Apply an even bead of fast curing silicon to the bottom part of the groove ($1/8^{th}$ of an inch).
6) Insert the fresh main seal into the seal channel of the frame. Start with the center of the frame (opposite to the handle) and make certain that the two small holes in the seal are pointing towards the handle section. Apply light but consistent pressure while inserting the seal and assure that the seal stem slides fully into the designed channel.
7) Insert the glass panel for a moment to apply even pressure to all the exposed seal area.
8) Remove the glass panel again and let the fresh silicon cure for 30 minutes.
9) Insert the glass panel again and close roof completely. Leave the panel fully closed for at least 24 hours. Explain to the customer that the roof must be kept closed for 24 hours to assure proper bonding of the fresh seal with the frame material.

4) If you observe any skipping while cranking the handle, the entire top frame must be replaced.





*********IMPORTANT******IMPORTANT******IMPORTANT********

Use proper amount of silicon. Do not overfill the seal channel, specifically on lip seal applications. Excess silicon may ooze out of the channel and might bond the lip of the seal to the frame that will render the seal useless.

Make certain that you wait 30 minutes prior to the reinstallation of the glass panel to avoid similar situations.

Inform the customer that the sunroof must be kept closed for 24 hours to avoid dislocation of the fresh seal while curing of the silicon takes place.

In the event that all of the above mentioned procedures and instructions do not help correct the problem, please call Inalfa Sunroofs' for further assistance. (800) 521-9753.

NOISE COMPLAINTS

It is important to identify whether the observed noise is originating from the sunroof or from another part of the vehicle. Very often, the customer believes he has a problem with noise after a sunroof has been installed. We have observed that certain customers have the tendency to incorrectly blame all sorts of pre-existing and/or unrelated problems on the newly installed sunroof, which can mislead the installer in his efforts to find the source for the alleged trouble. This needs to be separated from the real issues. Various applied methods of installation can also create noise problems that have nothing to do with the actual sunroof product.

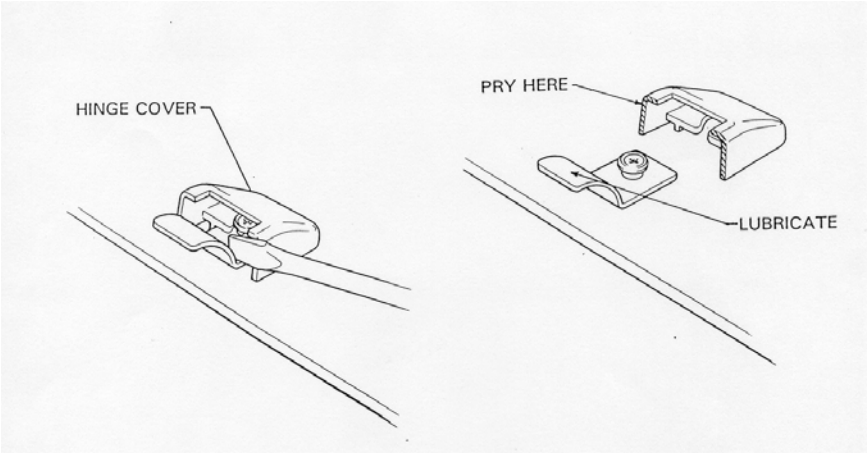
We also need to discriminate between the noise problems generated by the installed sunroof, and the potential problems caused by certain installation methods used by the installer that might not always comply with our guidelines.

RUBBING & GRINDING NOISE

1) Noise originating from the hinge area.
2) Noise originating from the front of the frame.
3) Appears to originate in various areas of the roof while driving.

SUGGESTED SOLUTIONS

A) The plastic hinge covers rubbing against the frame may generate noise at the hinge area. Remove the hinge covers and file the components down on the front (where they point towards the frame) approximately 1/16 of an inch. Re-attach the hinge covers and verify that the required clearance between the components and the frame is created. In case there is ample clearance between the frame and the hinge covers but the noise is still originating from the hinges, lubricate the hinges with spray lubricant or other available clear grease. (Differential oil 90WT also seems to work very well). Reinsert the glass panel with the lubricated hinges.



B) Noise created at the front section of the frame can also be a result of loose hinges. Without the firm attachment of the glass to the frame via the tight fitted hinges, the panel might shift and rub against the frame that may create a certain noise. Also examine the clearance between the glass panel and the front of the frame. With the hinges firmly attached, the glass panel can rub against the frame provided the gap between the glass and the frame does not allow for the required clearance.

This condition could be caused by installations of sunroofs in vehicles with extreme surface sweep of the vehicle roof. This adverse condition could even get worse in situations where the sunroof was installed with the glass panel already attached to the frame while the installer was tightening the screws. In certain vehicles with extreme sweep of the roof, this procedure could narrow the gap between the glass and frame even more and might result in a rubbing noise.

If that is the case, remove the glass panel and unscrew the frame. Remove the top frame and insert a spacer bar into the top frame center section to keep the frame from moving with the glass. Re-attach the top frame to vehicle roof using silicon instead of butyl. Tighten the frame screws with the spacer bar still in place. After the silicon has hardened, remove the spacer bar and insert glass panel. In very rare and isolated applications, the bottom frame must be glued to the vehicle roof inside with silicon (as described in the top frame scenario). This creates a good connection between frame and vehicle and does not allow any further shifting of the sunroof

when the vehicle body is moving and shifting. Similar disturbances can be observed when the sunroof rubs against the vehicles' roof skin along the cut line as a result of the cut hole being too small. Always allow for ample clearance around the frame to avoid this installation problem.

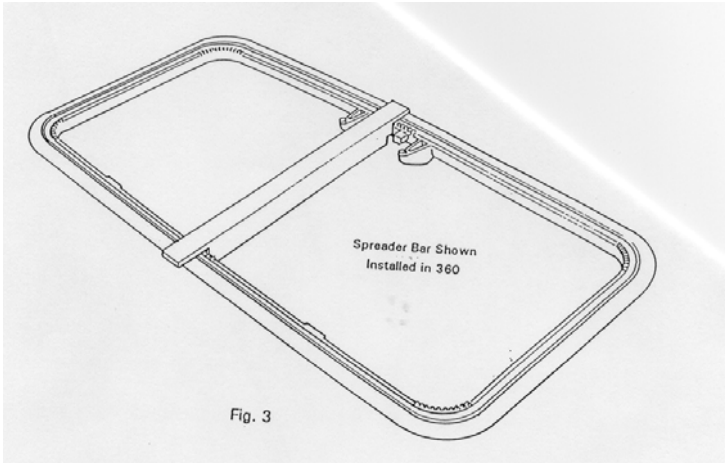


Fig. 3

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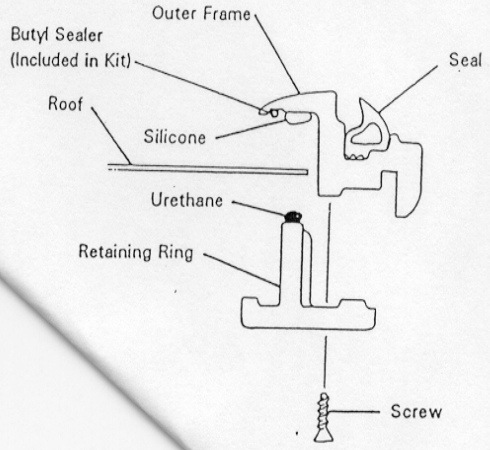

Fig. 2

SQUEAKING NOISE

1) Generating in the hinge area. Treat as discussed above.
2) Generating in the handle area. This condition could be caused by either plastic retaining pins or by the two main handle components.

   Provided that you have identified the handle pins as the source for the noise, replace the handle pins with metal pins. Another option is to use the same oil for lubrication on the handle pins as described earlier (90WT differential oil).
   Should you determine that the noise originates from the handle shell, please lubricate the area where both handle parts fold together. Use the lubricant as previously mentioned.

RATTLING NOISE

Loose hinges can cause noise in the hinge area. Remove the glass panel and tighten or replace hinges. Rattling in the handle structure could be an indication that the entire handle mechanism is not properly locked sideways into the frame (the two slide pins which need to be firmly shifted to the left and right to connect the glass handle assembly to the frame).

WIND NOISE

1) First determine whether the noise is positively coming from the sunroof. (Other parts of the car may produce similar effects, i.e., antennas, side windows, door seals, etc). Next determine the roof model.
2) Sunroofs installed in cars with a stronger sweep on the vehicle surface have been reported to create wind noise on occasion. Noise originating from the corners of the frame might be caused by insufficient contact between the glass and top seal. Make sure that the seal is in good condition and verify that full contact with the glass is made when the panel is closed. If the seal can be identified as weak or imperfect, remove the old seal and replace it with a new seal. Refer to the previous sections for guidelines on how to exchange seals). Loose hinges may also create wind noise due to misalignment of the glass panel. Remedy the situation as earlier explained.

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