



Adjusting Hinges for Liftgate Alignment

Classification Repair Bulletin **Section/Group** 11 - Closures **Country/Region** All

Year 2012 - 2013 **Model** Model S **Version** All

Bulletin Classification: *This repair bulletin provides instructions and guidelines for a noted condition or a customer concern. The information provided can address a broad range of known or perceived issues with the operation of Tesla vehicles. This bulletin might not be VIN-specific.*

Condition

On some vehicles, the liftgate cannot be aligned to the customer's satisfaction only by adjusting the striker and snubbers.

Correction

Remove the liftgate glass and lower the headliner to access the screws that secure the liftgate to the body. Expand the bolt holes and loosely install the bolts with new washers. Align the liftgate before fully torquing the bolts.

Preparing to Remove the Liftgate Glass

1. Ensure that the vehicle is on a flat, stable surface.

NOTE: The vehicle cannot be on a lift during this procedure.

2. Ensure that all tires are inflated to their recommended pressures (refer to the Service Manual, General Information > Technical Data > Tire Pressures).
3. Fully close the panoramic roof, if equipped.
4. Ensure that the power liftgate is operational, if equipped.
5. Ensure that the rubber snubber on each of the quarter panels is at its lowest setting (Figure 1).



Figure 1 (RH side shown)

6. Protect all panels that are adjacent to the liftgate:

- C-Pillar body panel
- Fixed glass panel / Roof panel (depending on whether the vehicle is equipped with a panoramic roof)
- Quarter panels
- Rear Fascia

7. Remove the upper liftgate trim panel (refer to Service Manual procedure 15111002).

8. Remove the left and right liftgate trim panels (refer to Service Manual procedure 15111702).

9. Disconnect the 4 harnesses that attach to the glass on both sides of the liftgate (Figures 2 and 3). Tape the harnesses to the liftgate so that they are out of the way when the glass is removed in a later step.



Figure 2 (LH side)



Figure 3 (RH side)

10. Disconnect the harness that attaches to the center high mounted stop lamp (CHMSL) (Figure 4). Tape the wires out of the way so that they are not damaged when the glass is removed in a later step.

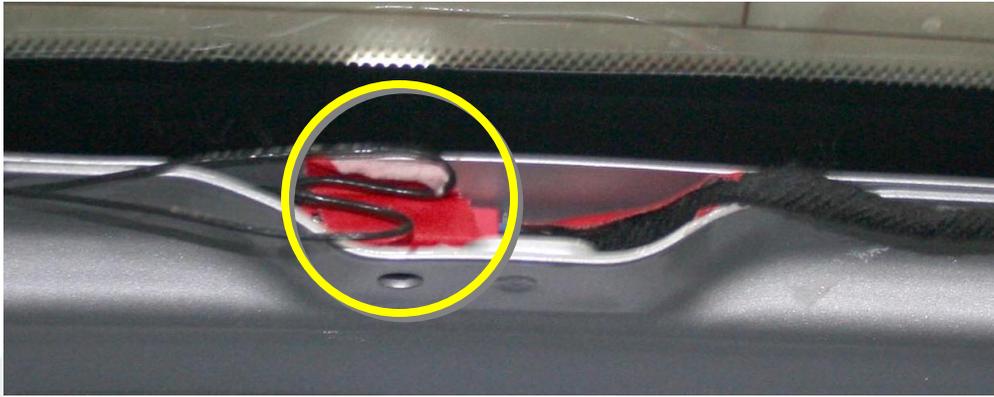


Figure 4

11. Remove the lower liftgate trim panel (refer to Service Manual procedure 15111302).

NOTE: If equipped, leave the power liftgate harness connected.

12. With the liftgate open, tape off the black rear frit on the liftgate glass (Figures 5 and 6).

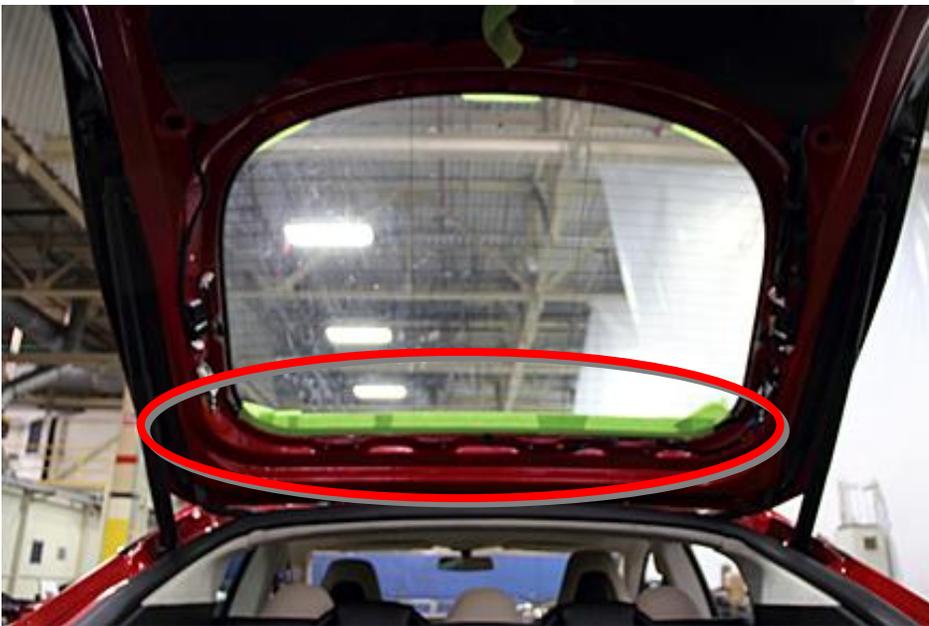


Figure 5



Figure 6 (View from outside of liftgate)

13. Cover the floor and side carpet panels inside the trunk with plastic. This prevents water damage in a later step.

Removing the Liftgate Glass

⚠ WARNING: Read all documentation concerning the appropriate cutting tools before proceeding.

1. Insert the cutting blade into the Equalizer Express360 tool.

⚠ CAUTION: Only use the Equalizer Express360 to cut the 2 lines of urethane at the back of the liftgate glass (Figure 7). Do not use it to cut the urethane at the sides or bottom of the glass.

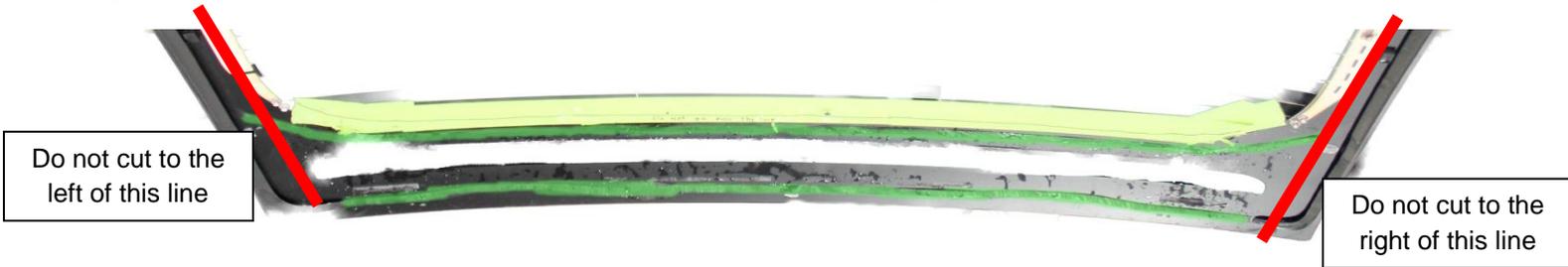


Figure 7 (Lines of urethane shown in green)

⚠ CAUTION: The front and rear frits protect the 2 lines of urethane from UV light. If the frits are damaged in any way, the liftgate glass must be replaced. While cutting, never move the base (non-cutting) part of the tool past the top frit (Figure 8).

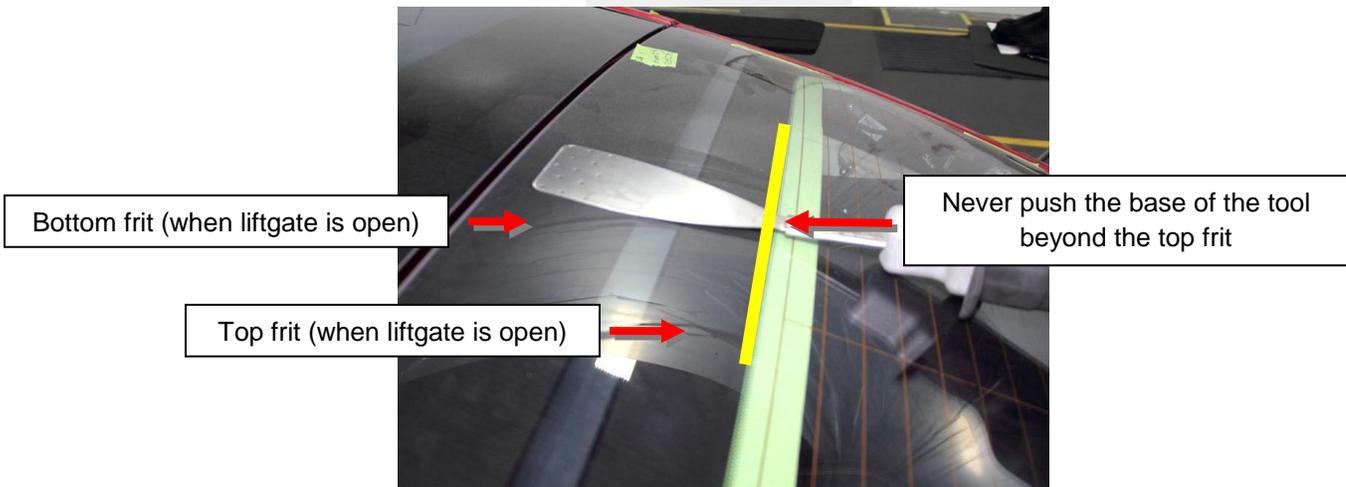


Figure 8

⚠ CAUTION: Before and during cutting, have an assistant spray a solution of soap and water to lubricate the urethane.

2. Position the tool at a 45 degree angle along the rightmost edge of the top line of urethane. Start cutting the urethane, moving the cutting tool from right to left while an assistant continues to spray the soap and water solution to lubricate the urethane (Figure 9).

⚠ CAUTION: Do not cut past the left red lines in Figure 7.



Figure 9

⚠ CAUTION: Do not damage the CHMSL while cutting the bottom line of urethane.

3. Repeat step 2 for the bottom line of urethane.

⚠ WARNING: Before proceeding, read all documentation for the Equalizer Python rotating cut-out wire.

4. Use the Equalizer Python tool to cut the urethane around the sides and bottom of the liftgate.

5. Secure suction cups onto the outside of the liftgate glass.

⚠ CAUTION: Do not rely solely on the suction cups when moving the liftgate glass. Ensure that the glass is supported from the bottom while moving.

6. Lift the glass off of the liftgate and set it gently onto a stand.

7. Mark the location of the CHMSL onto the glass, then remove and inspect it. If it is damaged, replace it.

8. Carefully inspect the 2 frits on the liftgate glass. If they are scratched or damaged in any way, replace the liftgate glass.

⚠ CAUTION: The frits protect the urethane that secures the liftgate glass from UV light. Because the liftgate glass is a structural component, the frits must be carefully examined. If they are scratched or damaged even slightly, the liftgate glass must be replaced.

Preparing to Adjust the Liftgate

1. Remove the rear C-Pillar trim on both sides of the vehicle (refer to Service Manual procedure 15185102).
2. Remove the upper C-Pillar trim on both sides of the vehicle (refer to Service Manual procedure 15184602).
3. Lower the rear of the headliner to provide access to the bolts on the liftgate hinges.

NOTE: Depending on the vehicle, the rear of the headliner might be secured in different ways:

- It might be secured only by the trim panels.
- It might be secured with Dual lock (Figure 10).

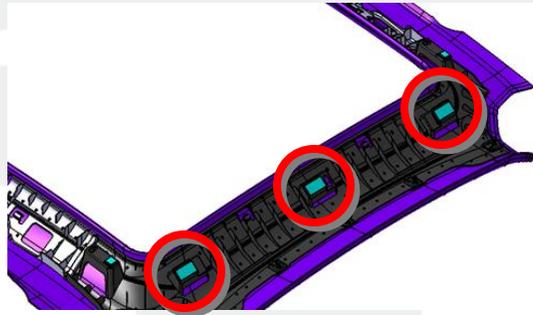


Figure 10

- It might be bolted to the body (Figure 11). In this case, cut off the tethers and discard the bolt upon reinstallation.

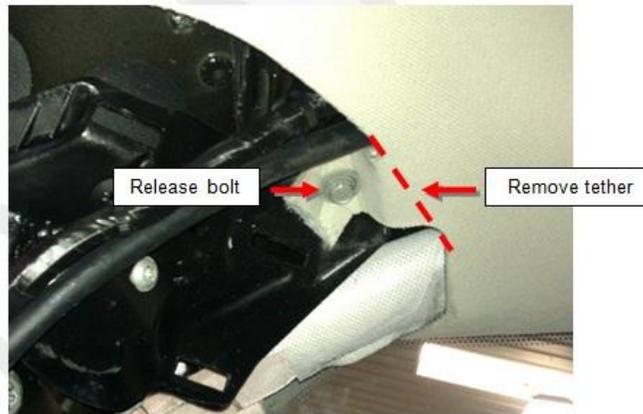


Figure 11

4. Remove the liftgate striker (refer to Service Manual procedure 11203102).
5. Disconnect the lift struts from the liftgate (For the power liftgate, refer to Service Manual procedure 11201002. For the standard liftgate, refer to Service Manual procedure 11201602).

NOTE: The struts do not need to be removed from the body.

! **CAUTION:** When loosening or tightening bolts during alignment, only use hand tools; do not use air or power tools.

6. Remove the 2 bolts at the RH top of the liftgate (torque 10 Nm) (Figure 12).

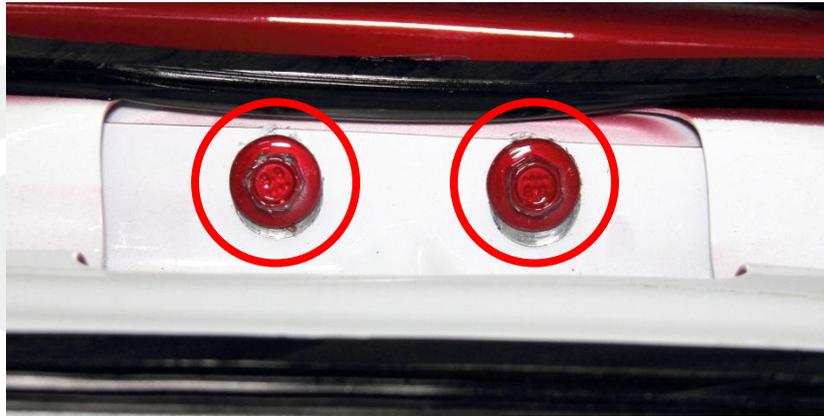


Figure 12 (RH side shown)

7. Remove the 2 nuts that secure the RH liftgate hinge to the body (torque 10 Nm) (Figure 13).

NOTE: These nuts are accessed from inside the vehicle.

8. Break the paint coating on the RH hinge and remove the hinge completely.
9. Remove all sealer from the hinge and body.

! **CAUTION:** Ensure that all sealer is completely removed from both the hinge and the body. Failure to do so prevents the liftgate from being properly adjusted in later steps.

10. Drill all 4 holes on the RH side with a ½ in drill bit.

! **CAUTION:** Do not damage the headliner or sill plate.

11. Deburr the ½ in holes.
12. Vacuum all metal shavings.
13. Apply appropriate etch primer to all bare metal surfaces, depending on the paint manufacturer's specifications.
14. Place a washer on the outer hinge stud on the liftgate sill plate, then hand-tighten the nut.

NOTE: This washer is a Roadster component.

15. Place a washer on the inner hinge stud on the liftgate sill plate, then install the nut very loosely.
16. Position the liftgate hinge, then hand-tighten the outer hinge bolt with a washer.

17. Very loosely secure the inner liftgate hinge bolt with a washer.

18. Repeat steps 6–16 for the LH side of the liftgate.

NOTE: At this point, the inner hinge bolt and the inner sill plate bolt are secured very loosely, while the outer hinge bolt and the outer sill plate bolt are hand-tight.



Adjusting the Liftgate

Adjust the liftgate to the following specifications:

Liftgate C-Pillar to Body C-Pillar (Figure 14)

Gap: 5 mm +/- 1 mm
Flushness: -1 mm +/- 0.5 mm
Equal on both sides

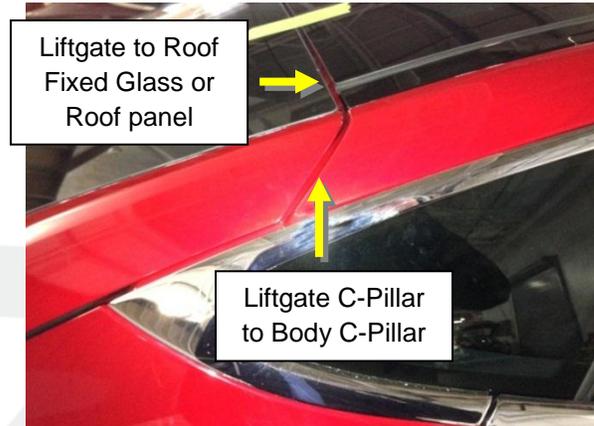


Figure 14

Liftgate to Roof Fixed Glass or Roof Panel (Figure 14)

Gap: 6 mm +/- 1 mm
Flushness: -1 mm +/- 0.5 mm
Equal on both sides

Liftgate to Rear Fascia (Figure 15)

Gap: 4 mm +/- 1 mm
Flushness: 2 mm +/- 1 mm
Equal on both sides

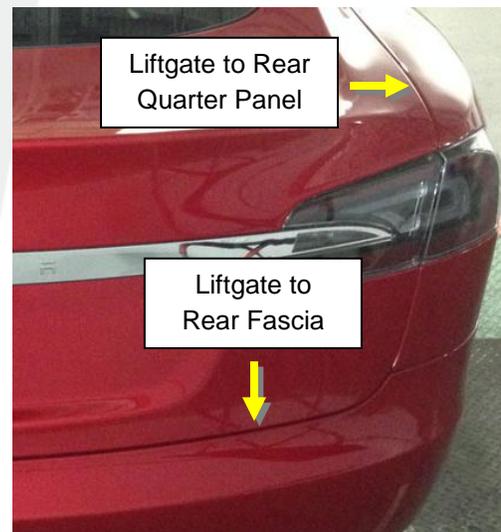


Figure 15

Liftgate to Quarter Panel (Figure 15)

Gap: 4 mm +/- 1 mm
Flushness: 0 mm +/- 1 mm
Equal on both sides

After Adjusting the Liftgate

1. Once the liftgate is properly aligned, fully torque all nuts and bolts to 10 Nm.
2. Reattach the lift struts.
3. Clean and dry the area around each liftgate hinge using alcohol or a residue-free solvent.
4. Apply sealer all around the area where the liftgate hinges meet the body (Figure 16).



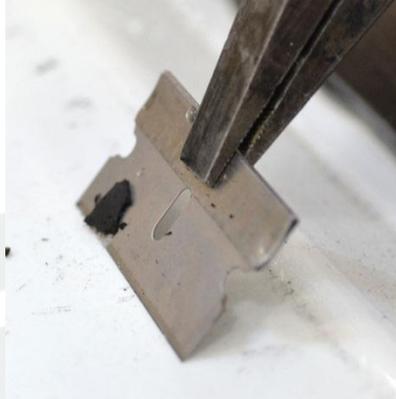
Figure 16 (RH side shown)

5. Apply touch up paint to the area around the liftgate hinges, as necessary.
6. Apply 3M 8551 sealer around the holes.
7. Recheck all gap adjustments.
8. Open the liftgate and set the striker into position, but do not secure the striker bolts yet.
9. Have an assistant sit in the rear of the vehicle. Pull the liftgate down and have the assistant push the striker up onto the liftgate latch. Fully close the liftgate, then have the assistant tighten the striker bolts.
10. Adjust the snubbers on the quarter sill panels to make any final minor adjustments, if necessary.

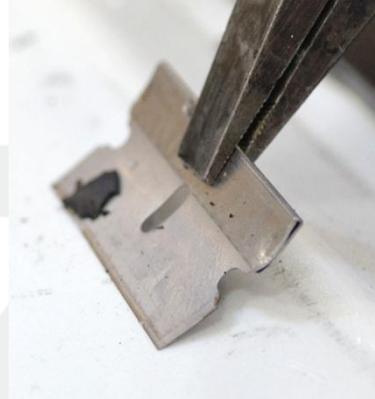
Reinstalling the Liftgate Glass

1. Remove the excess urethane from the liftgate glass and body.

NOTE: A recommended method for this step is to grip a razor blade with a pair of pliers. Touch the blade to the body and gently push downwards. This flattens the blade, which reduces the likelihood of damaging the body (Figures 6 and 7).



✘ Incorrect
Figure 6



✔ Correct
Figure 7

2. Reconnect the CHMSL to the harness in the center of the liftgate and have an assistant depress the brake pedal. Ensure that the CHMSL lights up properly. If any of the LEDs have been damaged, replace the CHMSL.
3. Disconnect the CHMSL and secure it to the liftgate glass using double-sided tape (3M 06397 or equivalent).
4. Close the liftgate.

NOTE: This procedure requires approximately 2 tubes of urethane.

5. Cut the applicator tip on the urethane tube to the appropriate size.
6. Open all 4 windows. This prevents internal pressure from pushing out on the liftgate glass when it is installed.
7. Apply the urethane to the liftgate glass. Be sure to follow the original pattern.
8. Install the rear liftgate glass.

NOTE: Allow at least 8 hours for the urethane to fully cure.

9. Reconnect all harness connections.
10. Have an assistant use a hose to spray water along the edges of the liftgate glass. Ensure that no water leaks into the interior.
11. Reinstall all components that were removed for access.

Affected Part(s) 2006970-00-A ADH, BETASEAL 16009N - 310ML CARTRIDGE (Qty. 2 tubes)
2000210 WSHR, M10 X 20.5 X 1.5, ZNC (Qty. 8)
1022527-00-A CLEAR AUTO SEALER, 5 OZ TUBE (3M 08551)

Shop supplies:

Double-sided tape (3M 06397 or equivalent)
Etch primer (Dependent on paint manufacturer's specifications)
Isopropyl alcohol wipes
Appropriate touch up paint

Special tools:

Lisle Hood Prop
Equalizer Python
Equalizer Express360

Warranty/DMS Coding:

Description	Complaint	Cause	Correction	Time
Vehicle Inspection Only; Liftgate Hinge Adjustment Not Required	A091	B053	S011311008	0.10
Adjust Liftgate Hines to Realign Liftgate	A091	B053	S021311008	4.5

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