



## Tech Note: Adjusting the Rear Doors (Falcon Wing Doors)





## Introduction

Body Repair Tech Notes provide information about Tesla-approved methods and practices for body repair. These instructions assume knowledge of motor vehicle and high voltage electrical component repairs, and should only be executed by trained professionals. Tesla Motors assumes no liability for injury or property damage due to a failure to properly follow these instructions or for repairs attempted by unqualified individuals.

Use this procedure to fix minor alignment issues determined by an inspection or a customer complaint.

Adjusting a Model X rear door (Falcon Wing door) requires a different approach than would usually be used to adjust conventional body panels. The design of the rear door includes several unique features that affect the adjustment process:

- Double-articulating design
- Electro-mechanical struts
- A latch, striker, and bump stops that affect fit

This document contains the following sections:

[Adjustment Direction Terminology](#)

[Closure Adjustment Terminology](#)

[Measuring Gap and Flushness](#)

[Adjustment Components](#)

[Adjustment Guidelines](#)

[Adjustment Procedure Flowchart](#)

[Adjustment Procedure](#)

[Adjustment Worksheet](#)

[Calibrating a Rear Door](#)

[Removing the Secondary Struts](#)




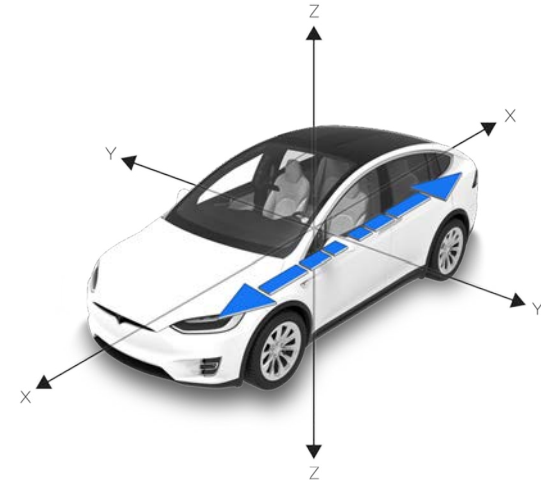
## Adjustment Direction Terminology

Panel adjustments take place along one of three axes of movement (or directions): the X-axis, the Y-axis, or the Z-axis:

### The X-axis is the axis of length.


Moving a panel along the X-axis would move it nearer to or farther from the front of the vehicle.

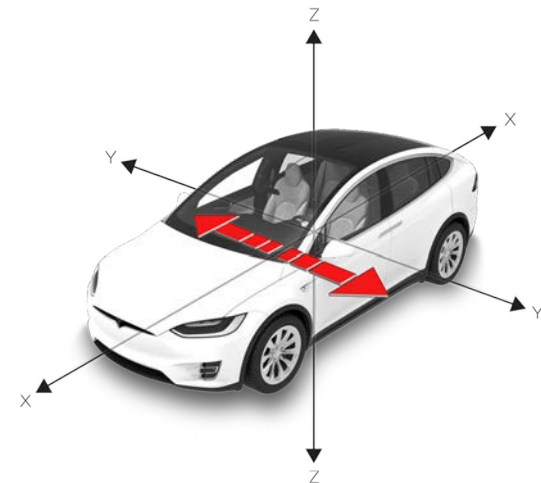
 **NOTE:** Movement directions such as "forward" or "back" typically refer to movement along the X-axis.



### The Y-axis is the axis of width.

Moving a panel along the Y-axis would move it either more to the outside or more to the inside of the vehicle.

 **NOTE:** Movement directions such as "in" or "out" typically refer to movement along the Y-axis.




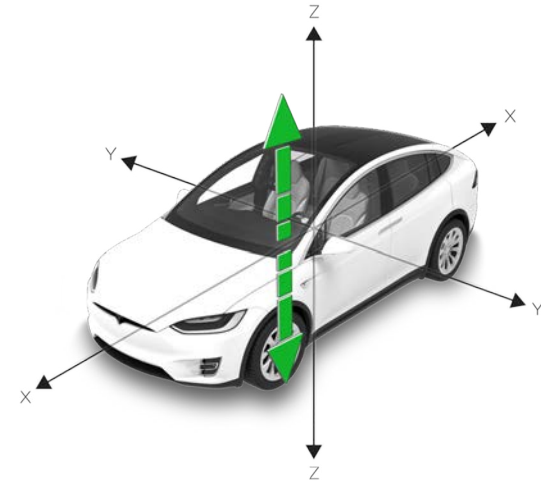


## Adjustment Direction Terminology

### The Z-axis is the axis of height.

Moving a panel along the Z-axis would move it nearer to or farther from the ground.

 **NOTE:** Movement directions such as "up" or "down" typically refer to movement along the Z-axis.





## Closure Adjustment Terminology

When adjusting body panels, the two main criteria used to check the fit are "gap" and "flush".

**"Gap" is the distance between the edges of the panels.**



**"Flush" indicates the degree to which one panel protrudes from another:**

- "Over-flush" indicates that the panel being worked on (highlighted) protrudes out from the adjacent panel.





## Closure Adjustment Terminology

- "Under-flush" indicates that the panel being worked on (highlighted) is recessed from the adjacent panel.
- "Parallel" indicates that the panel being worked on (highlighted) is neither over-flush nor under-flush, but at the exact same level as the adjacent panel.





## Measuring Gap and Flushness

Many alignment issues can be seen or felt without tools. However, measuring gap and flushness with the appropriate tools can help assess alignment issues and track the effect of adjustments. Use the worksheet provided in the "[Adjustment Worksheet](#)" section of this document to record measurements during the alignment process.

Take all gap and flushness measurements with all hinges, latches, strikers, bumpstops, and seals installed.

Before attempting any adjustments, make sure that the alignment of the panel is not being affected by misaligned trim or other obstructions.

### To measure gap:

- 1 Attempt to insert one of the blades of the gap gauge tool into the panel interface.
- 2 If the blade fits into the panel interface but cannot be slid in and out without excessive resistance, try a smaller blade until you find the blade that fits contacts the edges of the panel without excessive resistance.
- 3 If the blade fits into the panel interface but is not snug, try a larger blade until you find the blade that fits snugly without binding.
- 4 Read the gap number listed on the blade.





## Measuring Gap and Flushness

### To measure flushness:

- 1 Place the flush measurement tool across the panel interface and point the stepped notches of the flushness tool toward the panel that appears to be protruding further than the other panel.
- 2 While holding the tool against the panel that is not protruding, slowly move the stepped notches of the tool toward the protruding panel until the edge of the protruding panel butts up against one of the stepped notches.
- 3 Read the measurement that corresponds to the notch of the tool that the protruding panel contacts.



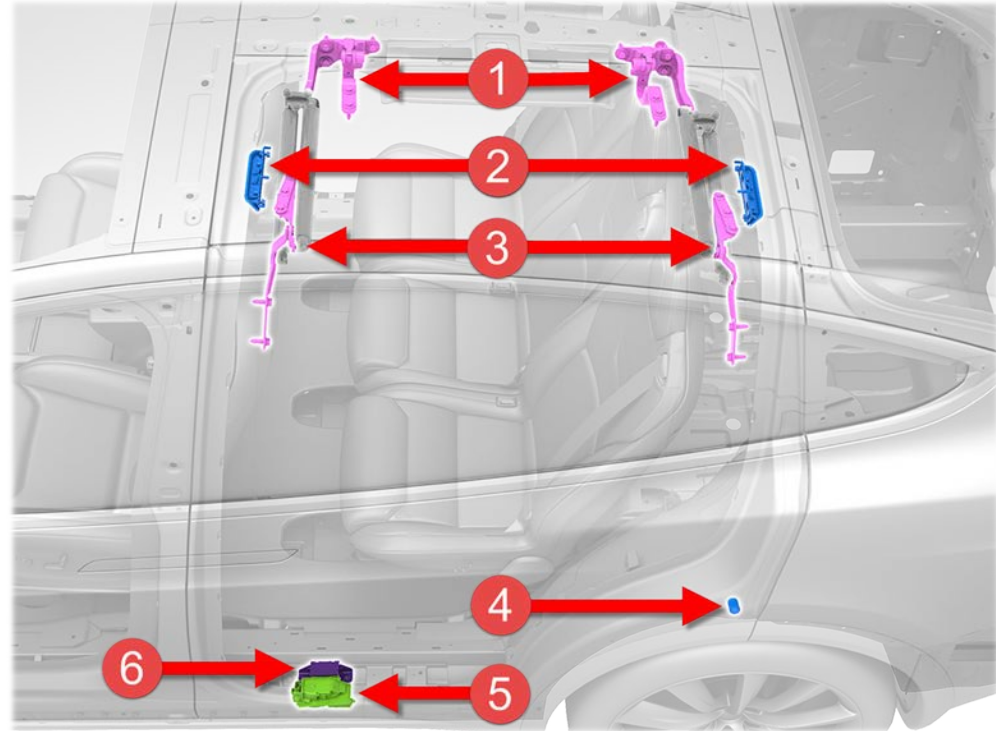




## Adjustment Components

The following components can be used to adjust the rear doors:


- 1 Primary hinges (upper door to spine)
- 2 Upper bump stops
- 3 Secondary hinges (lower door to upper door)
- 4 Lower bump stop
- 5 Latch
- 6 Striker

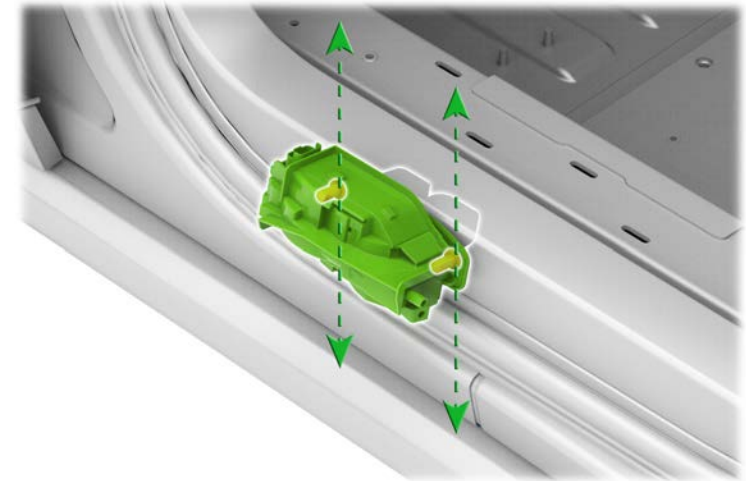





## Adjustment Components

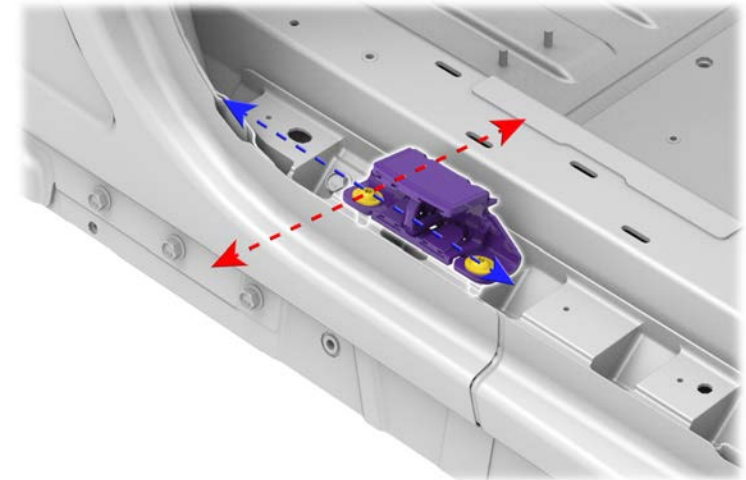
The **latch** can be adjusted to move the rear door along the Z-axis (up or down).

 **NOTE:** After making any adjustments to the latch, torque the bolts to 22 Nm.



The **striker** can be adjusted to move the rear door along the X-axis (forward or back) and the Y-axis (in or out).

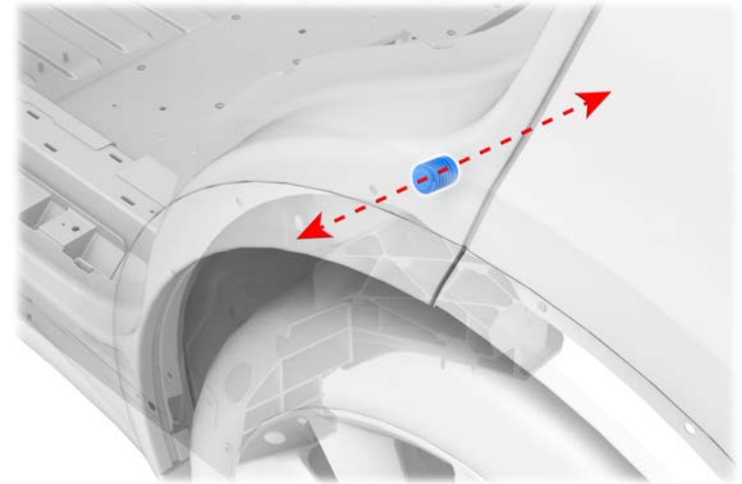
 **NOTE:** After making any adjustments to the striker, torque the bolts to 22 Nm.






## Adjustment Components

The **lower bump stop** can be adjusted to move the rear corner of the lower door where it meets the Quarter Panel along the Y-axis (in or out).



The **upper bump stops** can be adjusted to move the door along the Z-axis (up or down).


 **NOTE:** After making any adjustments to the upper bump stops, torque the bolts to 7 Nm.






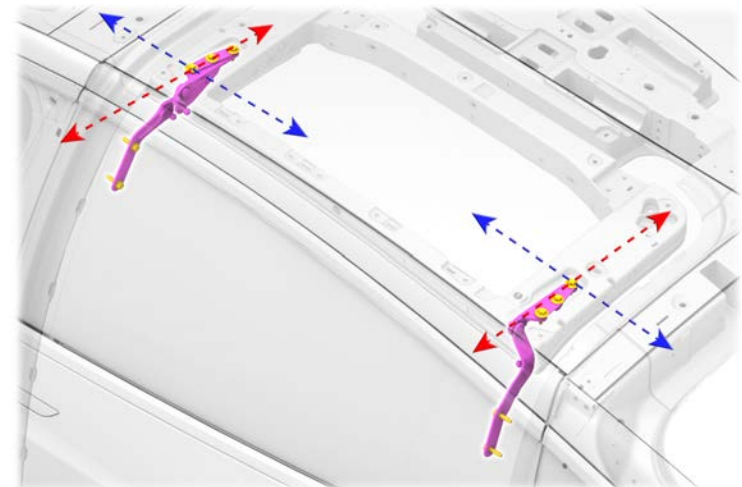
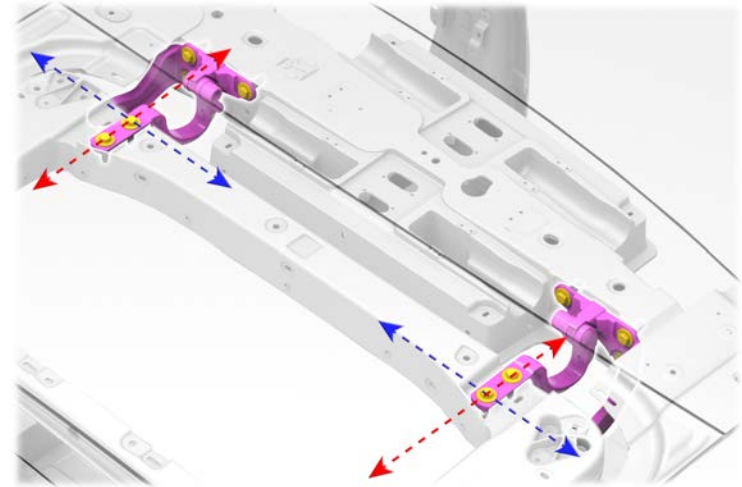
## Adjustment Components

The **primary hinges at the door frame** can be used to make adjustments along the X-axis (forward or back) and the Y-axis (in or out).

 **NOTE:** After making any adjustments to the primary hinges at the door frame, torque the bolts to 24 Nm.

The **secondary hinges at the upper door** can be used to make adjustments along the X-axis (forward or back) and the Y-axis (in or out).


 **NOTE:** After making any adjustments to the secondary hinges at the upper door, torque the bolts to 30 Nm.







## Adjustment Components

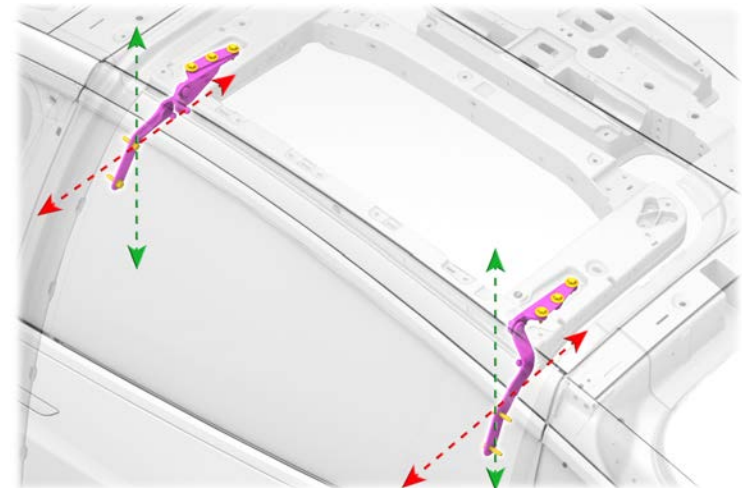
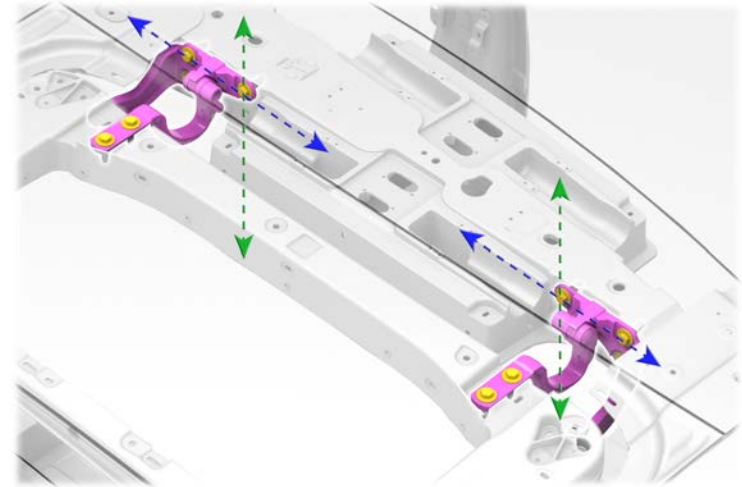
The **primary hinges at the spine** can be used to make adjustments along the Z-axis (up or down) and the X-axis (forward or back)

 **NOTE:** After making any adjustments to the primary hinges at the spine, torque the bolts to 38 Nm.

The **secondary hinges at the lower door** can be used to make adjustments along the Y-axis (in or out) and Z-axis (up or down).

 **NOTE:** Try to adjust the door at the other adjustment points before attempting an adjustment that involves the secondary hinge at the lower door. The factory bolts at this location are shouldered. To make adjustments at this hinge, the factory bolts must be replaced with non-shouldered bolts.

 **NOTE:** After making any adjustments to the secondary hinges at the lower door, torque the bolts to 22 Nm.





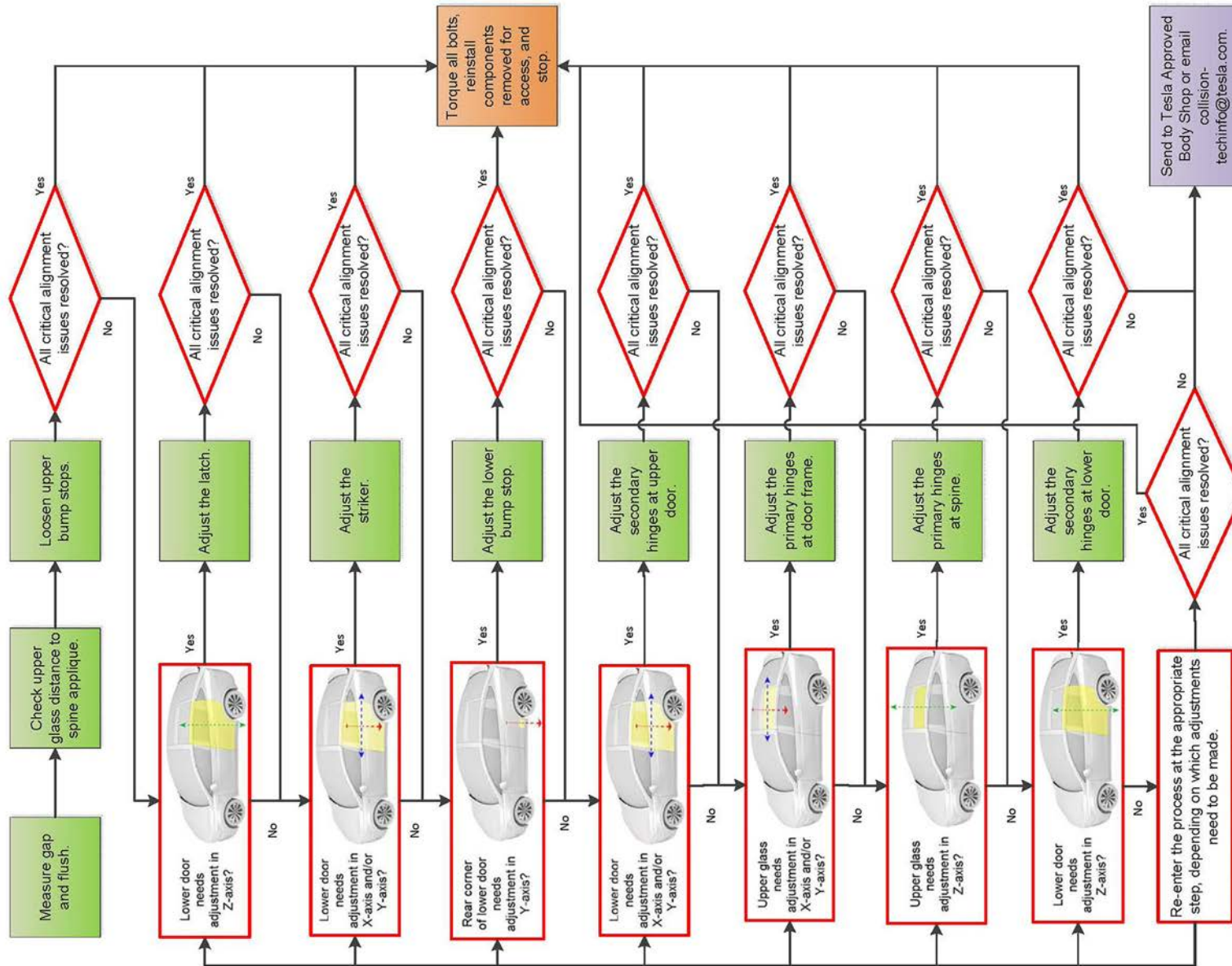
## Adjustment Guidelines

When correcting minor rear door alignment issues:

- **Focus on the metal panels rather than any trim.**
- **Focus primarily on the lower half of the rear door** (in addition to any specific areas called out in the complaint or inspection), as that is the most critical area for appearance and wind noise.
- **Move through the steps in the order given in the [Adjustment Procedure](#), always starting with the least aggressive method first.**
- **Focus first on the gaps and flushness to the fixed panels** (the Quarter Panel and the A-Pillar Upper Outer) and adjust other panels, such as the Front Door, as necessary.
- **When the rear door is open, keep in mind that the axis direction the rear door will move at a given adjustment point will be different from the axis direction of the adjustment once the rear door is closed.** For example, an adjustment that moves the rear door along the Y-axis (in or out) when the door is open, will result in a movement along the Z-axis (up or down) when the door is closed.
- **If the door does not latch properly at any point in the process (when closing the door, 3 beeps are heard and a calibration alert appears on the touchscreen), [calibrate the rear door](#).**
- **Make sure that the rear door is not over-flush to any of the forward panels and that it is parallel flush or slightly over-flush to the rearward panels.** This reduces wind noise issues.
- If the door is still not aligned satisfactorily after performing the appropriate steps in this procedure, email [collision-techinfo@tesla.com](mailto:collision-techinfo@tesla.com).




# Adjustment Procedure Flowchart





## Adjustment Procedure

 **NOTE:** If the door does not latch properly at any point in the process (when closing the door, 3 beeps are heard and a calibration alert appears on the touchscreen), [calibrate the rear door](#).

- 1 Tape off the edges of the panels to avoid scratching the paint during the adjustment process.







## Adjustment Procedure

2

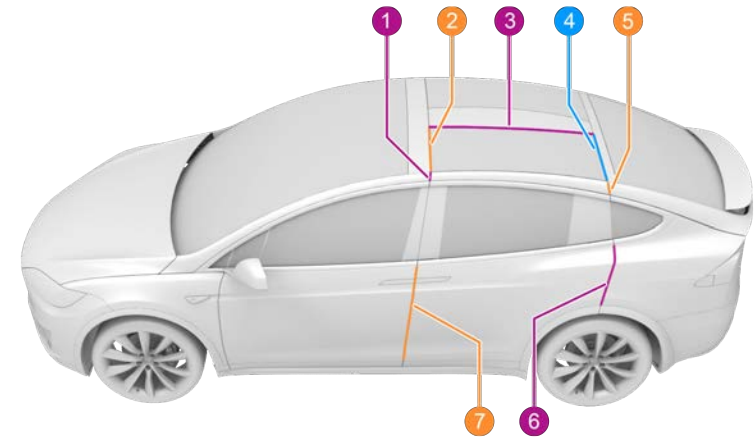
Focusing on the areas of concern from the inspection or complaint, check the gaps and flushness at all of the key rear door panel interfaces to identify where the door is misaligned and determine which adjustment method to try first.



**NOTE:** Move through the steps in the order listed, starting with the least aggressive method that will align the door. After the lower door is aligned, and if there are no additional issues with the upper door, discontinue this procedure and reinstall any components that were removed for access.



**TIP:** Use the worksheet provided in the "[Adjustment Worksheet](#)" section of this document to record measurements during the alignment process.



- |   |                                                  |
|---|--------------------------------------------------|
| 1 | A-Pillar Upper Outer to Rear Door                |
| 2 | B-Pillar Upper Applique to Rear Door Upper Glass |
| 3 | Spine Applique to Rear Door Upper Glass          |
| 4 | Rear Header Applique to Rear Door Upper Glass    |
| 5 | Rear Door to Liftgate                            |
| 6 | Rear Door to Rear Quarter Panel                  |
| 7 | Front Door to Rear Door                          |



## Adjustment Procedure

2

Focusing on the areas of concern from the inspection or complaint, check the gaps and flushness at all of the key rear door panel interfaces to identify where the door is misaligned and determine which adjustment method to try first (continued).





## Adjustment Procedure

- 3 Open the door and note how close the fixed glass of the upper door assembly gets to the spine applique to see if there's a limit to how far the upper door can be adjusted in towards the centerline of the vehicle along the Y-axis (in or out).

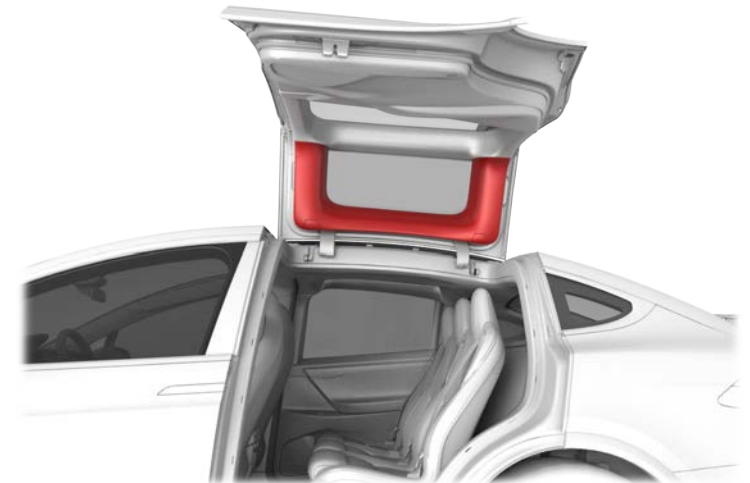


**WARNING:** The fixed glass seal might make slight contact with the applique when the rear door is open. However, if the glass makes contact with the applique, use caution when opening the door to avoid glass shatter.



- 4 Loosen the upper bump stops.

A Remove the [Rear Upper Door Trim Panel](#) (Service Manual procedure 15132302).





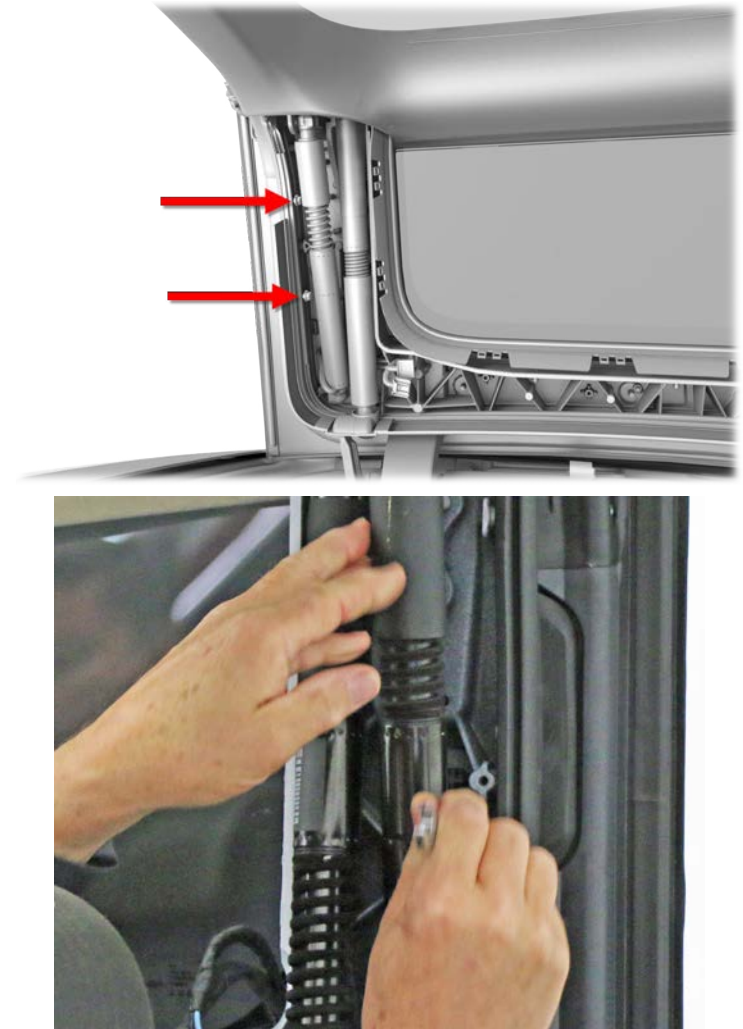
## Adjustment Procedure

4 Loosen the upper bump stops (continued).

B With the rear door open, loosen the bolts (x2) that secure each upper bump stops.



**NOTE:** The bolts for the upper bump stops will be tightened and torqued at the end of the procedure.





## Adjustment Procedure

4 Loosen the upper bump stops (continued).

C Close the rear door and check the alignment along the Z-axis (up or down).

- If the rear door needs additional adjustment, continue this procedure.
- If all of the critical alignment issues have been resolved, tighten the bolts. Reinstall all components that were removed for access and discontinue this procedure.





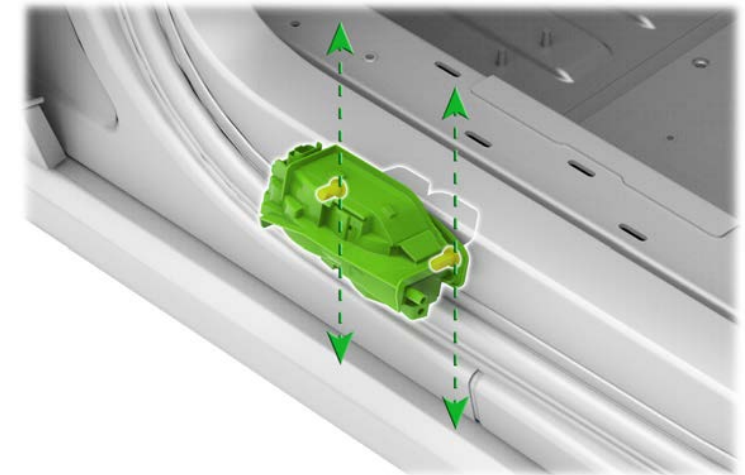
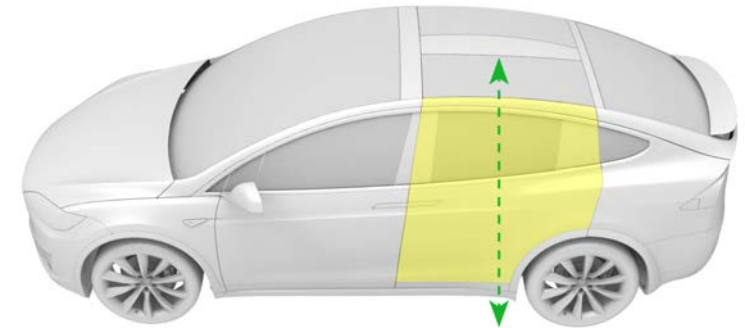
## Adjustment Procedure

5 If necessary, adjust the latch.

A If the lower door still needs to be adjusted along the Z-axis (up or down), do the remaining substeps in this step to adjust the latch.



**NOTE:** If the door does not need to be adjusted along the Z-axis, skip to the [next step](#).





## Adjustment Procedure

5 If necessary, adjust the latch (continued).

B Apply masking tape or painter's tape next to the latch to mark its current position.

C With the rear door open, loosen the bolts that attach the latch to the rear door.



**CAUTION:** Be careful when removing the bolts. The recessed areas of the Torx-head bolts can get rounded off during removal. Replace any bolts with recessed areas that are rounded off.





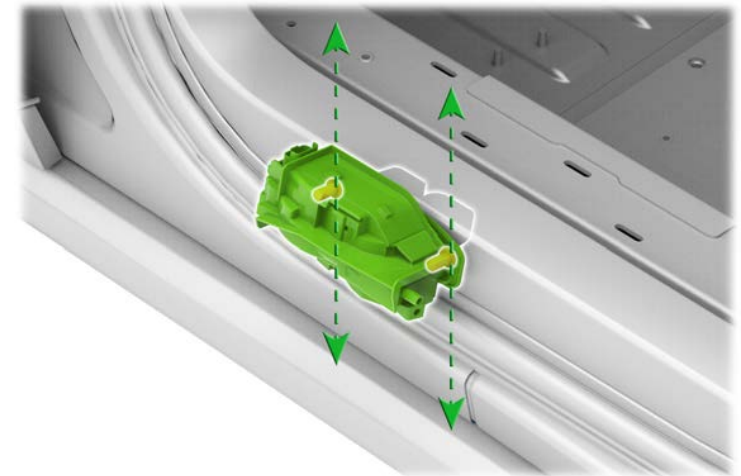
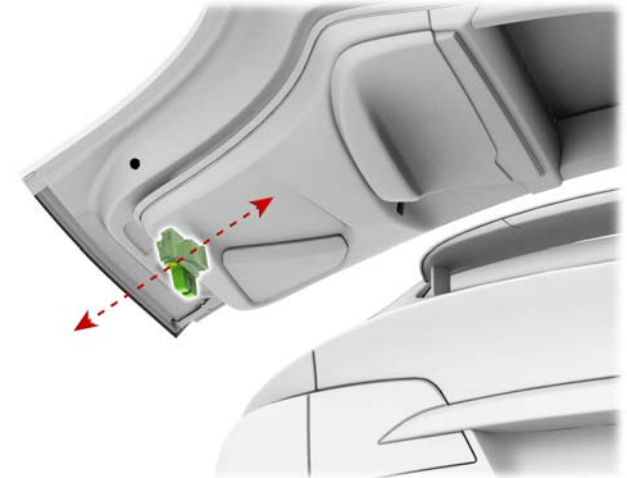
## Adjustment Procedure

5 If necessary, adjust the latch (continued).

D Adjust the position of the latch as needed.



**NOTE:** Moving the latch along the Y-axis (in or out) when the door is open will move the door along the Z-axis (up or down) when the door is closed.







## Adjustment Procedure

- 5** If necessary, adjust the latch (continued).
- E** Tighten the bolts enough to hold the component in place but do not torque them at this point.



- F** Check the alignment.





## Adjustment Procedure

5 If necessary, adjust the latch (continued).

G Repeat substeps C through G as necessary until good alignment along the Z-axis is achieved at the lower door.

H When the latch adjustment is complete, torque the bolts to 22 Nm.



**NOTE:** If all of the critical alignment issues have been resolved, reinstall all components that were removed for access and discontinue this procedure.



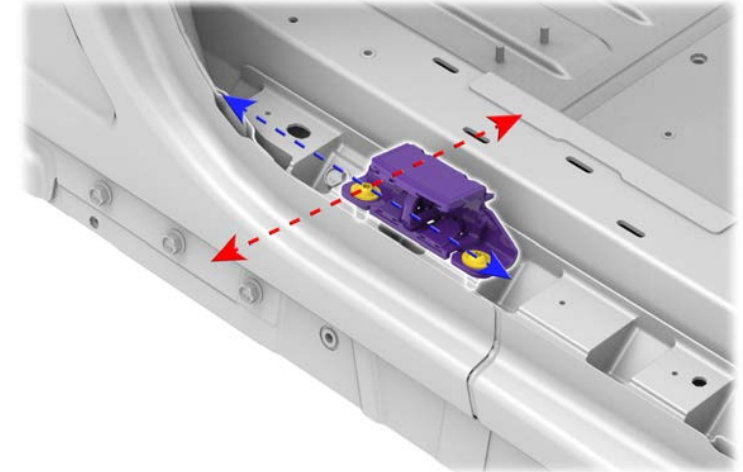
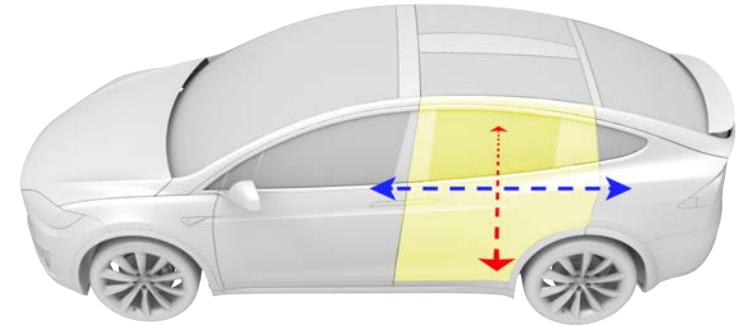
## Adjustment Procedure

6 If necessary, adjust the striker.

A If the lower door still needs to be adjusted along the Y-axis (in or out) and/or the X-axis (forward or back), do the remaining substeps in this step to adjust the striker.



**NOTE:** If the lower part of the door does not need to be adjusted along the Y-axis and/or the X-axis, skip to the [next step](#).





## Adjustment Procedure

6 If necessary, adjust the striker (continued).

B Remove the [Lower Racetrack Trim](#) (Service Manual procedure 15187102).



**NOTE:** Push the C-Pillar Lower Trim and the Rear Door Sill Trim back into position before continuing with the adjustments.





## Adjustment Procedure

- 6 If necessary, adjust the striker (continued).
- B Remove the Lower Racetrack Trim (Service Manual procedure 15187102) (continued).

- C Mark around the original bolt positions with a suitable-colored marker to use as a reference when adjusting the striker.





## Adjustment Procedure

6 If necessary, adjust the striker (continued).

D With the rear door open, loosen the bolts that attach the striker to the vehicle and adjust as needed. Tighten the bolts enough to hold the component in place but do not torque them at this point.

E Check the alignment.





## Adjustment Procedure

6 If necessary, adjust the striker (continued).

F Repeat substeps D through F as necessary until good alignment is achieved at the lower door.

G When the striker adjustment is complete, torque the bolts to 22 Nm.



**NOTE:** If all of the critical alignment issues have been resolved, reinstall all components that were removed for access and discontinue this procedure.



## Adjustment Procedure

- 6 If necessary, adjust the striker (continued).
- G When the striker adjustment is complete, torque the bolts to 22 Nm (continued).





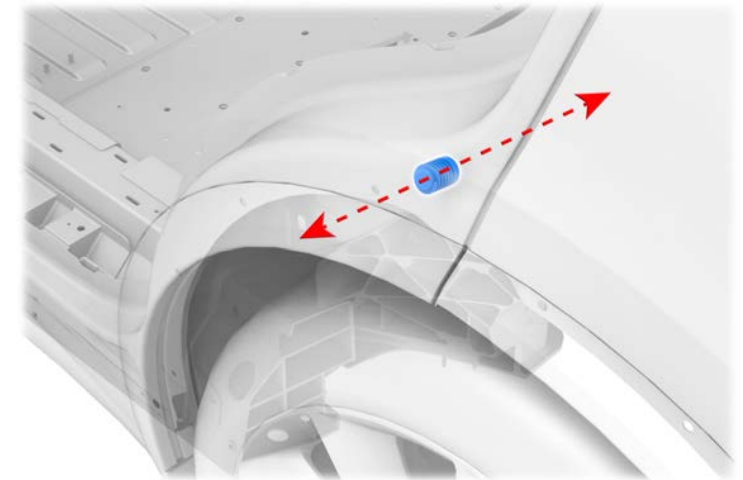
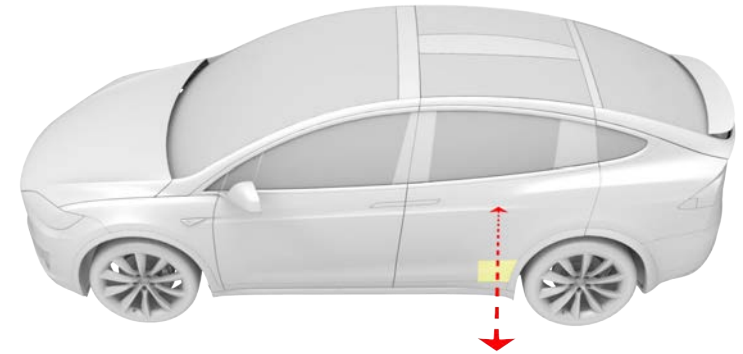
## Adjustment Procedure

7 If necessary, adjust the lower bump stop.

A If the rear corner of the lower door is over-flush or under-flush to the Quarter Panel and there are no other significant alignment issues, do the remaining substeps in this step to adjust the lower bump stop to move the rear corner along the Y-axis (in or out).



**NOTE:** If the rear corner of the lower door is not over-flush or under-flush to the Quarter Panel, skip to the [next step](#).





## Adjustment Procedure

7 If necessary, adjust the lower bump stop (continued).

B Open the rear door and adjust the lower bump stop by screwing it in or out.

C Check the alignment.





## Adjustment Procedure

7 If necessary, adjust the lower bump stop (continued).

D Repeat substeps B through D as necessary until good alignment is achieved at the rear corner of the lower door.



**NOTE:** If all of the critical alignment issues have been resolved, reinstall all components that were removed for access and discontinue this procedure.



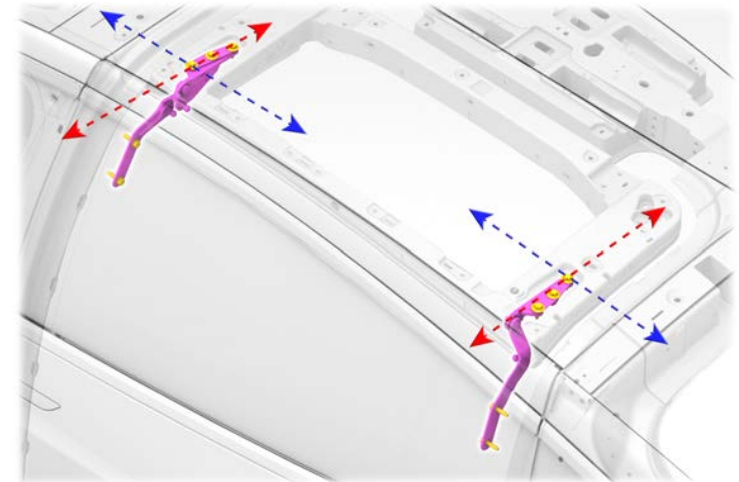
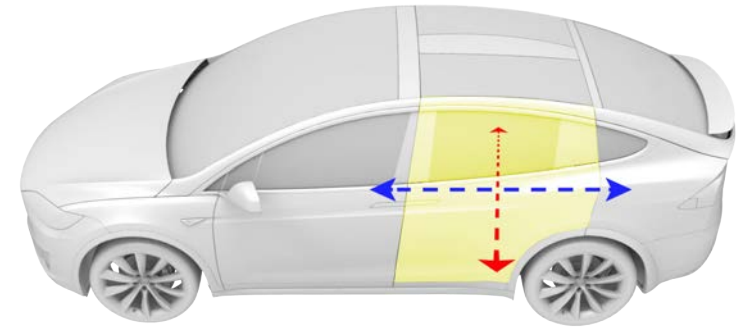
## Adjustment Procedure

8 If necessary, adjust the secondary hinges at the upper door.

A If the lower door gaps and flushness with the A-Pillar Upper Outer, the Liftgate, and the Quarter Panel need adjustment (the lower door needs to move along the X-axis and/or the Y-axis), do the remaining substeps in this step to adjust the secondary hinges at the upper door.



**NOTE:** If the lower door gaps and flushness with the A-Pillar Upper Outer, the Liftgate, and the Quarter Panel do not need adjustment, skip to the [next step](#).





## Adjustment Procedure

- 8 If necessary, adjust the secondary hinges at the upper door (continued).
- B Remove the [Rear Door Upper Glass](#) (Service Manual procedure 11500502) to access the secondary hinges where they attach to the upper door frame.
- C Mark around the original bolt positions with a suitable-colored marker to use as a reference when adjusting the upper door hinges at the door frame.





## Adjustment Procedure

8 If necessary, adjust the secondary hinges at the upper door (continued).

D

Remove the **primary struts** (Service Manual procedure 11331002).



**CAUTION:** Make sure that the primary struts are near full extension before removing them. Disconnecting the struts when they are compressed might damage the struts.



**CAUTION:** Make sure to rotate the lower end of the strut up to avoid damaging the harness when releasing the upper end of the strut.



**NOTE:** Apply tape to the Racetrack trim near the lower end of the primary strut to protect the trim from damage during removal.



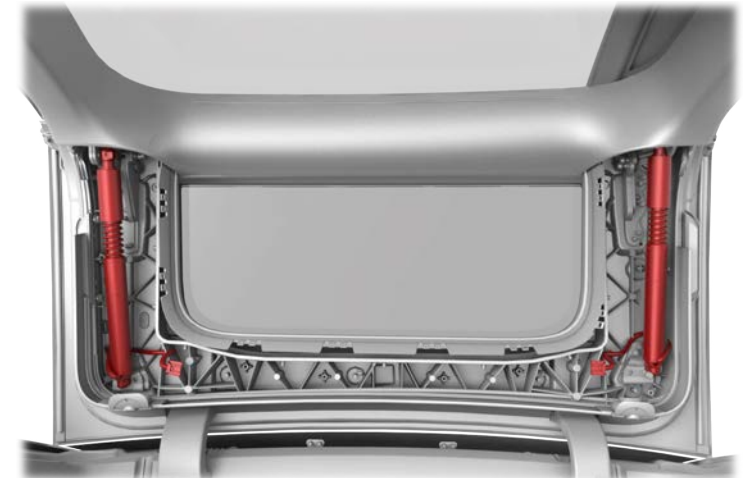
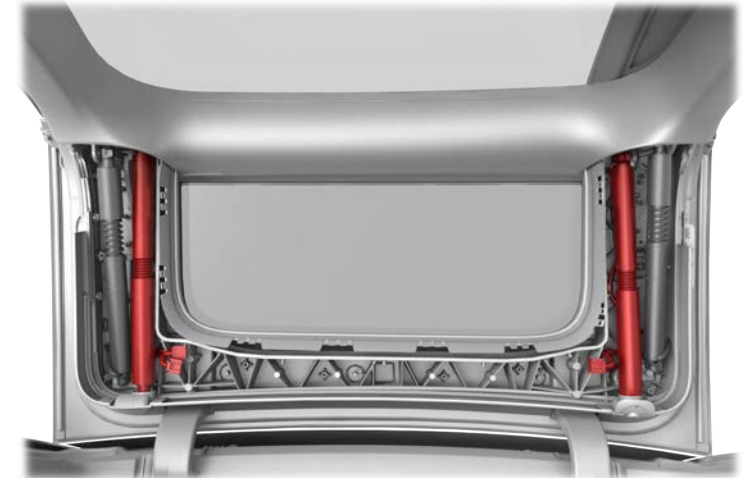
**TIP:** Label each strut with its location to make installation easier.

E

Remove the **secondary struts**.



**WARNING:** Do not attempt to open the rear door with all of the struts removed. The double-hinged nature of the rear door assembly makes the door extremely difficult to handle with the struts removed and could result in vehicle damage and/or personal injury.





## Adjustment Procedure

8 If necessary, adjust the secondary hinges at the upper door (continued).

F Loosen the bolts at the secondary hinge on the upper door frame, as well as the Torx-head screws that attach the striker and the latch.

👉 **TIP:** Loosen both bolts on the side where the adjustment will be made and just one of the bolts on the other side (the pivot point).



G Use an assistant to move the lower door until the gaps to the A-Pillar Upper Outer and the Quarter Panel are roughly even.

📄 **NOTE:** The rear door should be slightly underflush to the forward panels and parallel flush to the rearward panels.

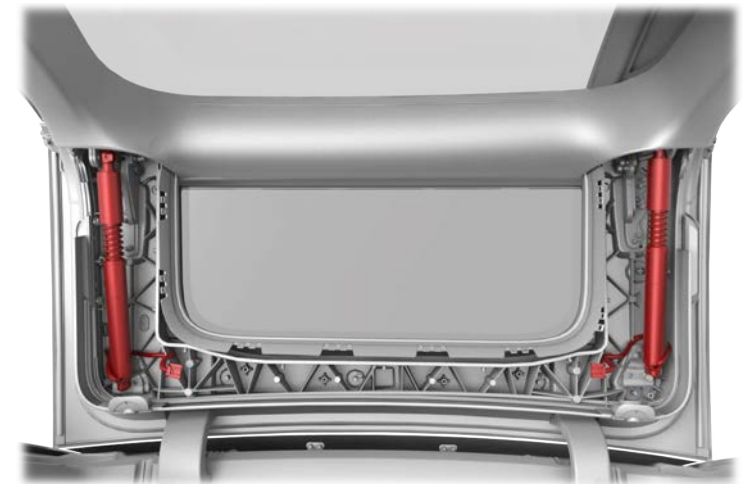


## Adjustment Procedure

8 If necessary, adjust the secondary hinges at the upper door (continued).

H Tighten the bolts at the secondary hinge enough to hold the component in place and the Torx-head screws for the striker and the latch.

I Reinstall the secondary struts and reconnect their harnesses.





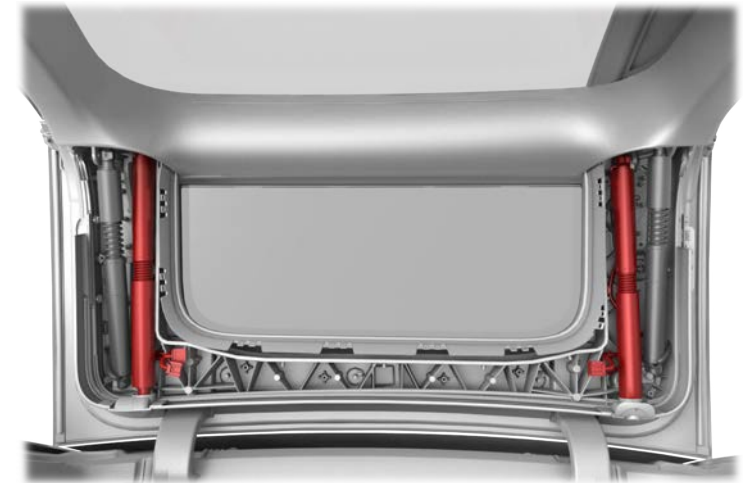


## Adjustment Procedure

8 If necessary, adjust the secondary hinges at the upper door (continued).

J Manually open the rear door.

K Reinstall the primary struts and reconnect their harnesses.





## Adjustment Procedure

8 If necessary, adjust the secondary hinges at the upper door (continued).

L

Check the gaps and flushness.



**NOTE:** If the lower part of the lower door still needs adjustment along the Z-axis (up or down), [adjust the latch](#).



**NOTE:** If the lower part of the lower door still needs adjustment along the X-axis (forward or back) or the Y-axis (in or out), [adjust the striker](#).

M

Repeat substeps D through M as necessary until good alignment is achieved at the lower door to the A-Pillar Upper Outer, the Liftgate, and the Quarter Panel.





## Adjustment Procedure

8 If necessary, adjust the secondary hinges at the upper door (continued).

N When the adjustment is complete, torque the secondary hinge bolts to 30 Nm and torque any other bolts that were loosened during the adjustment.



**NOTE:** If all of the critical alignment issues have been resolved, reinstall all components that were removed for access and discontinue this procedure.



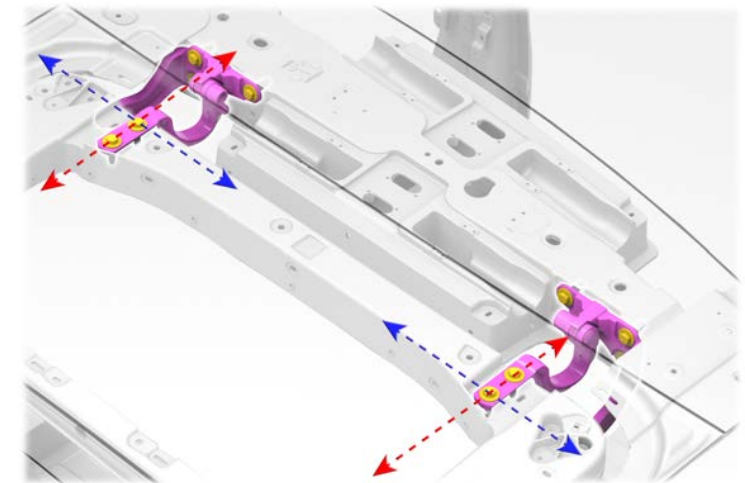
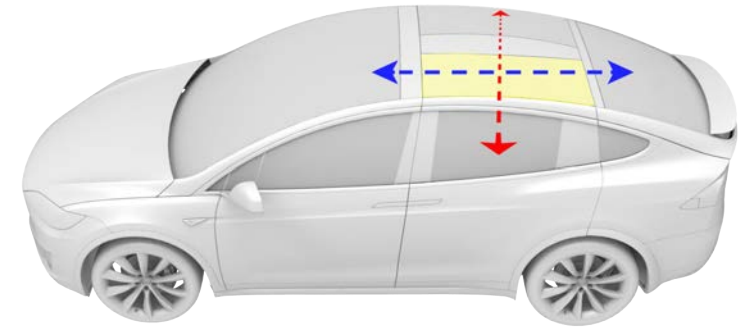
## Adjustment Procedure

9 If necessary, adjust the primary hinges at the door frame.

A If the gaps from the fixed glass of the upper door to the appliques need adjustment (the entire door needs to be moved along the X-axis and/or the Y-axis), do the remaining substeps in this step to adjust the primary hinges at the door frame.



**NOTE:** If the gaps from the fixed glass of the upper door to the appliques do not need to be adjusted, skip to the [next step](#).





## Adjustment Procedure

9 If necessary, adjust the primary hinges at the door frame (continued).

B If it has not already been removed in an [earlier step](#), remove the [Rear Door Upper Glass](#) (Service Manual procedure 11500502) to get access to the primary hinges where they attach to the door frame.





## Adjustment Procedure

9 If necessary, adjust the primary hinges at the door frame (continued).

C Remove the **primary struts** (Service Manual procedure 11331002).



**CAUTION:** Make sure that the primary struts are near full extension before removing them. Disconnecting the struts when they are compressed might damage the struts.



**CAUTION:** Make sure to rotate the lower end of the strut up to avoid damaging the harness when releasing the upper end of the strut.



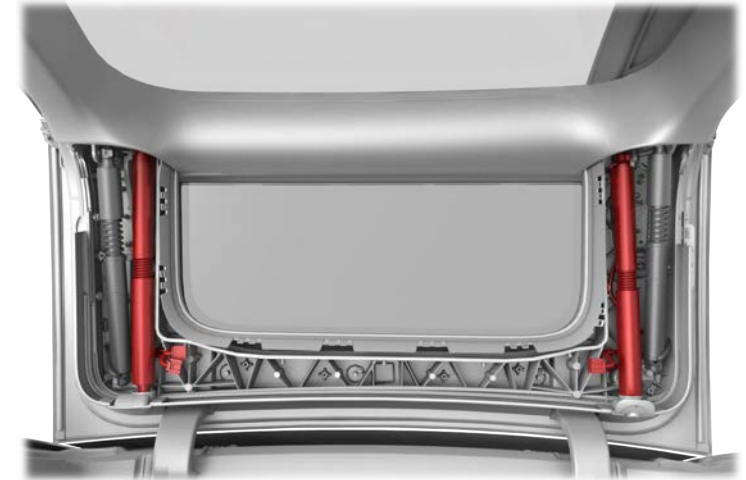
**NOTE:** Apply tape to the Racetrack trim near the lower end of the primary strut to protect the trim from damage during removal.



**TIP:** Label each strut with its location to make installation easier.



**TIP:** Remove the **lower half of the Rear Door** (Service Manual procedure 11302302) to reduce the weight of the door and make it easier to adjust.





## Adjustment Procedure

9 If necessary, adjust the primary hinges at the door frame (continued).

D Mark around the original bolt positions with a suitable-colored marker to use as a reference when adjusting the primary hinges at the door frame.

E With the upper door in the open position, loosen the bolts that attach the hinges to the door frame.



**TIP:** Loosen both bolts on the side where the adjustment will be made and just one of the bolts on the other side (the pivot point).





## Adjustment Procedure

9 If necessary, adjust the primary hinges at the door frame (continued).

F Adjust the upper door to achieve proper gaps for the glass to the appliques and Tighten the bolts enough to hold the component in place.



**WARNING:** Make sure that the upper glass does not bind on the spine applique. If the upper glass binds, glass shatter might occur.

G Reinstall the upper glass.







## Adjustment Procedure

- 9 If necessary, adjust the primary hinges at the door frame (continued).
- H Lower the upper door to the closed position to check the alignment.
- I Repeat substeps E through H as necessary until good alignment is achieved for the gaps from the fixed glass of the upper door to the appliques.



## Adjustment Procedure

9 If necessary, adjust the primary hinges at the door frame (continued).

J When the adjustment is complete, torque the primary hinge bolts to 24 Nm and torque any other bolts that were loosened during the adjustment.



**NOTE:** If all of the critical alignment issues have been resolved, reinstall all components that were removed for access and discontinue this procedure.



## Adjustment Procedure

10 If necessary, adjust the primary hinges at the spine.

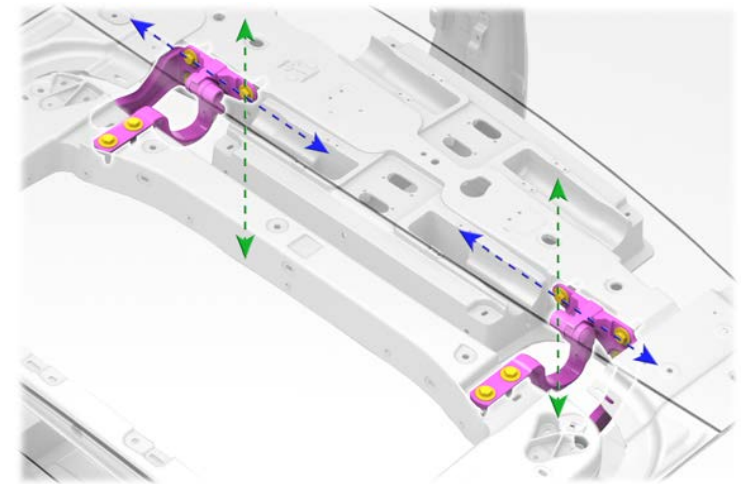
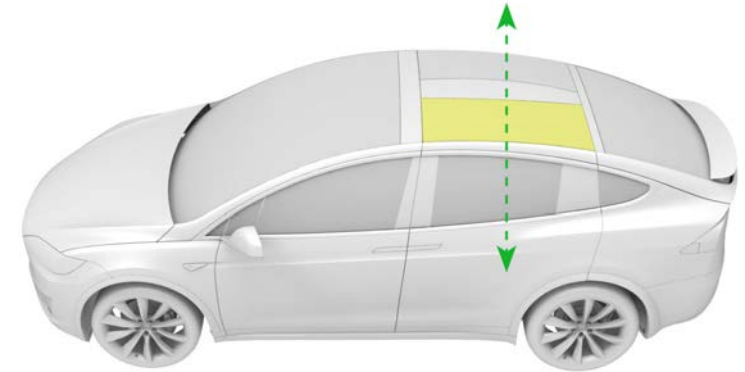
A If the fixed glass of the upper door is over-flush or under-flush to the spine applique, do the remaining substeps in this step to adjust the primary hinges at the spine to move the upper door along the Z-axis (up or down).



**NOTE:** If the fixed glass of the upper door is not over-flush or under-flush to the spine applique, skip to the [next step](#).



**TIP:** If the entire lower door is sitting too high in the latched position relative to the vehicle and the upper bump stops are not keeping the door from sitting lower, [raise the latch](#) at the door to make the door close in a lower position.





## Adjustment Procedure

10 If necessary, adjust the primary hinges at the spine (continued).

B Remove the [Headliner](#) (Service Manual procedure 15201002) to get access to the upper door hinges where they attach to the spine.



C If an assistant is not available to help with this procedure, remove the [lower half of the Rear Door](#) (Service Manual procedure 11302302) to reduce the weight.





## Adjustment Procedure

10 If necessary, adjust the primary hinges at the spine (continued).

D Mark around the original bolt positions with a suitable-colored marker to use as a reference when adjusting the hinges at the spine.

E With the upper door in the open position, loosen the bolts that attach the hinges to the spine.



**TIP:** Loosen both bolts on the side where the adjustment will be made and just one of the bolts on the other side (the pivot point).





## Adjustment Procedure

10 If necessary, adjust the primary hinges at the spine (continued).

F

Adjust the upper door to achieve proper flushness for the glass to the spine applique and Tighten the bolts enough to hold the component in place.



**NOTE:** Avoid moving the door along the X-axis (forward or back).

G

Close the upper door and check the flushness.



**NOTE:** If the glass seal is not properly flush to the front and rear appliques further out from the spine applique, pull the upper door into the correct position and torque the bolts for the upper bump stops (7 Nm).



## Adjustment Procedure

10 If necessary, adjust the primary hinges at the spine (continued).

H Repeat substeps E through G as necessary until a proper flush fit is achieved.

I When the adjustment is complete, torque the primary hinge bolts (torque 38 Nm) and any other bolts that were loosened in the course of the adjustment.



**NOTE:** If this adjustment changed the alignment in other areas, repeat the appropriate steps to resolve the issue.



**NOTE:** If all of the critical alignment issues have been resolved, reinstall all components that were removed for access and discontinue this procedure.





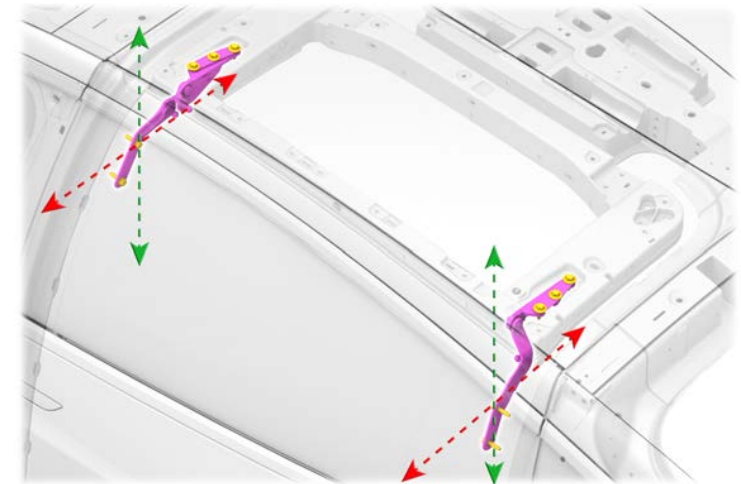
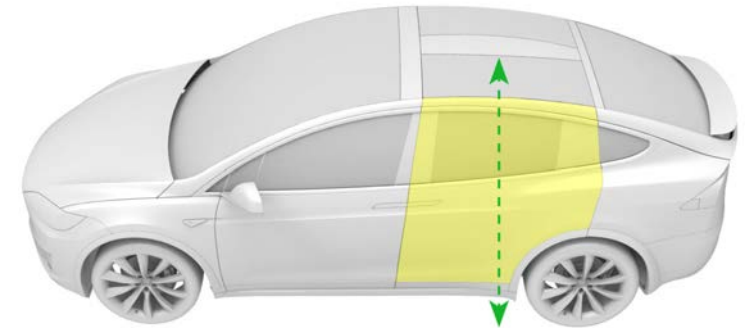
## Adjustment Procedure

11 If necessary, adjust the secondary hinges at the lower door.

A If the fixed glass of the upper door is properly flush to the appliques but the lower door still needs to be adjusted along the Z-axis plane (up or down), do the remaining substeps in this step to adjust the secondary hinges at the lower door.



**NOTE:** If the lower door does not need to be adjusted along the Z-axis, reinstall any components that were removed for access and discontinue this procedure.







## Adjustment Procedure

11 If necessary, adjust the secondary hinges at the lower door (continued).

**B** One at a time, replace the shouldered bolts at the lower door side of each of the secondary hinges with non-shouldered bolts (Tesla part number 1008571-00-C) to allow for adjustment.



**TIP:** Only the bolts that need to be loosened to achieve alignment need to be changed.





## Adjustment Procedure

11 If necessary, adjust the secondary hinges at the lower door (continued).

C

Remove the **primary struts** (Service Manual procedure 11331002).



**CAUTION:** Make sure that the primary struts are near full extension before removing them. Disconnecting the struts when they are compressed might damage the struts.



**CAUTION:** Make sure to rotate the lower end of the strut up to avoid damaging the harness when releasing the upper end of the strut.



**NOTE:** Apply tape to the Racetrack trim near the lower end of the primary strut to protect the trim from damage during removal.



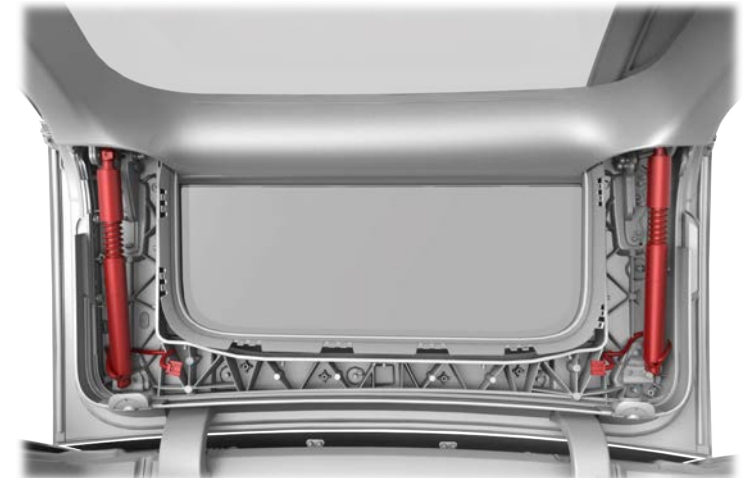
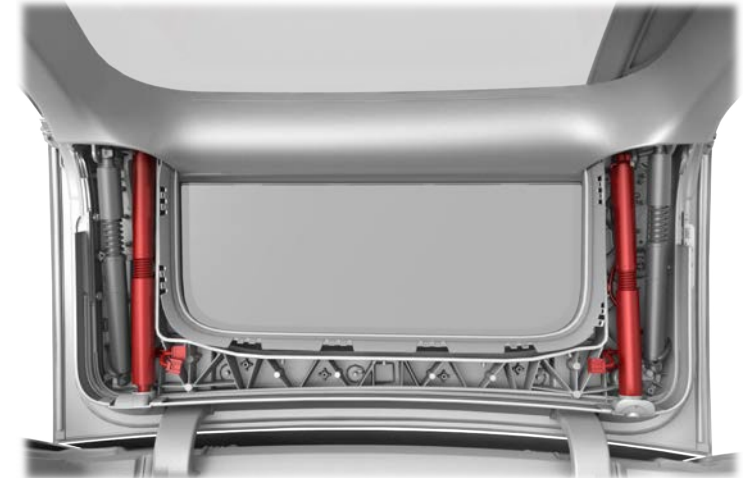
**TIP:** Label each strut with its location to make installation easier.

D

Remove the **secondary struts**.



**WARNING:** Do not attempt to open the rear door with all of the struts removed. The double-hinged nature of the rear door assembly makes the door extremely difficult to handle with the struts removed and could result in vehicle damage and/or personal injury.





## Adjustment Procedure

11 If necessary, adjust the secondary hinges at the lower door (continued).

**E** With the non-shouldered bolts at the lower door side of the secondary hinges loose, have an assistant adjust the lower door along the Z-axis (up or down) from outside the vehicle to achieve the proper fit.



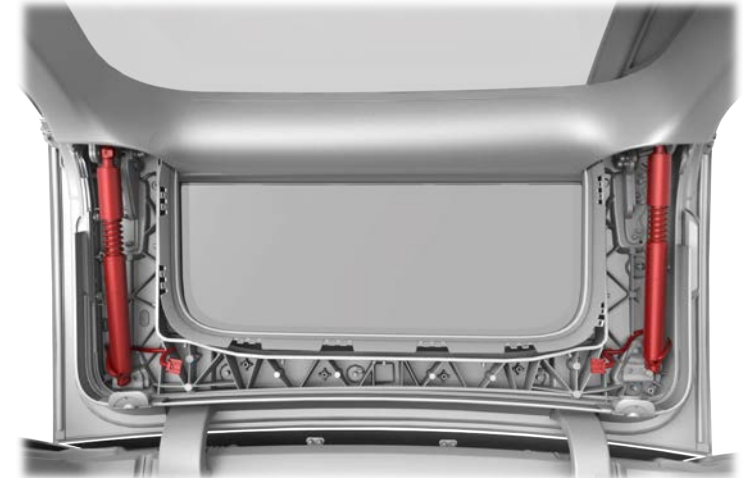
**TIP:** Loosen both bolts on the side where the adjustment will be made and just one of the bolts on the other side (the pivot point).

**F** Tighten the bolts enough to hold the component in place, but do not torque them at this time.



## Adjustment Procedure

- 11 If necessary, adjust the secondary hinges at the lower door (continued).
- G Reinstall the secondary struts and reconnect their harnesses.



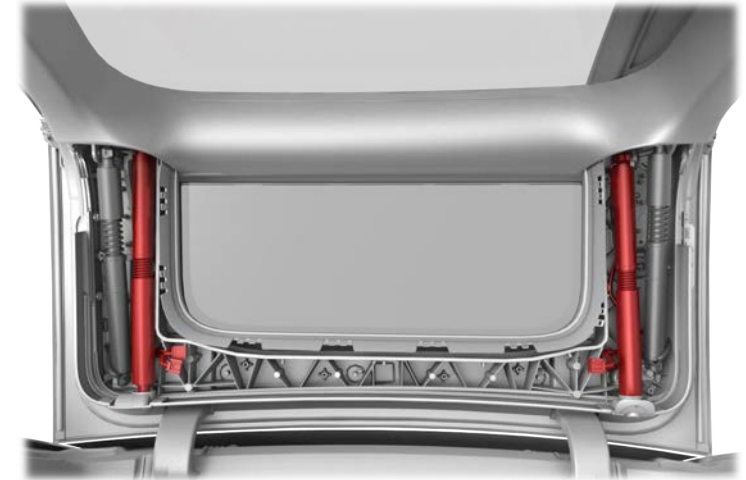
- H Manually open the rear door.





## Adjustment Procedure

- 11 If necessary, adjust the secondary hinges at the lower door (continued).
- I Reinstall the primary struts and reconnect their harnesses.



- J Check the gaps and flushness.



**TIP:** If all gaps and flushness are good except the lower painted corner of the lower door is underflush to the Quarter Panel, [adjust the lower bumpstop](#) located on the lower Falcon door until the panel sits flush.



**TIP:** If the entire lower door is sitting too high in the latched position relative to the vehicle and the upper door frame bumpstops are not keeping the door from sitting lower, [raise the latch](#) at the door to make the door close in a lower position (down along the Z-axis).





## Adjustment Procedure

- 11 If necessary, adjust the secondary hinges at the lower door (continued).
- K Repeat substeps C through K as necessary until good alignment is achieved at the lower door.

L When the adjustment is complete, torque the secondary hinge bolts to 22 Nm and torque any other bolts that were loosened in the course of the adjustment. Reinstall any components that were removed for access.



**NOTE:** If the door is still not aligned satisfactorily, email [collision-techinfo@tesla.com](mailto:collision-techinfo@tesla.com).



# Adjustment Worksheet

Use this worksheet to record "before adjustment" and "after adjustment" measurements during the adjustment procedure (refer to the [diagram shown](#) in the "Adjustment Procedure" section of this document for more information).

Panel Interface	Original Gap	Original Flush	Component Adjusted	Amount of 1st Adjustment	New Gap	New Flush	Amount of 2nd Adjustment	New Gap	New Flush
Rear Door Upper Glass to Spine: Front									
Rear Door Upper Glass to Spine: Middle									
Rear Door Upper Glass to Spine: Rear									
Rear Header Applique to Rear Door Upper Glass									
Rear Header Applique to Rear Door Upper Glass									
A-Pillar Upper Outer to Rear Door									
Rear Door to Liftgate									
Lower Door to B-Pillar Applique									
Rear Door to Front Door: Top									
Rear Door to Front Door: Middle									
Rear Door to Front Door: Bottom									
Rear Door to Rear Quarter Panel: Top									
Rear Door to Rear Quarter Panel: Middle									



## Adjustment Worksheet

Panel Interface	Original Gap	Original Flush	Component Adjusted	Amount of 1st Adjustment	New Gap	New Flush	Amount of 2nd Adjustment	New Gap	New Flush
Rear Door to Rear Quarter Panel: Bottom									





## Calibrating a Rear Door

The calibration procedure drives the door through the safest possible combination of motions to achieve latch entry while not contacting the body. Any time the door does not latch properly (when closing the door, 3 beeps are heard and a calibration alert appears on the touchscreen), perform this procedure to calibrate the rear door.



**NOTE:** Calibration resets the "closed" position of the door. Calibration does not affect the alignment of the door.

1

Hold the door switch at the B-pillar in the "open" position until the rear door stops moving upward.





## Calibrating a Rear Door

2

Hold the door switch at the B-pillar in the "close" position until the door fully closes and latches.



**WARNING:** Stay clear of the rear door when it is closing and perform calibration in an area free of obstacles. Calibration mode overrides the safety sensors and the door will not stop for any obstacles in its path.





## Removing the Secondary Struts

Perform this procedure when the adjustment being performed requires that the secondary struts be removed in addition to the primary struts.



**NOTE:** This version of the procedure differs from the procedure in the Model X Service Manual. Only use this version when adjusting the rear doors.

1

Manually close the rear door.





## Removing the Secondary Struts

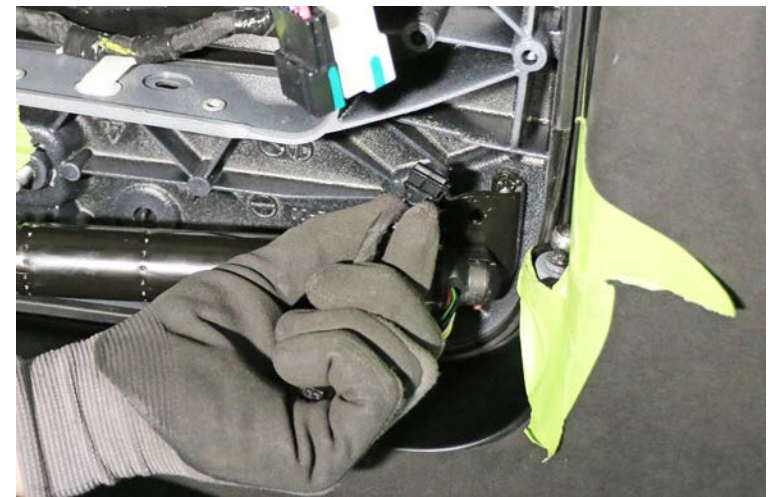
2

Reach through the open window and disconnect the 2 secondary strut harnesses.



3

Release the clips that attach each harness to the door.





## Removing the Secondary Struts

4

Release one end of one of the secondary struts from the door.



5

Release the other end of the secondary strut from the body.



**TIP:** Label the strut with its location to make installation easier.





## Removing the Secondary Struts

6

Repeat the previous 2 steps for the other secondary strut.



**WARNING:** Do not attempt to open the rear door with all of the struts removed. The double-hinged nature of the rear door assembly makes the door extremely difficult to handle with the struts removed and could result in vehicle damage and/or personal injury.