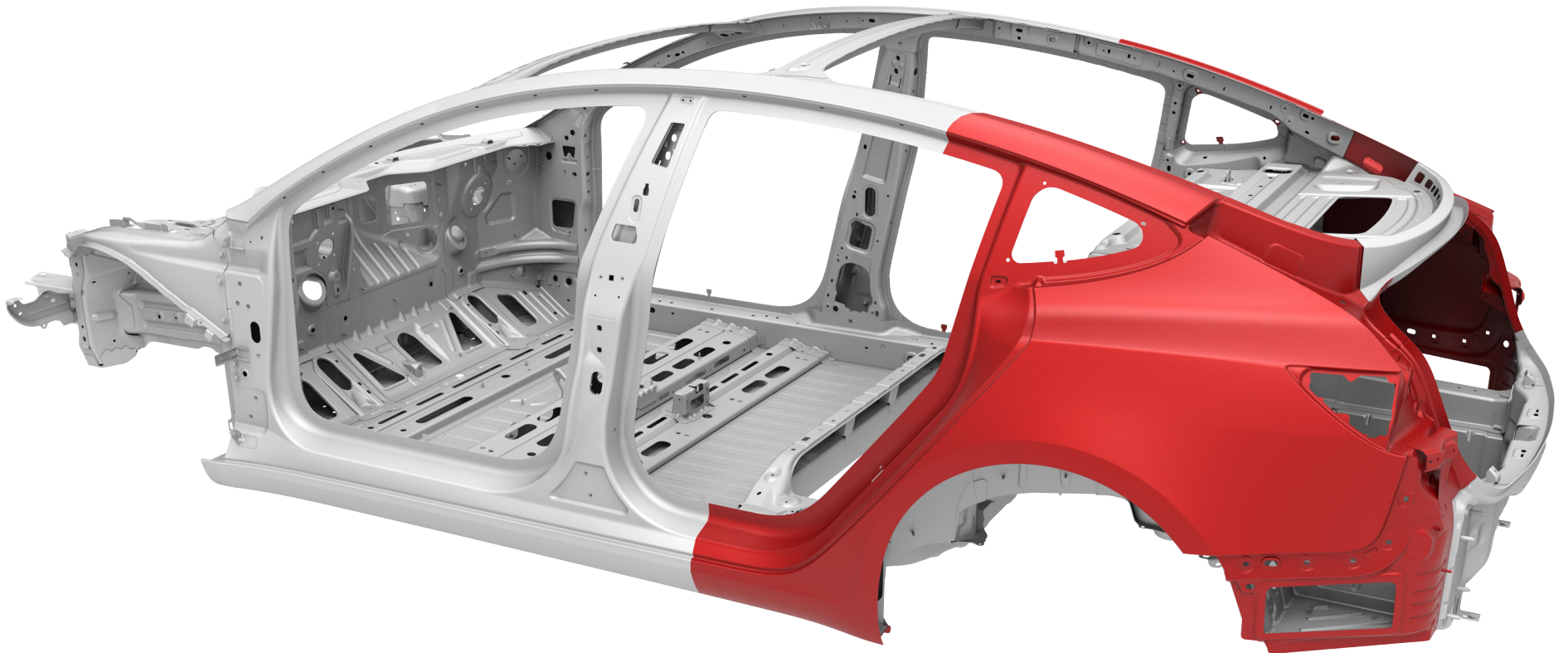





## Quarter Outer Complete






## Parts List

Quantity	Part Number	Description	Image / Notes
1	1073677-S0-A (LH) 1073678-S0-A (RH)	Rear Quarter Outer	
18 rivets needed; order 20 rivets.	1028719-00-A	● Structural Rivet, 4.8 mm	All rivets come in packages of 10; order all rivets in multiples of 10.
5 rivets needed; order 10 rivets.	1069308-00-A	● Countersunk Rivet, 4.8 mm Short	All rivets come in packages of 10; order all rivets in multiples of 10.
1 rivet needed; order 10 rivets.	1069331-00-A	★ Flow Form Rivet S38	All rivets come in packages of 10; order all rivets in multiples of 10.  📄 <b>NOTE:</b> Only required if the <a href="#">Cantrail Extension Inner</a> is being replaced.
6 rivets needed; order 10 rivets.	1069328-00-A	★ Flow Form Rivet S08	All rivets come in packages of 10; order all rivets in multiples of 10.
17 rivets needed; order 20 rivets.	1069329-00-A	★ Flow Form Rivet S18	All rivets come in packages of 10; order all rivets in multiples of 10.
1	—	Urethane Sealant	<b>⚠ WARNING:</b> Use only Tesla-approved urethane sealant; refer to <a href="#">BR-15-92-008</a> , "Approved Structural Adhesive and Urethane Sealants" for a list of current approved urethane sealants.  Refer to <a href="#">BR-17-92-002</a> , "Obtaining Adhesives, Coolant, and Other Chemicals" for information on how to obtain approved urethane sealant.



## Parts List

Quantity	Part Number	Description	Image / Notes
1	—	Structural Adhesive	 <b>WARNING:</b> Use only Tesla-approved structural adhesive; refer to <a href="#">BR-15-92-008</a> , "Approved Structural Adhesive and Urethane Sealants" for a list of current approved structural adhesives.  Refer to <a href="#">BR-17-92-002</a> , "Obtaining Adhesives, Coolant, and Other Chemicals" for information on how to obtain approved structural adhesive.

These part numbers were current at the time of publication. Use the revisions listed or later, unless otherwise specified in the [Parts Manual](#).



# Repair Information

Repair Information	Warnings and Cautions	Special Tools
<p>This procedure is for the left-hand component; the procedure is identical for the right-hand component.</p> <p>Installation fasteners that replace factory spot welds in steel-to-steel panel interfaces are specified in this procedure where an approved squeeze-type resistance spot welder with the base welding accessories might not be able to reach. If your approved welder can access a factory spot weld location where this procedure specifies a fastener, an installation spot weld is recommended in place of the specified fastener.</p>	<p><b>⚠ WARNING:</b> Wear the appropriate personal protective equipment (PPE) when performing this procedure.</p> <p><b>⚠ CAUTION:</b> This procedure involves both steel and aluminum components. Use the appropriate tools at each step to avoid cross-contamination. Refer to <a href="#">BR-17-10-005</a>, "Model 3 Body Structure Materials and Allowed Operations", for more information.</p>	<p>The special tools listed below are required to perform this procedure:</p> <ul style="list-style-type: none"> <li>• Microstop Countersink kit</li> <li>• Flow form rivet installation tool</li> </ul> <p>Use only approved fastener installation tools for structural repairs. Refer to <a href="#">BR-16-92-001</a>, "Approved Fasteners and Fastener Installation Tools for Structural Repairs" for a list of current approved fastener installation tools.</p> <ul style="list-style-type: none"> <li>• GMA welder</li> </ul> <p>Use only an approved GMA welder. Refer to <a href="#">BR-16-92-007</a>, "Approved Welders" for a list of current approved GMA welders.</p> <ul style="list-style-type: none"> <li>• Resistance Spot Welder</li> </ul> <p>Use only an approved resistance spot welder. Refer to <a href="#">BR-16-92-007</a>, "Approved Welders" for a list of current approved resistance spot welders.</p>



## Prerequisites

1

Disconnect 12V and high voltage power (refer to the appropriate section in [BR-17-17-004](#), "Disconnecting 12V and High Voltage Power on Model 3").



**WARNING:** Before disconnecting the 12V power supply, make sure that all windows are at least slightly open. Attempting to open a door with a fully-closed window when the 12V power supply is disconnected could result in door glass shatter.



**NOTE:** Before disconnecting the 12V power supply, make sure that the driver's door window is fully open. Failure to lower the driver's door window before disconnecting the 12V power supply could result in vehicle lockout.

2

**Left-hand component only:** Before working on the vehicle, make sure that high voltage current is not present (refer to the appropriate section in [BR-17-17-004](#), "Disconnecting 12V and High Voltage Power on Model 3").



**WARNING:** Only technicians who have been trained in High Voltage Awareness are permitted to perform the Vehicle Electrical Isolation procedure. Proper personal protective equipment (PPE) and insulating high voltage gloves with a minimum rating of class 0 (1000V) must be worn any time a high voltage cable is handled. Refer to [TN-15-92-003](#), "High Voltage Awareness Care Points" for additional safety information.



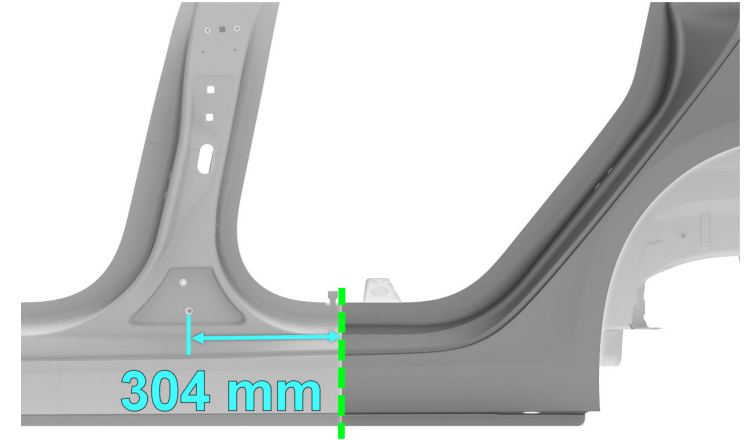
## Removal

1 Remove the original component.


A Mark a cut line 304 mm from the center of the lower door hinge bolt hole.

 Reference Line/Point

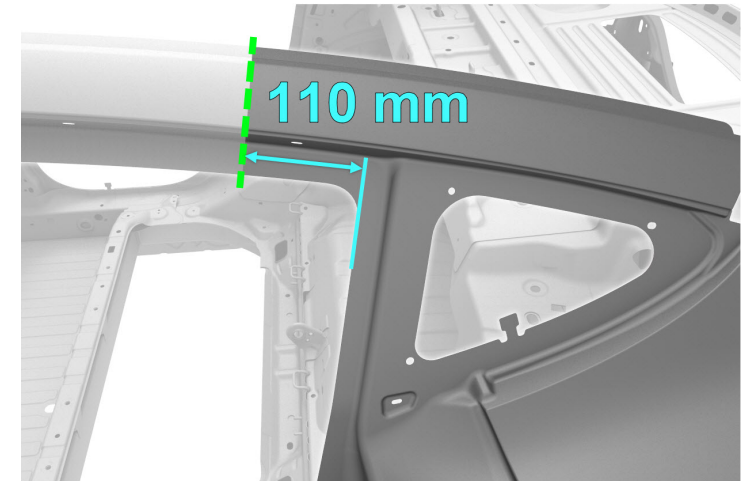
 Cut Line



B Mark a cut line 110 mm forward of the quarter glass flange.

 Reference Line/Point

 Cut Line

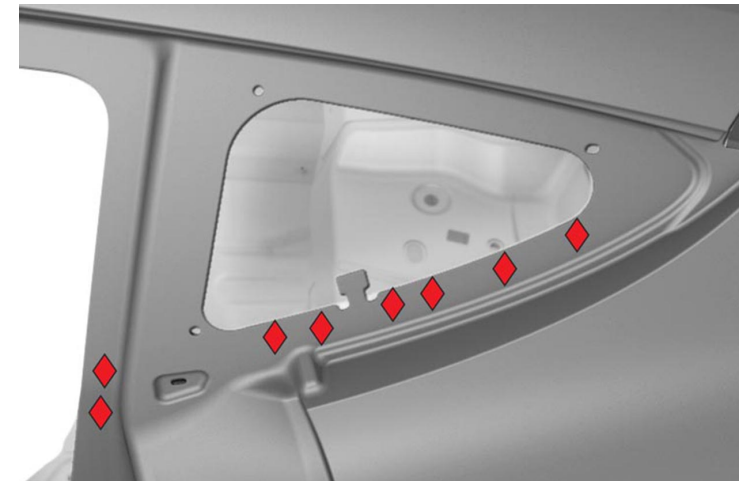




## Removal

- 1 Remove the original component (continued).
  - C Cut the component on the cut lines marked in the previous substeps.
  - D Use an SPR removal tool or a drill with a high-strength steel bit to remove the factory self-piercing rivets. Use a belt sander for any factory self-piercing rivets that cannot be removed with an SPR removal tool or a drill.

◆ Factory SPR (x30)

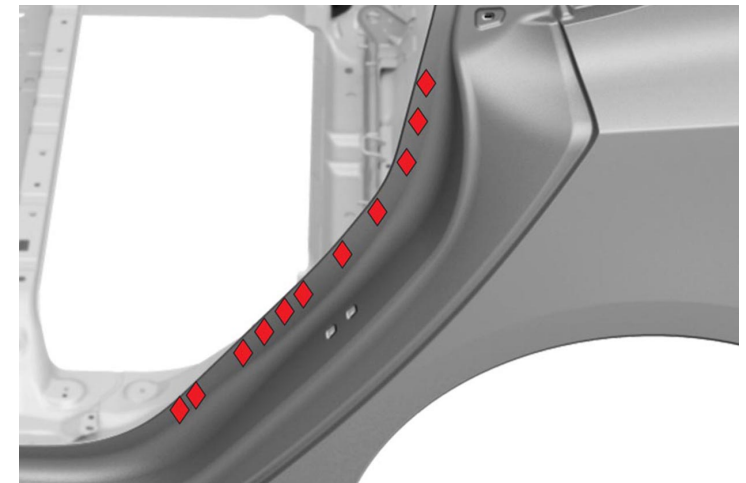




## Removal

1 Remove the original component (continued).

D Use an SPR removal tool or a drill with a high-strength steel bit to remove the factory self-piercing rivets. Use a belt sander for any factory self-piercing rivets that cannot be removed with an SPR removal tool or a drill (continued).



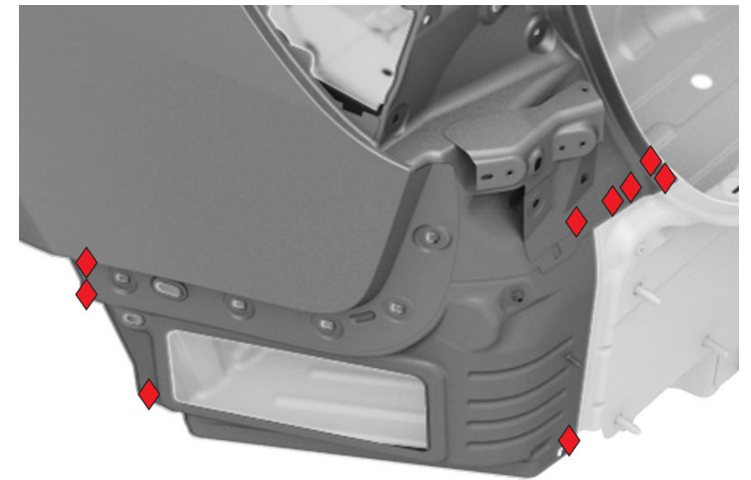




## Removal

1 Remove the original component (continued).

**D** Use an SPR removal tool or a drill with a high-strength steel bit to remove the factory self-piercing rivets. Use a belt sander for any factory self-piercing rivets that cannot be removed with an SPR removal tool or a drill (continued).





## Removal

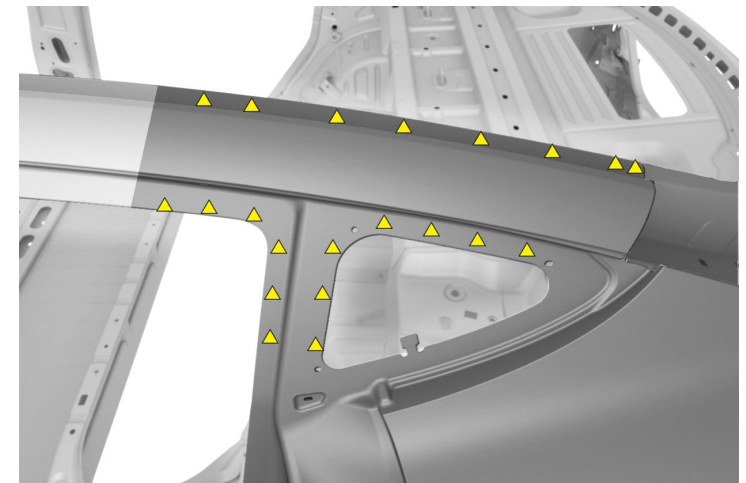
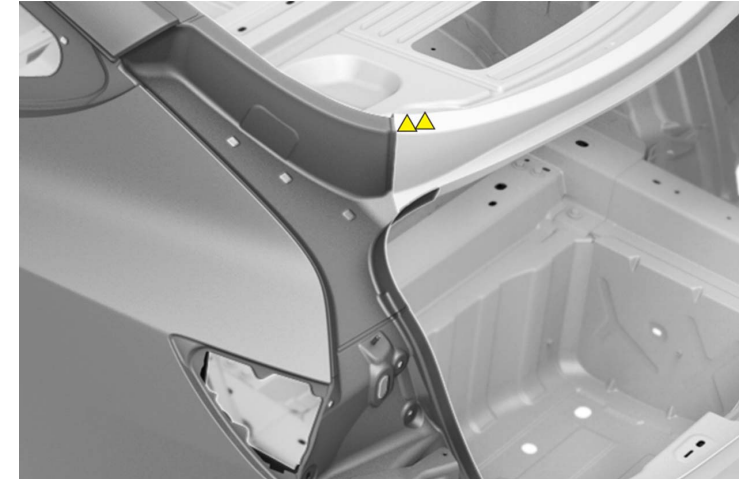
1 Remove the original component (continued).

E Use a drill with a 4.8 mm bit to drill out the spot welds shown.  
▲ Factory Spot Weld (x2)



**NOTE:** Drill completely through both panels. Countersunk rivets will be installed in a [later step](#).

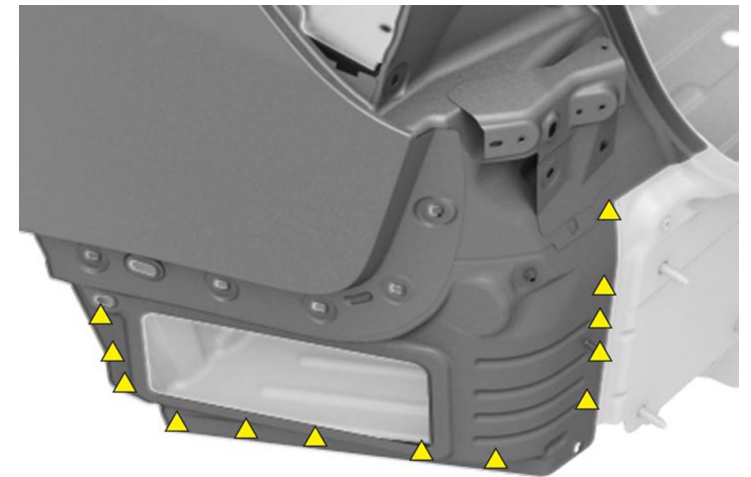
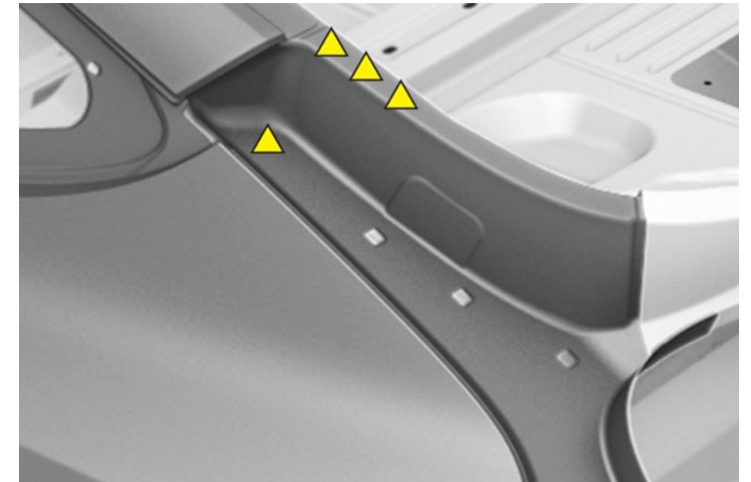
F Use a drill with a spot weld bit to drill out the remaining spot welds.  
▲ Factory Spot Weld (x52)





## Removal

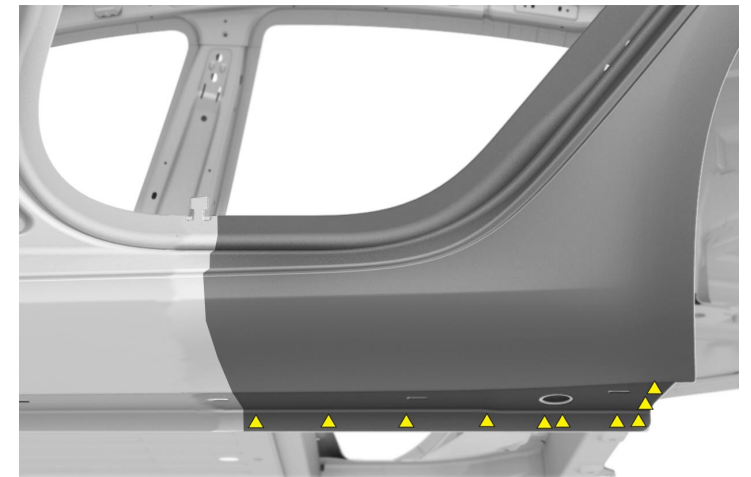
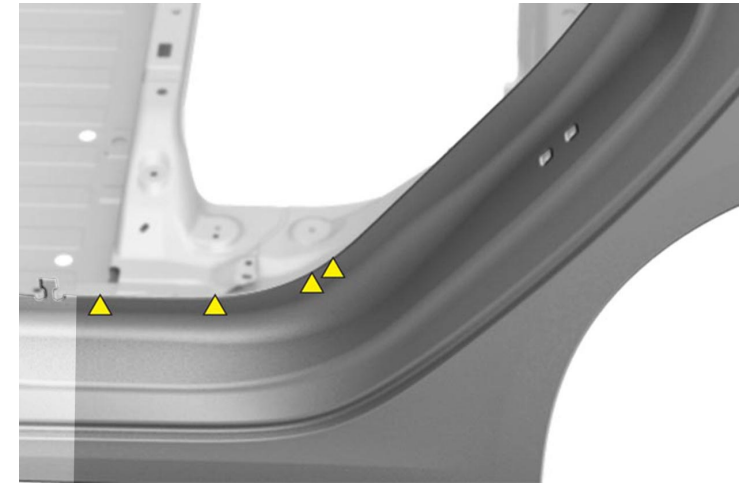
- 1 Remove the original component (continued).
- F Use a drill with a spot weld bit to drill out the remaining spot welds (continued).





## Removal

- 1 Remove the original component (continued).
- F Use a drill with a spot weld bit to drill out the remaining spot welds (continued).

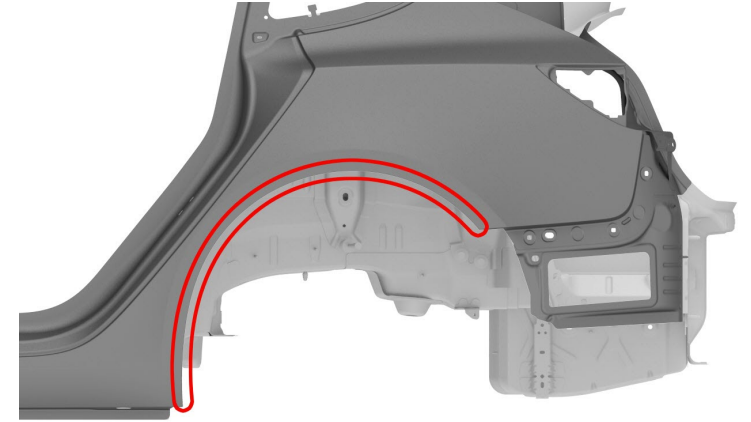




## Removal

1 Remove the original component (continued).

**G** Use a grinding tool to grind through the hemmed wheel arch flange to separate the Quarter Outer from the Rear Wheel Arch.





## Removal

1 Remove the original component (continued).

H

Use a heat gun to heat the adhesive joints, and then use a hammer and chisel to remove the original component.



**WARNING:** Do not heat any adhesive joints of components that are not being removed. Heating adhesive joints weakens the adhesive bond and could compromise vehicle crash integrity.



**WARNING:** Do not heat the adhesive joints above 100°C (212°F). Heating the adhesive joints above 100°C (212°F) can weaken the aluminum and compromise vehicle crash integrity.



**NOTE:** Do not damage the surrounding components, including the foam dam (highlighted in red).



**NOTE:** Use a heat gun to heat the foam dam to release it from the original Quarter Outer, but do not remove the foam dam from the vehicle.





## Removal

2

Use a disc sander with a medium-abrasive surface conditioning disc to remove any remaining materials from the mating surfaces. Use a belt sander with a medium-abrasive belt for any areas that cannot be reached with a disc sander. Vacuum any adhesive dust.



**WARNING:** Remove the epoxy adhesive in a well-ventilated area. Wear suitable personal protective equipment.



**WARNING:** Use only sanding wheels and belts that are 80 grit or finer on aluminum components. Using sanding wheels or belts that are coarser than 80 grit can cause fractures in the aluminum.



**CAUTION:** Beware of cross-contamination. Do not use the same equipment to remove epoxy from aluminum and steel. Cross-contamination might result in galvanic corrosion.



## Replacement

1

Prepare for installation.

A

Put the new component into position and clamp it into place.

B

Trim the new component to achieve suitable gaps.





## Replacement

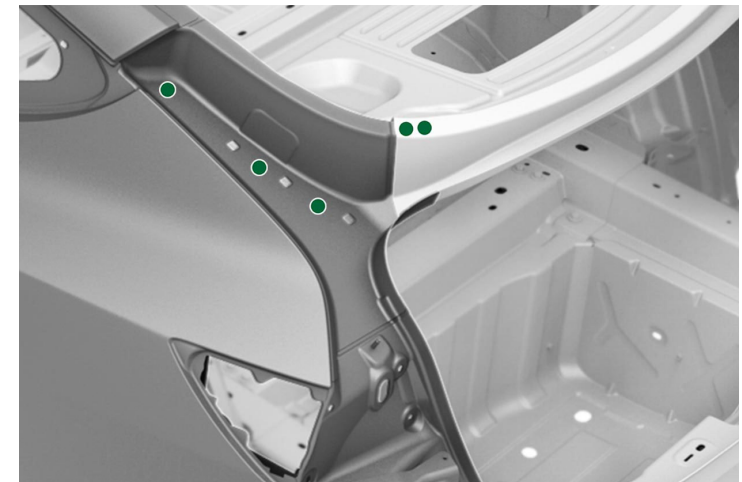
1 Prepare for installation (continued).

C Mark the fastener locations on the new component.

- Structural Rivet, 4.8 mm (x18)
- Countersunk Rivet, 4.8 mm Short (x5)
- ☆ Flow Form Rivet S08 (x6)
- ★ Flow Form Rivet S18 (x17)
- ★ Flow Form Rivet S38 (x1)



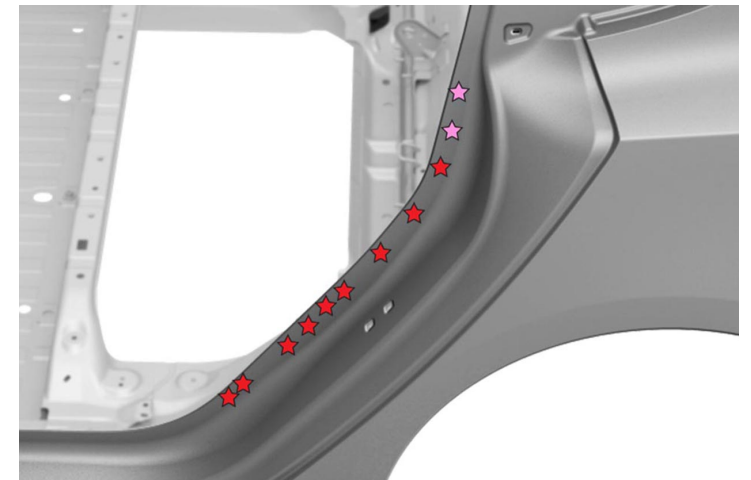
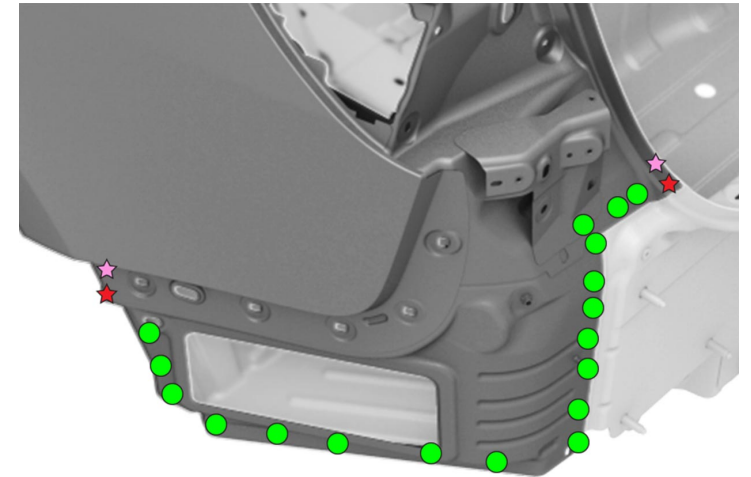
**NOTE:** The Flow Form rivet (circled in red) is required only if the [Cantrail Extension Inner](#) has been replaced.





# Replacement

- 1 Prepare for installation (continued).
- C Mark the fastener locations on the new component (continued).



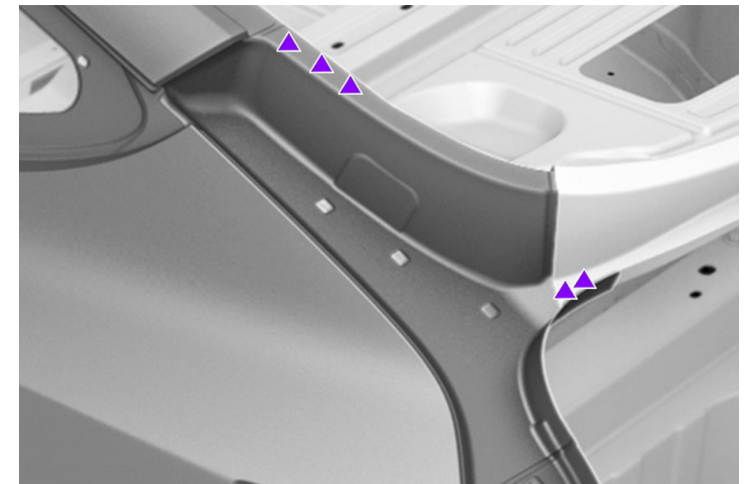
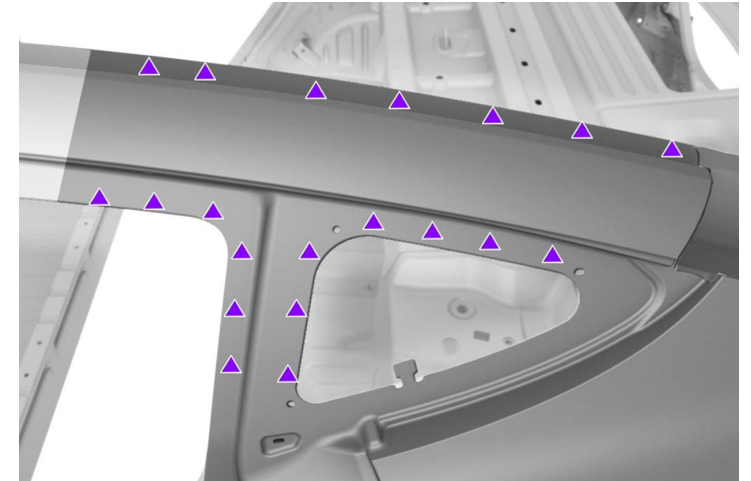


## Replacement

1 Prepare for installation (continued).

D Mark the installation spot weld locations on the new component and on the vehicle.

▲ Installation Spot Weld

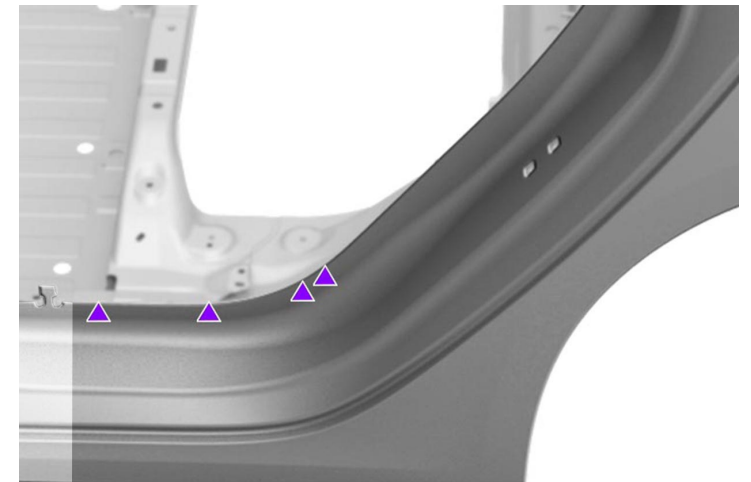
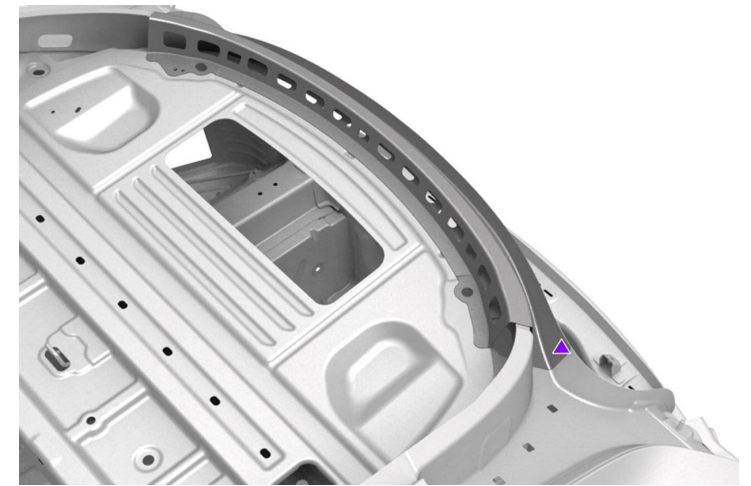




## Replacement

1 Prepare for installation (continued).

D Mark the installation spot weld locations on the new component and on the vehicle (continued).

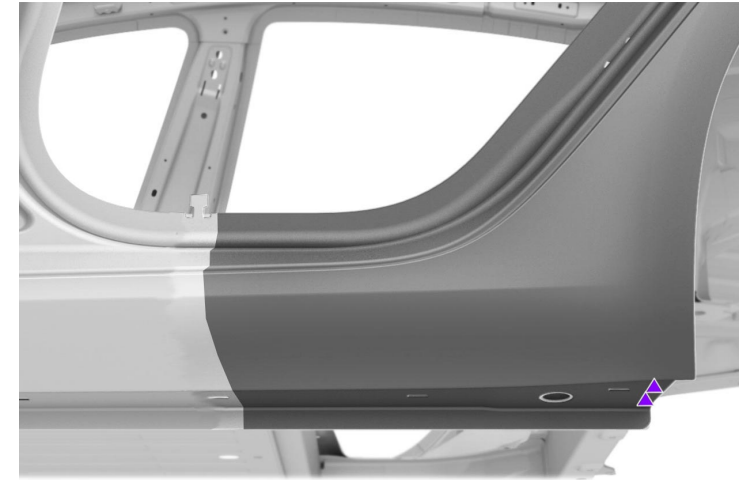




## Replacement

1 Prepare for installation (continued).

D Mark the installation spot weld locations on the new component and on the vehicle (continued).





## Replacement

1 Prepare for installation (continued).

**E** Use a drill with a 4.8 mm bit to drill holes for structural rivets and countersunk rivets.

● Structural Rivet, 4.8 mm (x18)

● Countersunk Rivet, 4.8 mm Short (x5)



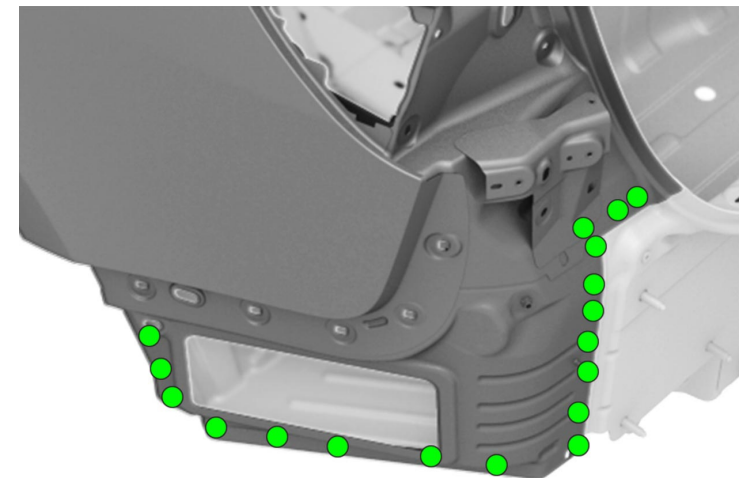
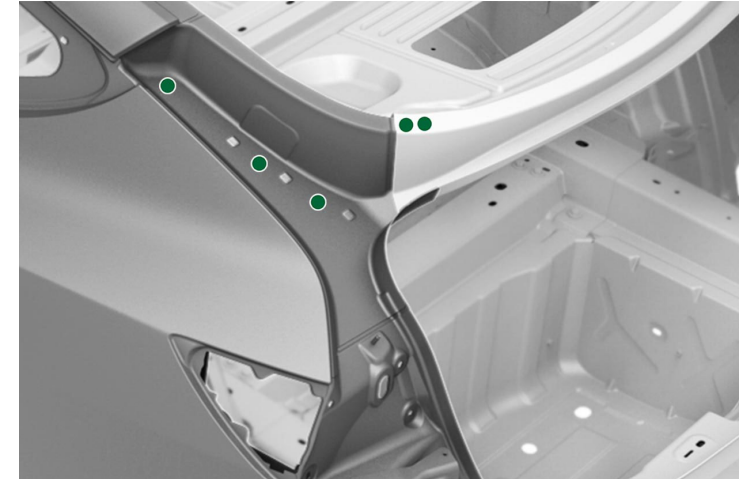
**CAUTION:** Drill holes for countersunk rivets far enough away from the corners and any other obstructions to provide enough clearance (approximately 18 mm) for the Microstop countersink cage assembly.



**NOTE:** For any locations that originally had factory SPRs, drill from the backside of the panel.



**NOTE:** Install a grip screw after drilling each hole to keep the panel aligned while drilling the remaining holes.





## Replacement

1 Prepare for installation (continued).

**F** Use a drill with the Microstop countersink cage assembly and the appropriate-sized countersink bit to countersink the holes for countersunk rivets (Microstop Countersink Kit, Tesla p/n 1133101-00-A).



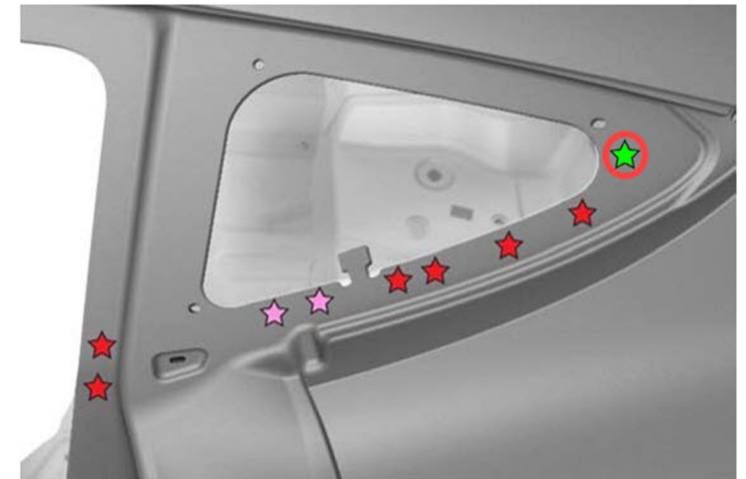
**NOTE:** If the depth adjustment for the Microstop countersink cage assembly has not already been set, do the procedure in the [Microstop Countersink Kit tool instructions](#) to adjust the tool.

**G** Create 8 mm holes for flow form rivets.

- ☆ Flow Form Rivet S08 (x6)
- ★ Flow Form Rivet S18 (x17)
- ★ Flow Form Rivet S38 (x1)



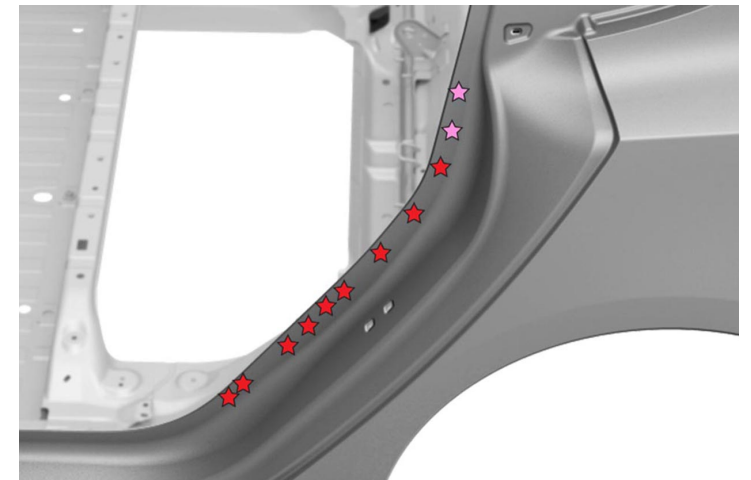
**NOTE:** The Flow Form rivet (circled in red) is required only if the [Cantrail Extension Inner](#) has been replaced.





## Replacement

- 1 Prepare for installation (continued).
- G Create 8 mm holes for flow form rivets (continued).







## Replacement

1 Prepare for installation (continued).

H Mark boundary lines along all mating surfaces between the new component and the vehicle for surface preparation.

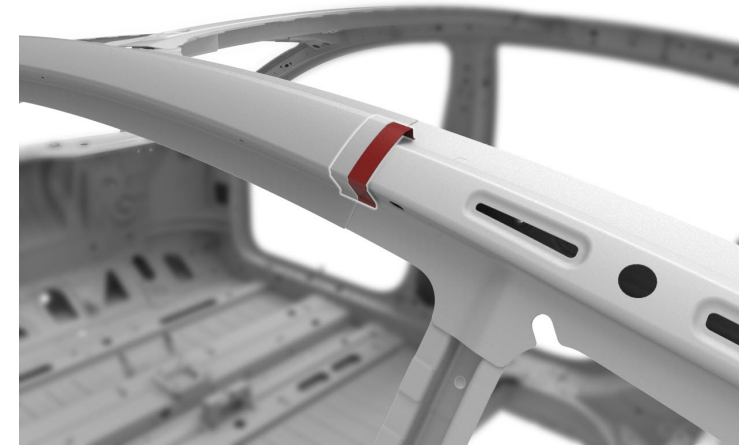
I Remove the new component.



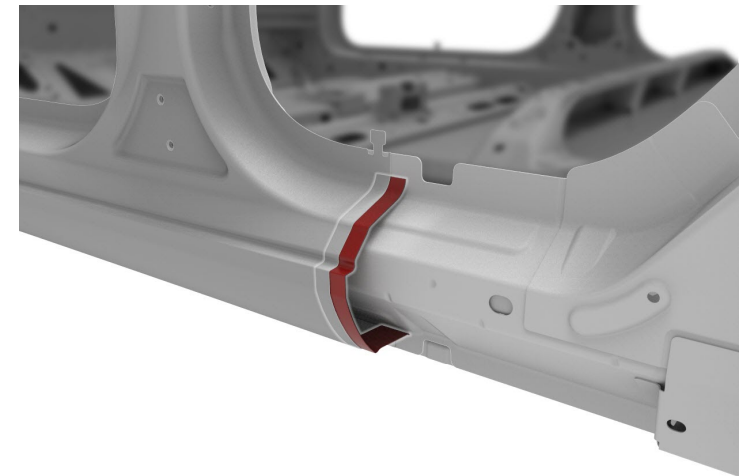
## Replacement

2 Create backing plates for the upper and lower butt joints.

A Cut a 40 mm wide section for the upper backing plate from the upper part of the original Body Side Outer that was removed in an [earlier step](#) to create backing plates similar to the one shown here in red.



B Cut a 40 mm wide section for the lower backing plate from the lower part of the original Body Side Outer that was removed in an [earlier step](#) to create backing plates similar to the one shown here in red.





## Replacement

2 Create backing plates for the upper and lower butt joints (continued).

C Trim the flanges from the backing plates as necessary to allow the backing plates to fit inside the butt joints.



**NOTE:** The backing plates should take up all available space between the Body Side Outer Panel and the underlying panels.

D Put the backing plates into position and test fit the new component on the vehicle to ensure the plates do not affect component fitment.



## Replacement

2 Create backing plates for the upper and lower butt joints (continued).

E Drill 8 mm holes for plug welds to secure the backing plates.

F Use a disc sander with a medium-abrasive surface conditioning disc to remove the e-coat or paint from the outside surface of the backing plates and the weld areas on the vehicle.



**WARNING:** Remove the e-coat in a well-ventilated area. Wear suitable personal protective equipment.



**NOTE:** The lower sill area may contain cavity wax and require cleaning with isopropyl alcohol (IPA).



## Replacement

3 Install the backing plates.

A Put the backing plates into position and clamp them into place.

B Plug weld the backing plates.



**WARNING:** Failure to follow all welding safety precautions, including the use of personal protective equipment, could result in serious injury or property damage. Only technicians who have successfully met Tesla's requirements for welding training are authorized to weld structural components on Tesla vehicles.



**CAUTION:** Do not weld on a Tesla vehicle with an energized high voltage or 12V system. Welding on a Tesla vehicle with an energized high voltage or 12V system might damage vehicle components.



## Replacement

**3** Install the backing plates (continued).

**C** Use a grinding tool to grind down the plug welds until they are flush with the panel.

**4** Prepare the surfaces.

**A** Use a red Scotch-Brite pad or equivalent to scuff the e-coat on the mating surfaces of the new component and the vehicle.



## Replacement

4 Prepare the surfaces (continued).

**B** Use a disc sander with a medium-abrasive surface conditioning disc to remove the e-coat from the weld areas of the new component and the vehicle. Use a belt sander with a medium-abrasive belt for any areas that cannot be reached with a disc sander.

▲ Installation Spot Weld

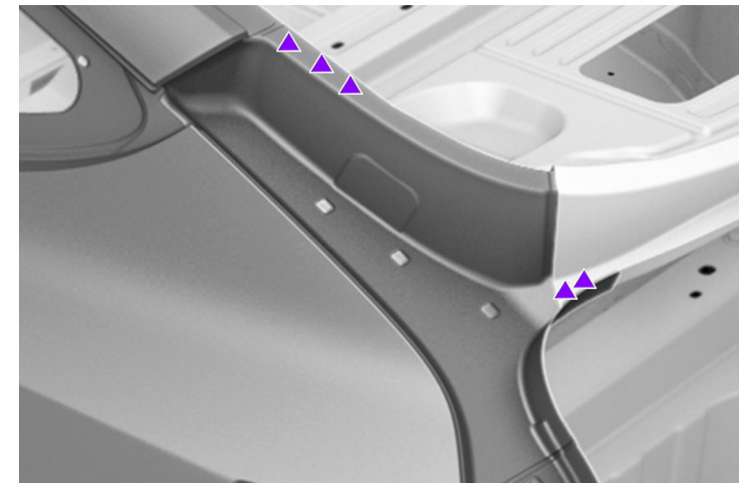
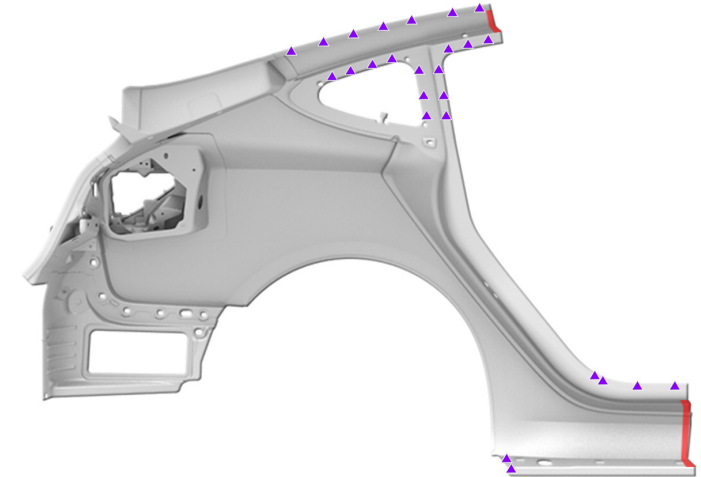
— GMA Weld



**WARNING:** Do not remove e-coat in areas where steel and aluminum make direct contact.



**WARNING:** Remove the e-coat in a well-ventilated area. Wear suitable personal protective equipment.

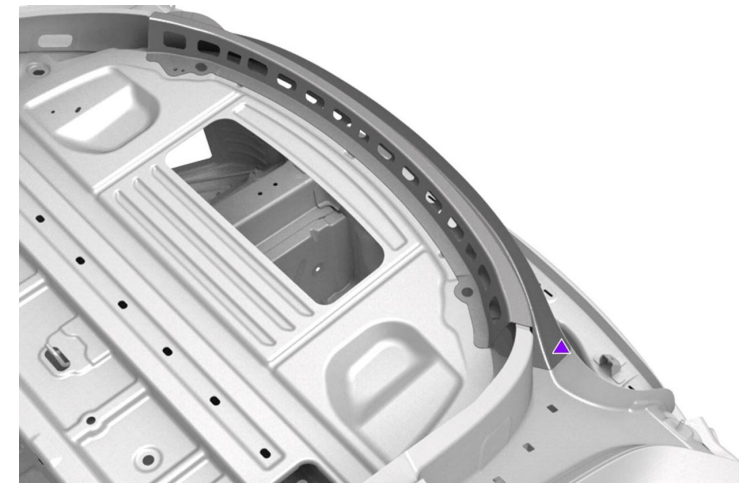




## Replacement

4 Prepare the surfaces (continued).

**B** Use a disc sander with a medium-abrasive surface conditioning disc to remove the e-coat from the weld areas of the new component and the vehicle. Use a belt sander with a medium-abrasive belt for any areas that cannot be reached with a disc sander (continued).



**C** Clean all the mating surfaces and weld areas of the new component or components and the vehicle with isopropyl alcohol (IPA).



**WARNING:** Wipe off the remaining isopropyl alcohol with a clean, dry towel immediately after application. Do not let the remaining isopropyl alcohol air dry. Allowing the remaining isopropyl alcohol to air dry can compromise the adhesive bond.





## Replacement

5 Apply structural adhesive.

A

Spread a thin coating of structural adhesive as a primer layer on the mating surfaces of the vehicle and the new component.



**CAUTION:** If any bare metal mating surfaces have been exposed for two hours or longer, abrade the mating surfaces again to remove oxidation, then clean the mating surfaces with isopropyl alcohol (IPA).



**WARNING:** Do not apply structural adhesive within 25 mm of the GMA weld locations. Applying structural adhesive within 25 mm of the GMA weld locations can cause weld failure.



**NOTE:** Assembly must be performed while the primer layer is still wet. The drying time of the adhesive varies depending on temperature and humidity.

B

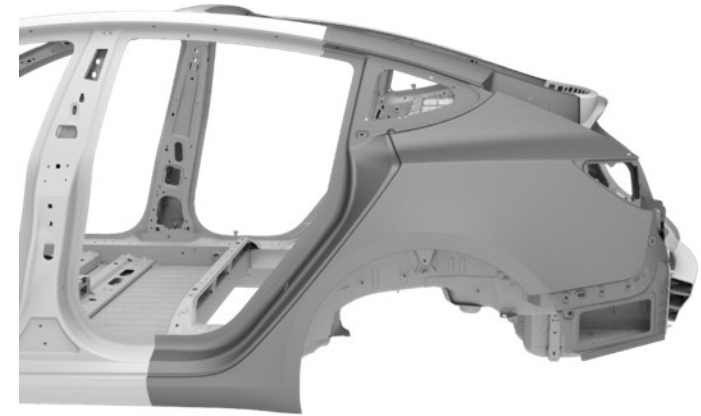
While the primer layer is still wet, apply a bead of structural adhesive on top of the primer layer on the vehicle.



## Replacement

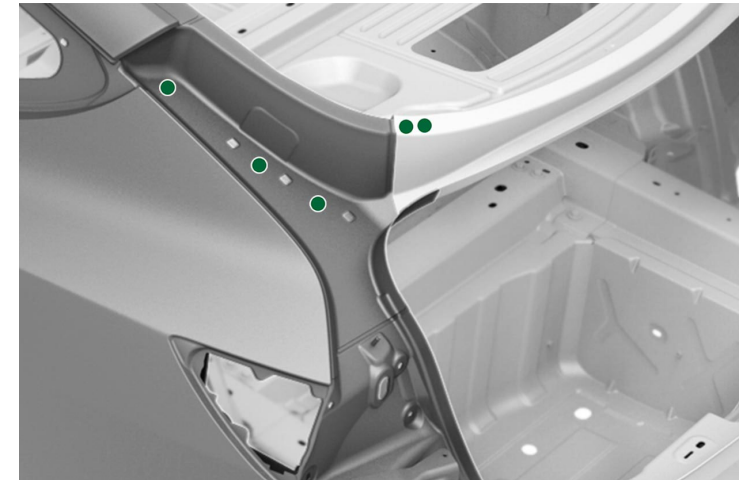
6 Install the new component.

A Put the new component into position.



B Insert the structural rivets and the countersunk rivets.

- Structural Rivet, 4.8 mm (x18)
- Countersunk Rivet, 4.8 mm Short (x5)

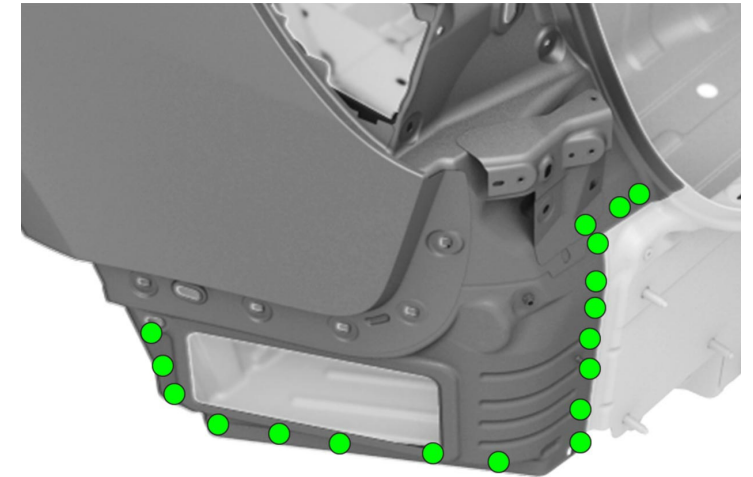




## Replacement

6 Install the new component (continued).

B Insert the structural rivets and the countersunk rivets (continued).



C Insert the flow form rivets.

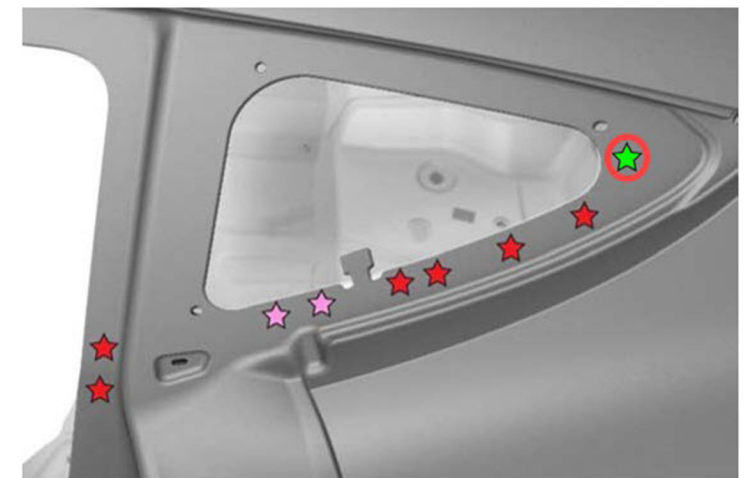
★ Flow Form Rivet S08 (x6)

★ Flow Form Rivet S18 (x17)

★ Flow Form Rivet S38 (x1)



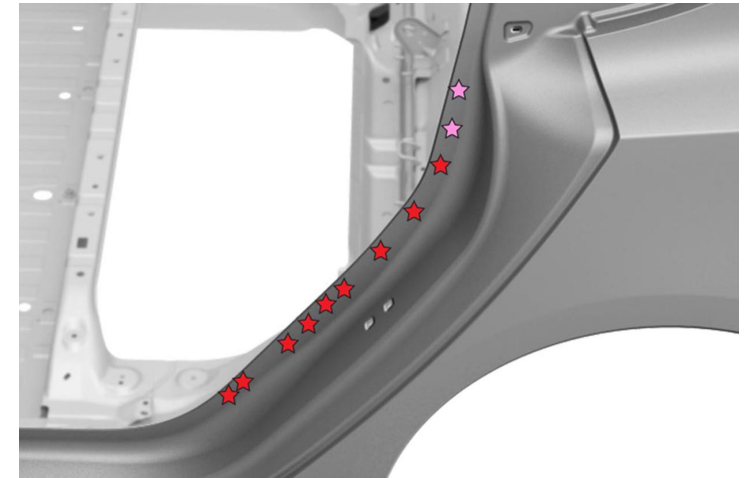
**NOTE:** The Flow Form rivet (circled in red) is required only if the [Cantrail Extension Inner](#) has been replaced.





## Replacement

- 6 Install the new component (continued).
- C Insert the flow form rivets (continued).





## Replacement

**6** Install the new component (continued).

**D** Install the flow form rivets.

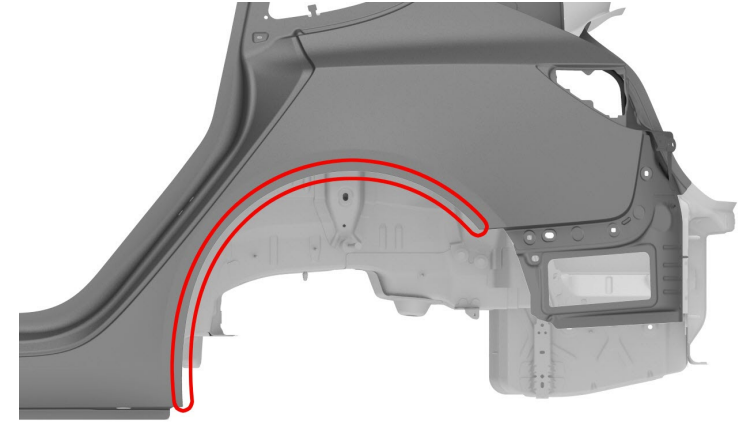
**E** Install the structural rivets and the countersunk rivets.



## Replacement

**6** Install the new component (continued).

**F** Use a hammer and dolly to fold over the wheel arch flange.





## Replacement

6 Install the new component (continued).

G Perform resistance spot welding.  
▲ Installation Spot Weld



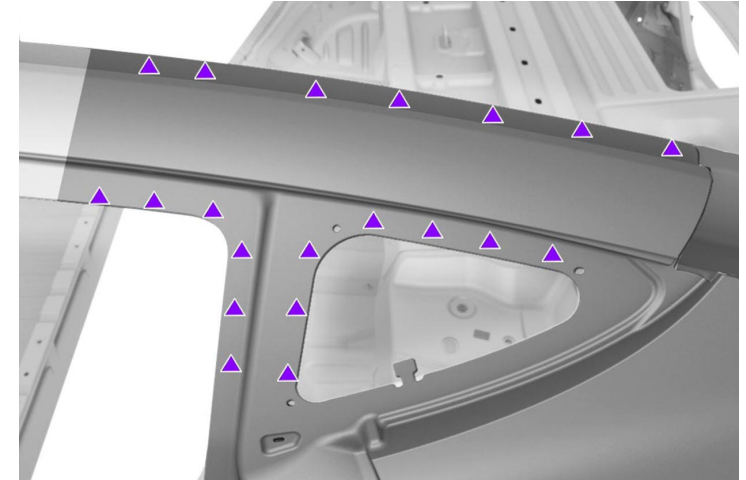
**WARNING:** Failure to follow all welding safety precautions, including the use of personal protective equipment, could result in serious injury or property damage. Only technicians who have successfully met Tesla's requirements for welding training are authorized to weld structural components on Tesla vehicles.



**CAUTION:** Do not weld on a Tesla vehicle with an energized high voltage or 12V system. Welding on a Tesla vehicle with an energized high voltage or 12V system might damage vehicle components.



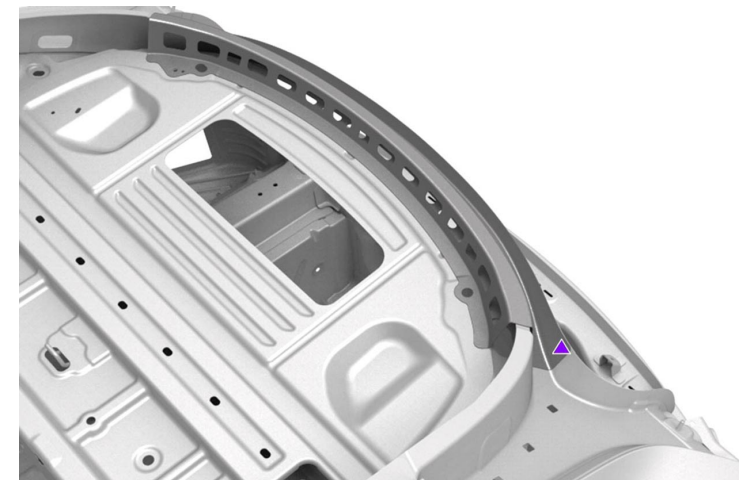
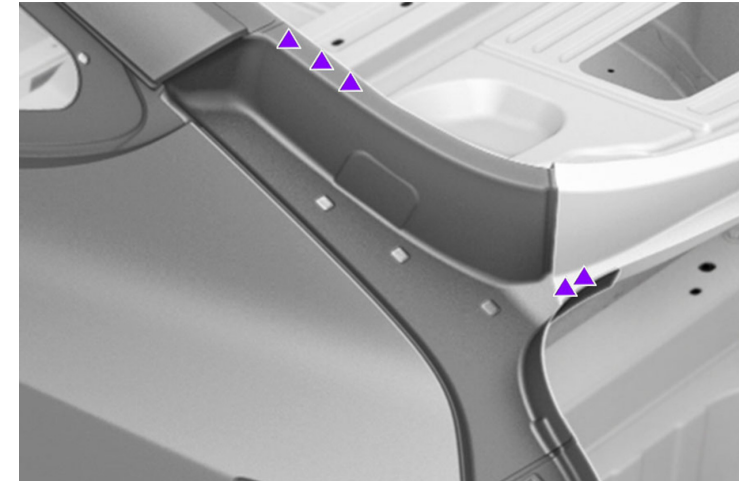
**CAUTION:** Use only insulated clamps within 200 mm of resistance spot weld locations. Do not perform resistance spot welding when there is an uninsulated clamp within 200 mm of the spot weld location.





## Replacement

- 6 Install the new component (continued).
- G Perform resistance spot welding (continued).

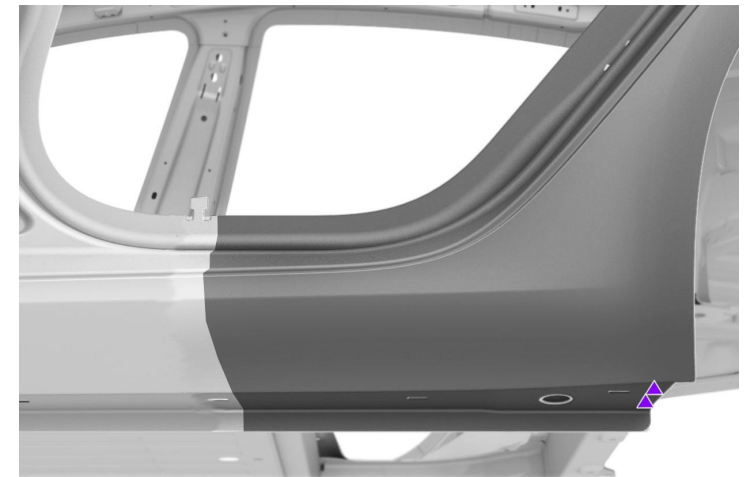
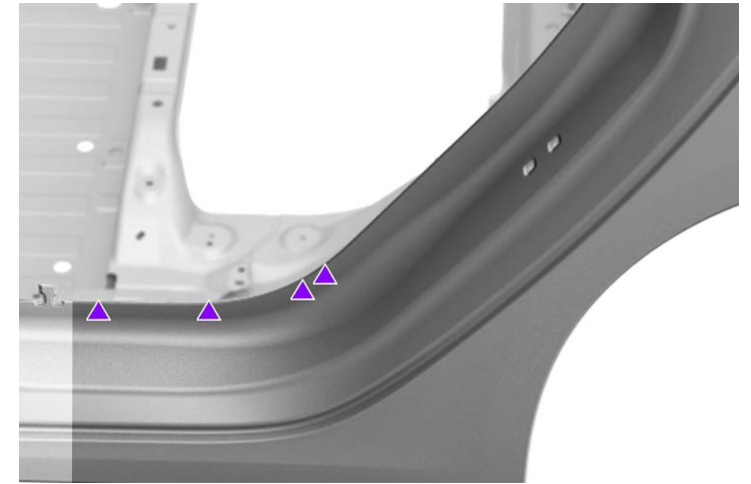






## Replacement

- 6 Install the new component (continued).
- G Perform resistance spot welding (continued).





## Replacement

6 Install the new component (continued).

H Clamp the areas that do not have fasteners.

I Wipe off any excess adhesive.



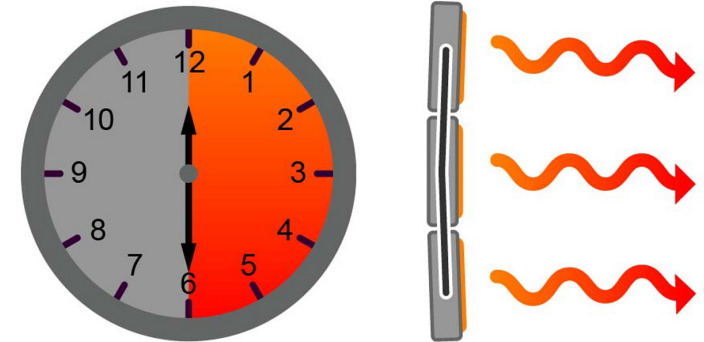
## Replacement

6 Install the new component (continued).

J Bake the structural adhesive so that the bonded panels reach a temperature of 60°C–80°C (140°F–176°F) for at least 30 minutes to achieve full strength.



**WARNING:** Do not allow the High Voltage Battery to reach a temperature above 74°C (165°F). Heating the High Voltage Battery above 74°C (165°F) for an extended period could result in injury to personnel and/or damage to the battery.



00:30:00+

60°C–80°C

7 GMA weld the upper and lower butt joints.

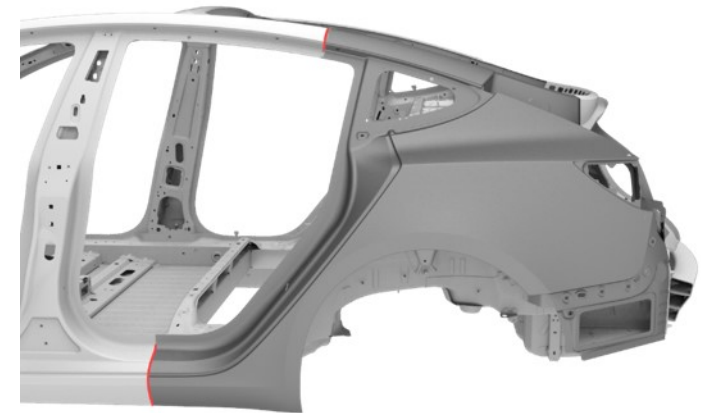
A Perform GMA welding in the butt joint areas directly above the backing plates.



**CAUTION:** Do not weld on a Tesla vehicle with an energized high voltage or 12V system. Welding on a Tesla vehicle with an energized high voltage or 12V system might damage vehicle components.



**WARNING:** Do not weld the panel where it directly contacts the high strength panels underneath. The heat from welding might weaken the strength of the underlying high strength steel structure.





## Replacement

7 GMA weld the upper and lower butt joints (continued).

A Perform GMA welding in the butt joint areas directly above the backing plates (continued).



**WARNING:** Failure to follow all welding safety precautions, including the use of personal protective equipment, could result in serious injury or property damage. Only technicians who have successfully met Tesla's requirements for welding training are authorized to weld structural components on Tesla vehicles.



**WARNING:** To maintain vehicle crash integrity, use only ER70S-6 or Bohler Union X96 welding wire and an approved GMA welder to perform steel GMA welding on mild steel components.



**WARNING:** Before GMA welding, make sure that the structural adhesive is dry to the touch. If the structural adhesive is not dry to the touch before GMA welding, the strength of the adhesive bond might be compromised.



**NOTE:** Before GMA welding, a test weld using material of the same gauge and type should be performed to make sure that the welding equipment settings produce a satisfactory joint.



## Replacement

**7** GMA weld the upper and lower butt joints (continued).

**B** Use a grinding tool to grind down the welds until they are flush with the panel.

**8** Seal the seams in the factory locations, and as necessary.