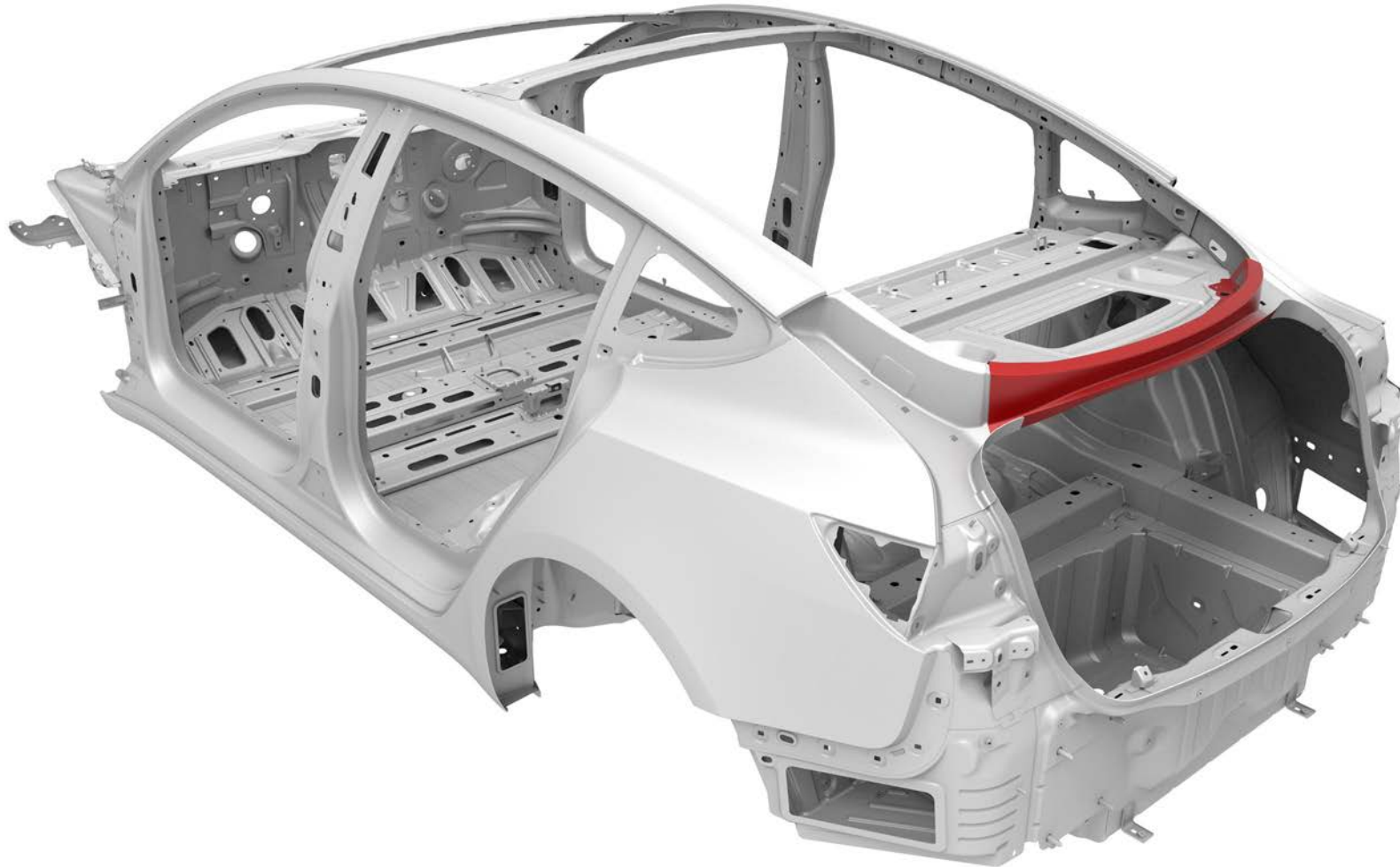





Rear Center Trough







Parts List

Quantity	Part Number	Description	Image / Notes
1	1099605-S0-A	Rear Center Trough	
4 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.
16 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.
2 rivets needed; order 10 rivets	1069329-00-A	★ Flow Form Rivet S18	All rivets come in packages of 10; order all rivets in multiples of 10.
1	—	Structural Adhesive	⚠ WARNING: Use only Tesla-approved structural adhesive; refer to BR-15-92-008 , "Approved Structural Adhesive and Urethane Sealants" for a list of current approved structural adhesives. Refer to BR-17-92-002 , "Obtaining Adhesives, Coolant, and Other Chemicals" for information on how to obtain approved structural adhesive.
1	—	Seam Sealer	Source locally; not available from Tesla.

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> WARNING: Wear the appropriate personal protective equipment (PPE) when performing this procedure.</p> <p> CAUTION: This procedure involves both steel and aluminum components. Use the appropriate tools at each step to avoid cross-contamination.</p>	<p>The special tools listed below are required to perform this procedure:</p> <ul style="list-style-type: none">• Microstop Countersink kit• Flow form rivet installation tool <p>Use only approved fastener installation tools for structural repairs. Refer to BR-16-92-001, "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">• Resistance Spot Welder <p>Use only an approved resistance spot welder. Refer to BR-16-92-007, "Approved Welders" for a list of current approved resistance spot welders.</p>



Prerequisites





No welded, riveted, or bonded panels need to be removed prior to performing this procedure.

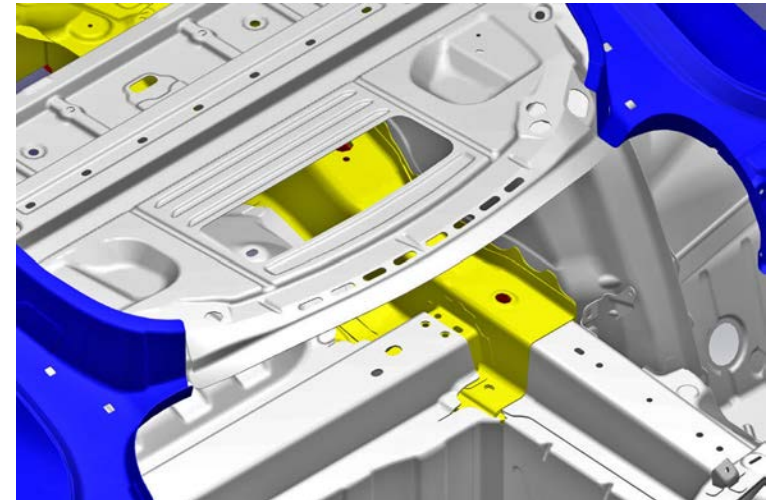
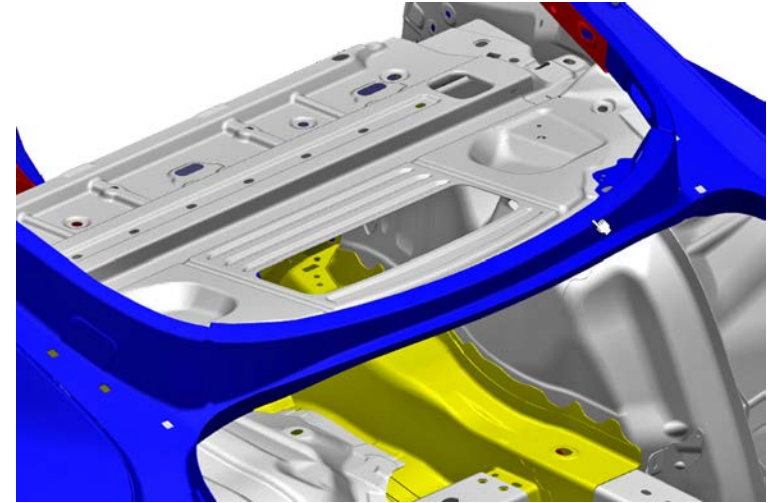


Removal

1

Identify the component materials in the repair area.

-  Aluminum
-  Mild Steel
-  High-Strength Steel
-  Ultra High-Strength Steel





Removal

2 Remove the original component.

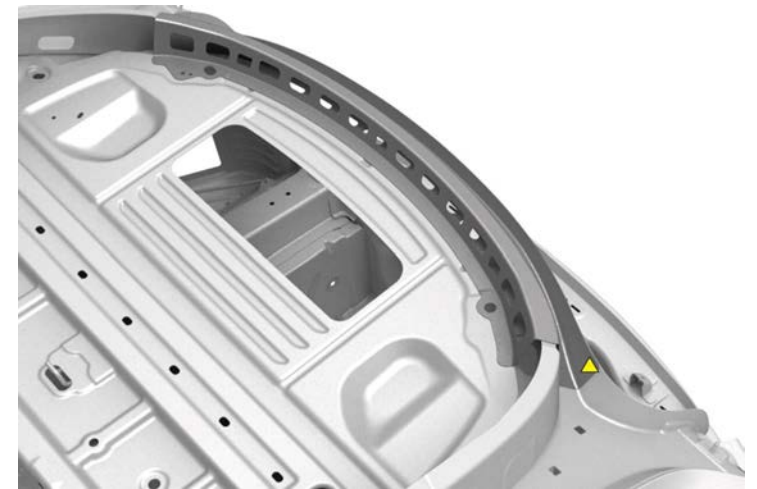
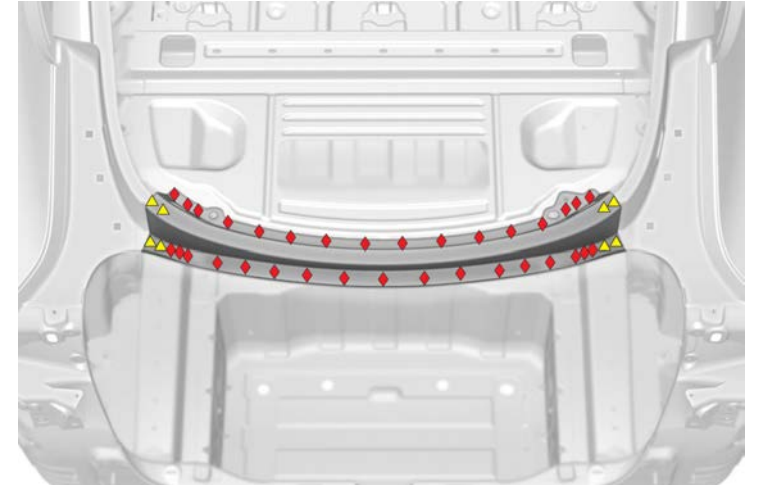
A Identify the fasteners.

◆ Factory SPR (x33)

▲ Factory Spot Weld (x10)



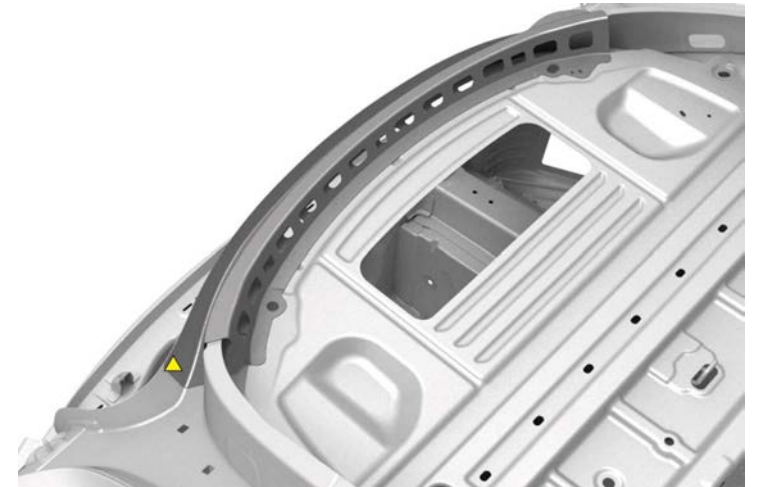
NOTE: Factory spot weld locations shown are approximate. Exact spot weld locations and number vary from vehicle to vehicle.





Removal

- 2 Remove the original component (continued).
- A Identify the fasteners (continued).



- B Use a belt sander to sand down the factory spot welds, or use a drill with a spot weld bit to drill them out.





Removal

2 Remove the original component (continued).

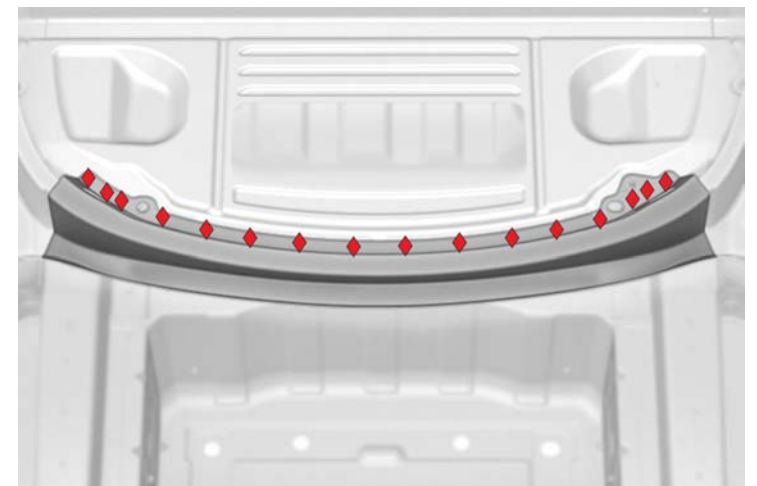
B Use a belt sander to sand down the factory spot welds, or use a drill with a spot weld bit to drill them out (continued).

C Use a drill with a 4.8 mm (3/16 in) bit to drill out the factory self-piercing rivets shown.

◆ Factory SPR (x16)



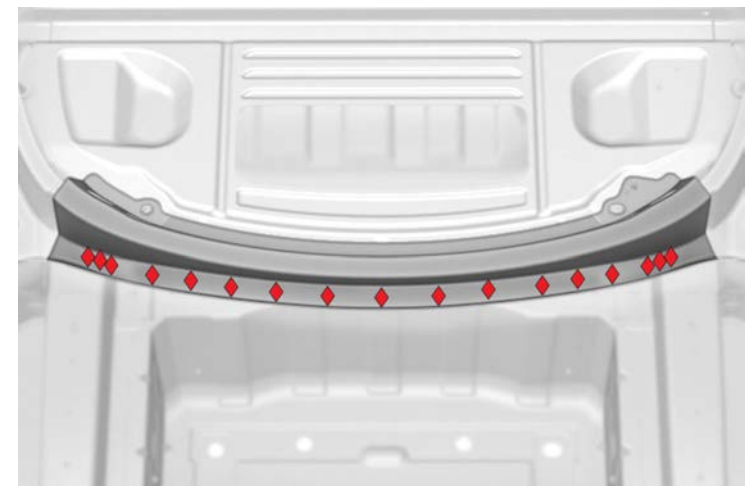
NOTE: 4.8 mm structural rivets are installed in these locations in a later step.





Removal

- 2 Remove the original component (continued).
- C Use a drill with a 4.8 mm (3/16 in) bit to drill out the factory self-piercing rivets shown (continued).
- D Use a belt sander to grind down enough of the heads of the factory self-piercing rivets shown to remove the original component.
 - ◆ Factory SPR (x17)



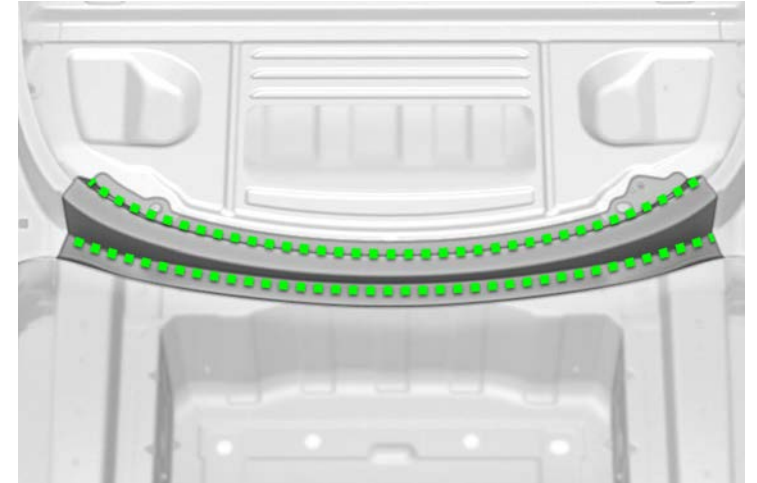


Removal

2 Remove the original component (continued).

E Mark cut lines to prepare to cut away the bulk of the original component.

— — — — — Cut Line





Removal

2 Remove the original component (continued).

F

Cut the component on the cut lines marked in the previous substep.



CAUTION: Do not damage the surrounding components.

G

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 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.



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.





Removal

2 Remove the original component (continued).

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





Removal

2 Remove the original component (continued).

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





Removal

3

Use a disc sander with a medium-abrasive surface conditioning disc to remove any remaining materials from the bond paths. 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.



4

Grind down any remaining pieces of the factory self-piercing rivets so that the Parcel Shelf is flush.



Replacement

- 1 Prepare for installation.
 - A Put the new component into position and clamp it into place.



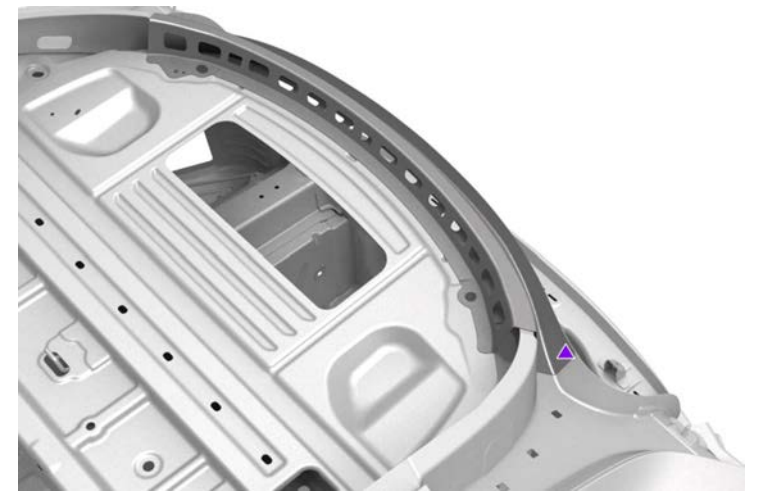
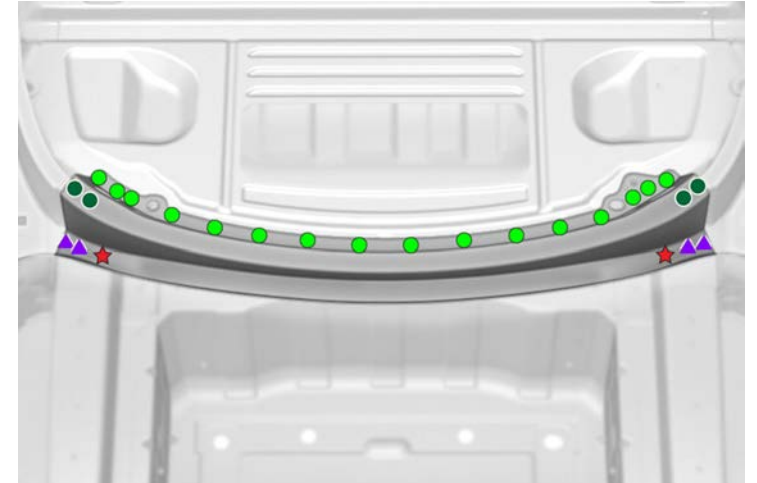


Replacement

1 Prepare for installation (continued).

B Mark the fastener locations on the new component.

- Countersunk Rivet, 4.8 mm Short (x4)
- Structural Rivet, 4.8 mm (x16)
- ★ Flow Form Rivet S18 (x2)
- ▲ Installation Spot Weld (x6)





Replacement

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

- C Use a drill with a 4.8 mm (3/16 in) bit to drill holes for countersunk rivets and structural rivets.

- Countersunk Rivet, 4.8 mm Short (x4)

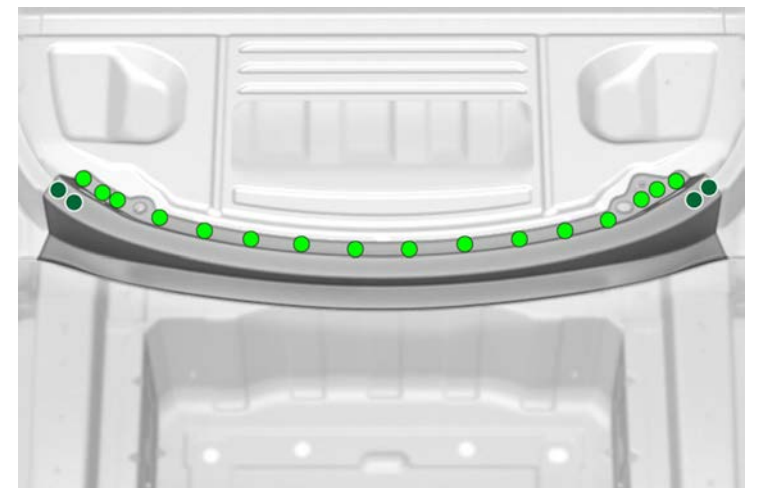
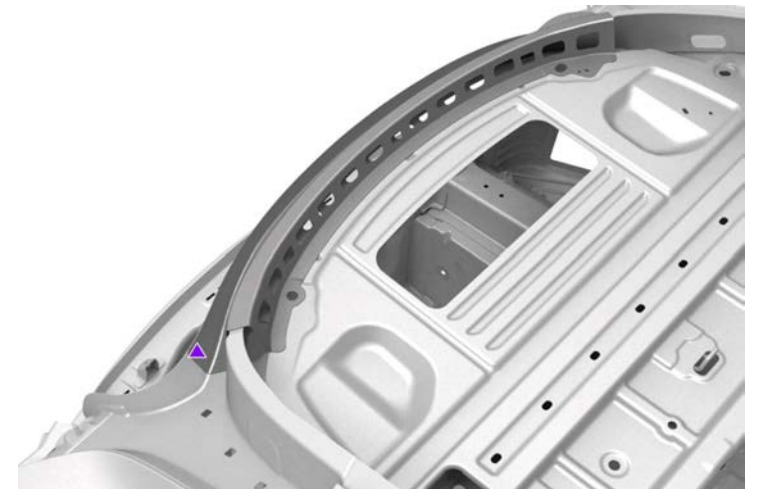
- Structural Rivet, 4.8 mm (x16)



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



CAUTION: Drill holes for countersunk rivets far enough away from the corners and any other obstructions to provide enough clearance (approximately 18 mm or 11/16 in) for the Microstop countersink cage assembly.





Replacement

- 1 Prepare for installation (continued).
 - C Use a drill with a 4.8 mm (3/16 in) bit to drill holes for countersunk rivets and structural rivets (continued).





Replacement

1 Prepare for installation (continued).

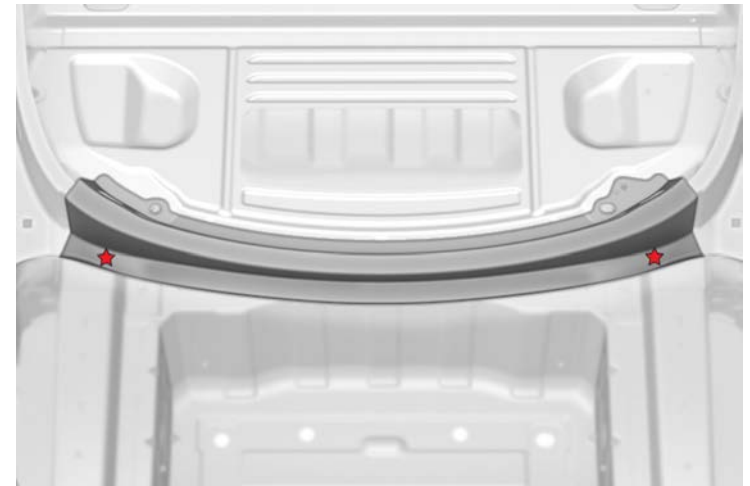
D Use a drill with the Microstop countersink cage assembly and the appropriate-sized countersink bit to countersink the holes for countersunk rivets (Microstop Countersink Kit, Tesla p/n 1133101-00-A).



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.

E Create holes for flow form rivets.

★ Flow Form Rivet S18 (x2)





Replacement

- 1 Prepare for installation (continued).
- E Create holes for flow form rivets (continued).

- F Mark the bond path areas on the new component. These areas will be prepared for bonding in a later step.





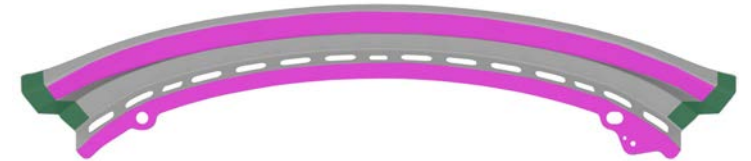


Replacement

- 1 Prepare for installation (continued).
 - G Remove the new component.



- 2 Prepare the surfaces.
 - A Mark the steel-to-aluminum and the steel-to-steel bond path areas on the new component.
 -  Steel-to-Aluminum Bond Path
 -  Steel-to-Steel Bond Path





Replacement

2 Prepare the surfaces (continued).

A Mark the steel-to-aluminum and the steel-to-steel bond path areas on the new component (continued).




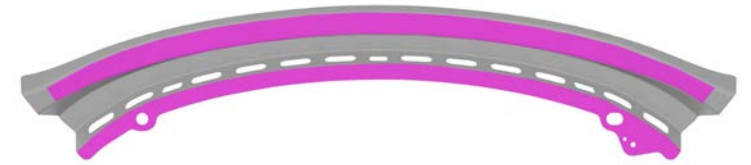


Replacement

2 Prepare the surfaces (continued).

B Use a red Scotch-Brite pad or equivalent to scuff the new component in the steel-to-aluminum bond path areas.

 Steel-to-Aluminum Bond Path





Replacement

2 Prepare the surfaces (continued).

C Use a disc sander with a medium-abrasive surface conditioning disc to remove the e-coat on the new component and on the vehicle in the steel-to-steel bond path areas and the installation spot weld areas. Use a belt sander with a medium-abrasive belt for any areas that cannot be reached with a disc sander.

■ Steel-to-Steel Bond Path

▲ Installation Spot Weld (x6)



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





Replacement

2 Prepare the surfaces (continued).

C Use a disc sander with a medium-abrasive surface conditioning disc to remove the e-coat on the new component and on the vehicle in the steel-to-steel bond path areas and the installation spot weld areas. Use a belt sander with a medium-abrasive belt for any areas that cannot be reached with a disc sander (continued).





Replacement

2 Prepare the surfaces (continued).

C Use a disc sander with a medium-abrasive surface conditioning disc to remove the e-coat on the new component and on the vehicle in the steel-to-steel bond path areas and the installation spot weld areas. Use a belt sander with a medium-abrasive belt for any areas that cannot be reached with a disc sander (continued).





Replacement

2 Prepare the surfaces (continued).

C Use a disc sander with a medium-abrasive surface conditioning disc to remove the e-coat on the new component and on the vehicle in the steel-to-steel bond path areas and the installation spot weld areas. Use a belt sander with a medium-abrasive belt for any areas that cannot be reached with a disc sander (continued).





Replacement

2 Prepare the surfaces (continued).

D Clean all the bond paths on the new component or components and on 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.



3 Apply structural adhesive.

A Spread a thin coating of structural adhesive as a primer layer on the bond paths on the vehicle and the new component.



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





Replacement

3 Apply structural adhesive (continued).

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



4 Install the new component.

A Put the new component into position and insert the countersunk rivets to align the panel.

- Countersunk Rivet, 4.8 mm Short (x4)





Replacement

4 Install the new component (continued).

A Put the new component into position and insert the countersunk rivets to align the panel (continued).



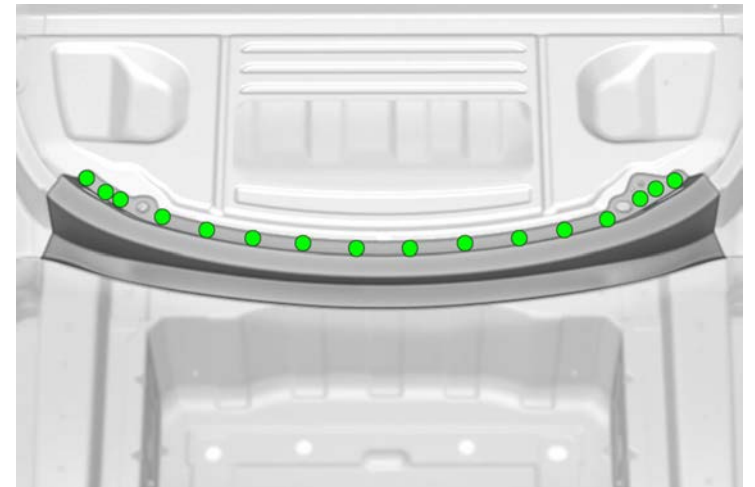


Replacement

4 Install the new component (continued).

B Clamp the new component into place.

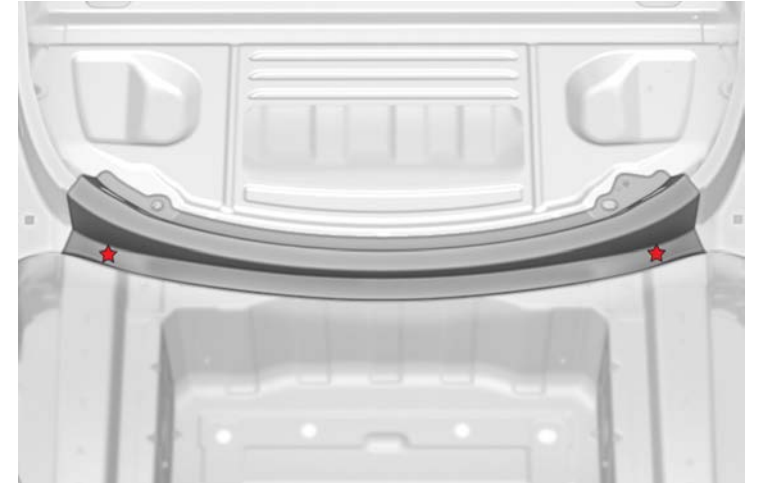
C Insert the structural rivets.
● Structural Rivet, 4.8 mm (x16)





Replacement

- 4 Install the new component (continued).
- D Insert the flow form rivets.
 - ★ Flow Form Rivet S18 (x2)





Replacement

- 4 Install the new component (continued).
- E Install the countersunk rivets and the structural rivets.
- F Install the flow form rivets.





Replacement

- 4 Install the new component (continued).
- G If there are any gaps between the new Rear Center Trough and the liftgate trough, fill the gaps with structural adhesive.
- H Wipe off any excess adhesive.





Replacement

4 Install the new component (continued).

1 Perform resistance spot welding.

▲ Installation Spot Weld (x6)



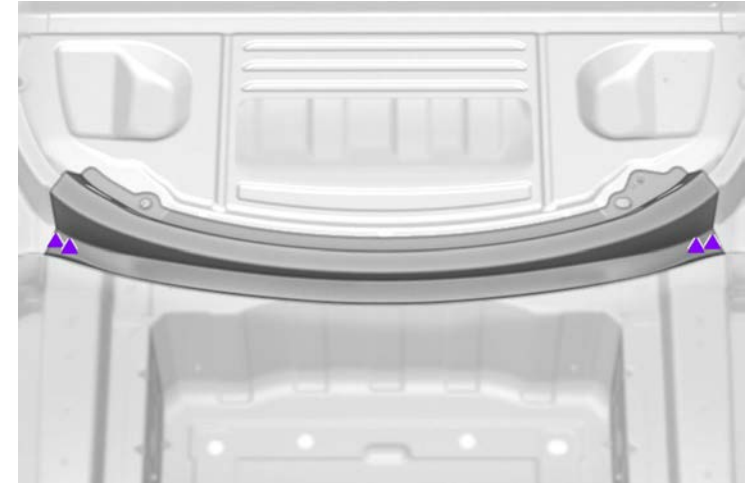
WARNING: Failure to follow all welding safety precautions, including the use of personal protective equipment, could result in serious injury or property damage. Only technicians who have successfully met Tesla's requirements for welding training are authorized to weld structural components on Tesla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



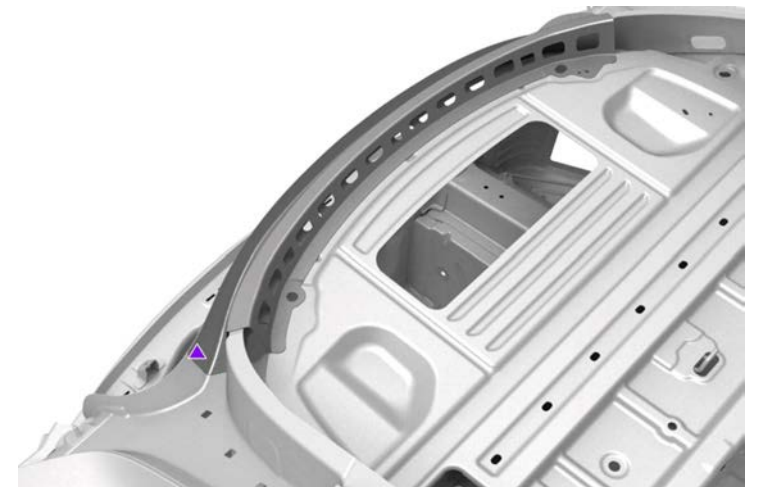
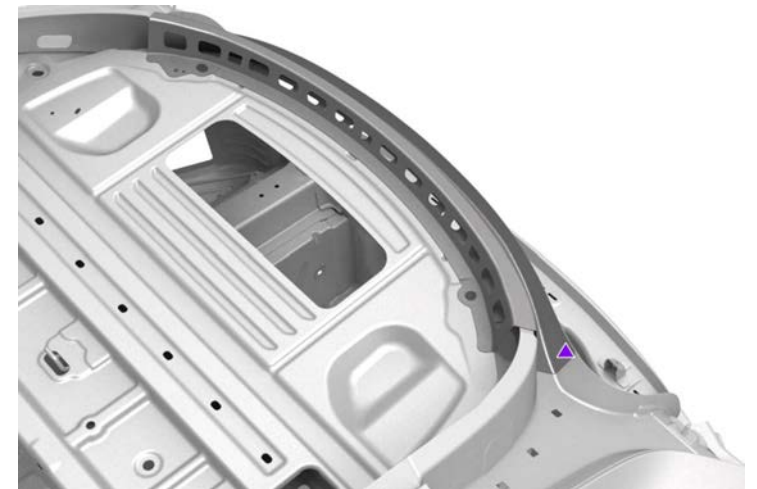
CAUTION: Use only insulated clamps within 200 mm (8 in) of resistance spot weld locations. Do not perform resistance spot welding when there is an uninsulated clamp within 200 mm (8 in) of the spot weld location.





Replacement

- 4 Install the new component (continued).
- 1 Perform resistance spot welding (continued).





Replacement

- 4 Install the new component (continued).
- I Perform resistance spot welding (continued).



- J Clamp the areas that do not have fasteners.



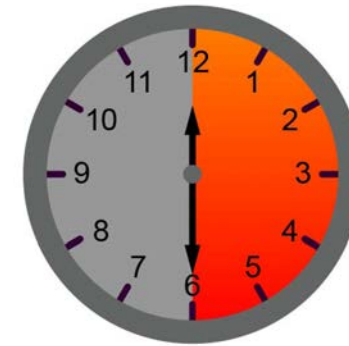
Replacement

4 Install the new component (continued).

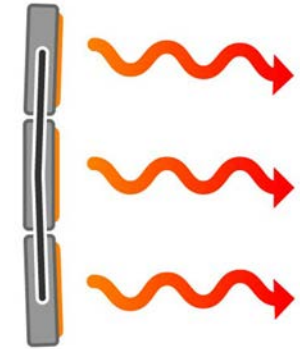
K Bake the structural adhesive so that the bonded panels reach a temperature of 60°C–80°C (140°F–176°F) for at least 30 minutes to achieve full strength.



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

5 Seal the seams in the factory locations, and as necessary.



Replacement

- 6 After refinishing, use a 360-degree spray wand of suitable length to apply corrosion-proofing material on the inside of the enclosed area to prevent corrosion.

