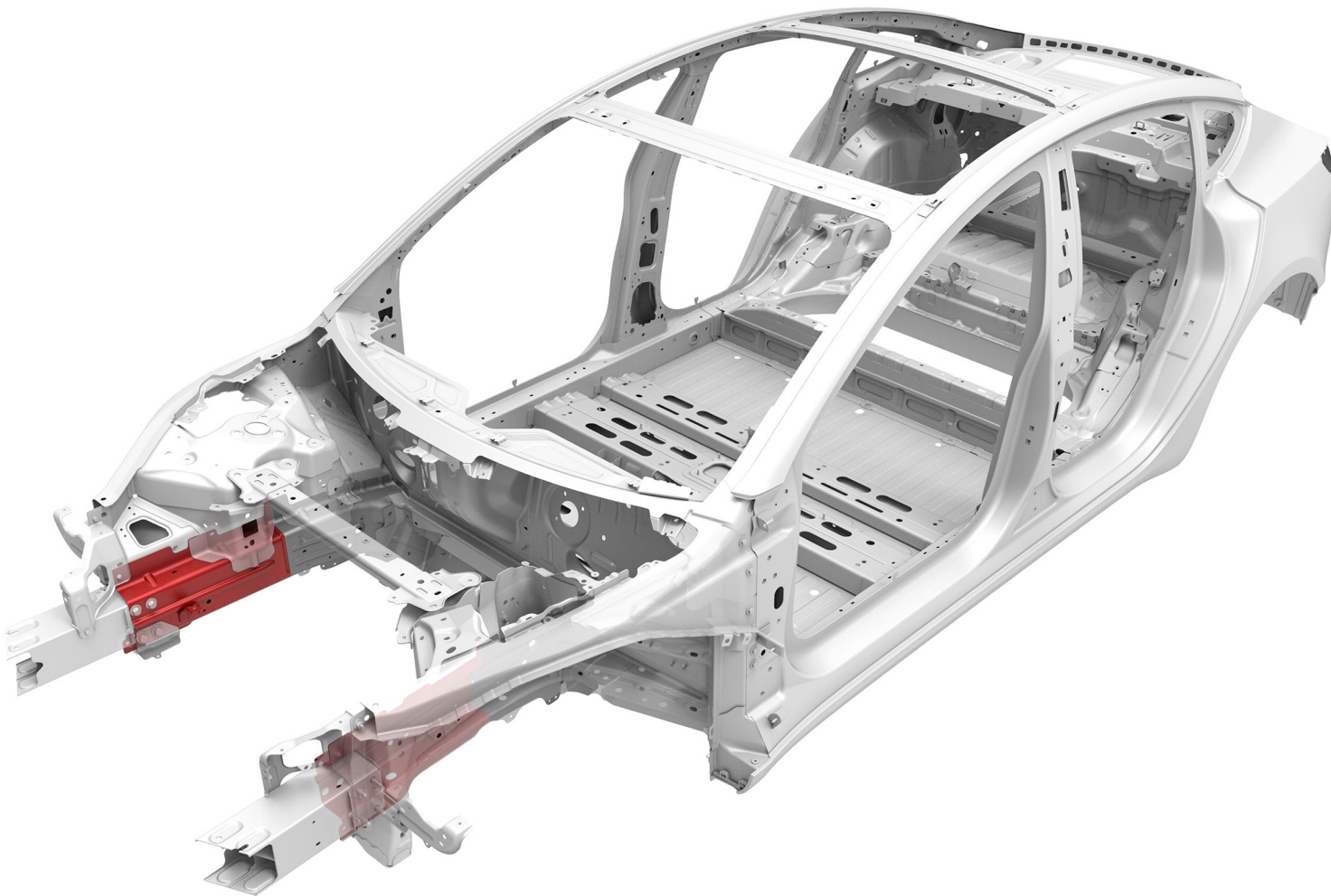


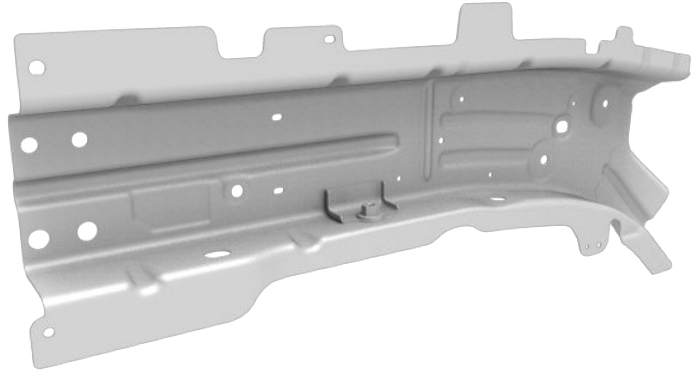



Front Frame Rail Inner (Large Front Section)






Parts List

Quantity	Part Number	Description	Image / Notes
2	1080461-S0-A (LH) 1080462-S0-A (RH)	Front Frame Rail Inner	 <p>One Front Frame Rail Inner is needed for replacement and one is needed to make a backing plate.</p>
1	1073811-S0-A (LH) 1073812-S0-A (RH)	Front Inner Front Subframe Mount	





Parts List

Quantity	Part Number	Description	Image / Notes
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	—	Corrosion-Resistant Epoxy Primer	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>If the damage does not extend beyond the cut line specified in the "Removal" section of the Front Frame Rail Inner (Small Front Section) procedure, discontinue this procedure and perform that procedure.</p> <p>This procedure is for the left-hand component; the procedure is identical for the right-hand component.</p> <p>The items listed in the "Prerequisites" section of this document include only the last structural component that needs to be removed before starting the repair and any other prerequisites that are not obvious. Refer to the estimating system being used for a complete list of the prerequisites that must be performed before starting the repair.</p>	<p> WARNING: Wear the appropriate personal protective equipment (PPE) when performing this procedure.</p> <p> CAUTION: This procedure involves only steel components. Use the appropriate tools to avoid cross-contamination.</p>	<p>The special tools listed below are required to perform this procedure:</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> <ul style="list-style-type: none">GMA welder <p>Use only an approved GMA welder. Refer to BR-16-92-007, "Approved Welders" for a list of current approved GMA welders.</p> <ul style="list-style-type: none">Frame bench <p>The vehicle must be properly mounted on an approved frame bench to replace this component. Refer to BR-16-92-006, "Approved Frame Bench Systems" for a list of current approved bench repair systems.</p>



Prerequisites

1

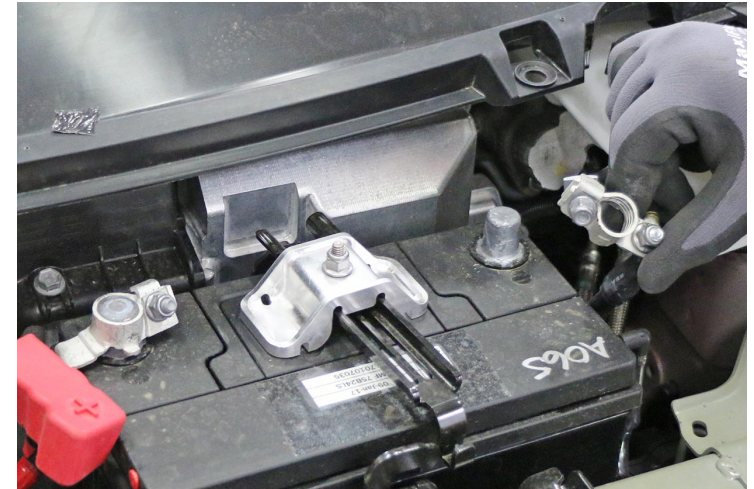
Disconnect 12V and high voltage power (refer to the appropriate section in [BR-17-17-004](#), "Disconnecting 12V and High Voltage Power on Model 3").



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.

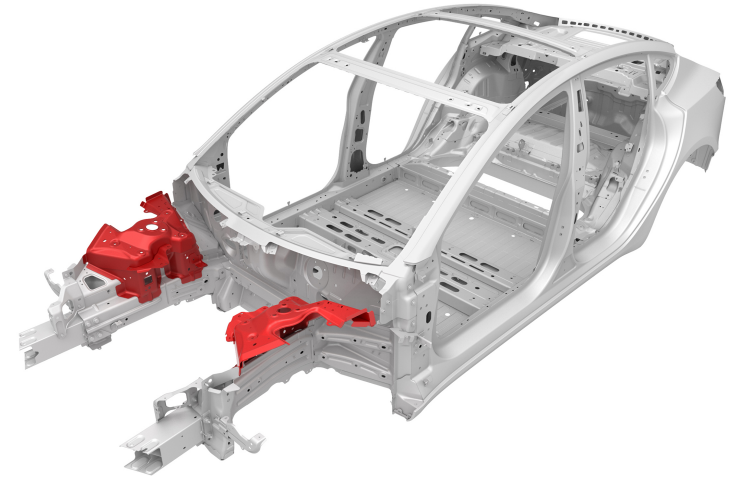




Prerequisites

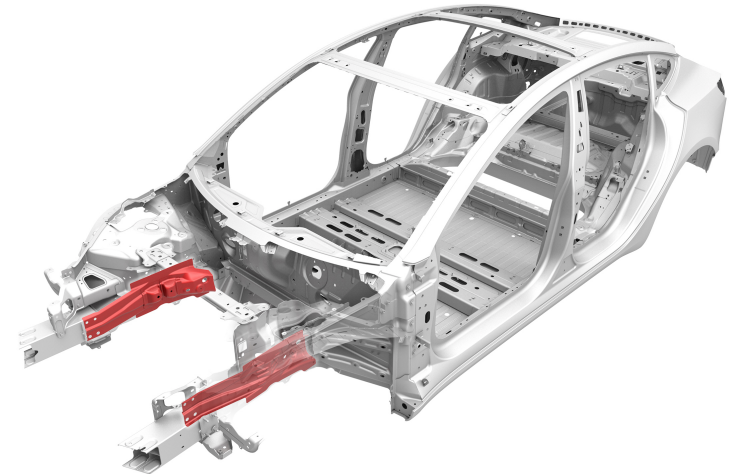
2

Remove the [Front Shock Tower](#).



3

Remove the [Front Frame Rail Inner Reinforcement \(Complete\)](#).





Removal

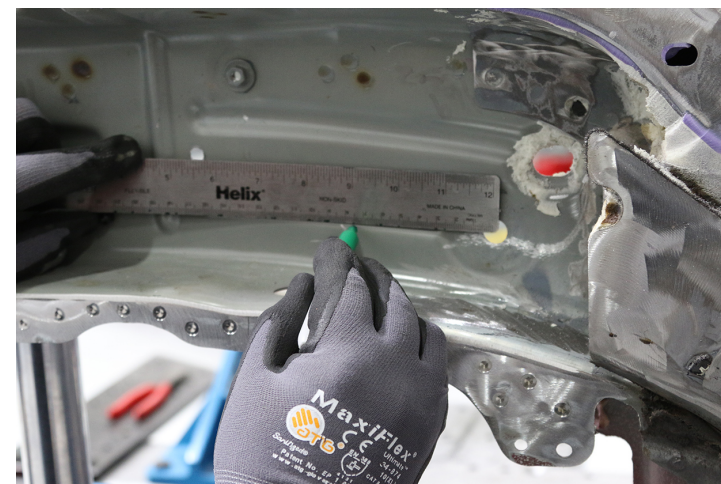
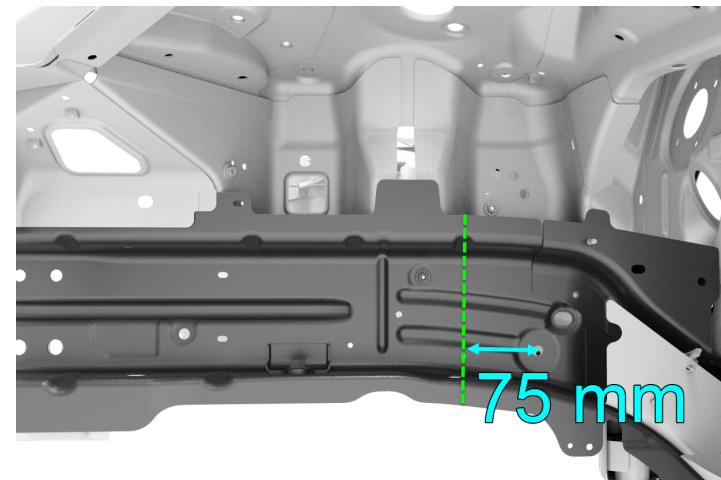
1 Remove the original component.

A Mark a cut line 75 mm (3-15/16 in) from the middle of the location hole on the original Front Frame Rail Inner.

 Cut Line



NOTE: If the damage does not extend beyond the cut line specified in the "Removal" section of the [Front Frame Rail Inner \(Small Front Section\)](#) procedure, discontinue this procedure and perform that procedure.





Removal

1 Remove the original component (continued).

B

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



CAUTION: Do not damage the surrounding components.



2 Remove the original section of the Front Frame Rail Inner.



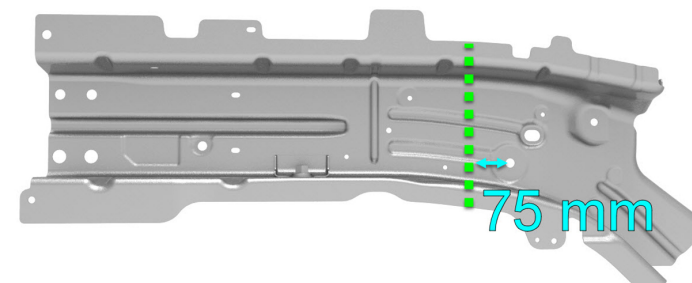


Replacement

- 1 Prepare the new Front Frame Rail Inner section for installation.

A Mark a cut line 75 mm (3-15/16 in) from the middle of the location hole shown on the first new Front Frame Rail Inner.

 Cut Line



B Cut the new component on the cut line marked in the previous substep.



NOTE: Leave 2 - 3 mm (3/32 - 1/8 in) of extra material to be trimmed at a later step.





Replacement

1 Prepare the new Front Frame Rail Inner section for installation (continued).

C Put the new section into position and align it to the frame bench jig points.



NOTE: If necessary, trim the new section to fit.



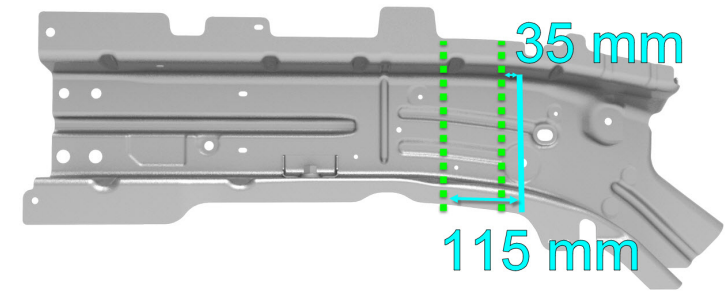


Replacement

2 Prepare the reinforcement plate.

A On the second Front Frame Rail Inner, mark cut lines 35 mm (1-3/8 in) and 115 mm (4-1/2 in) from the middle of the location hole shown.

 Cut Line



B Cut the second Front Frame Rail Inner on the cut lines marked in the previous substep to create an 80 mm (3-1/8 in) reinforcement plate.



Replacement

2 Prepare the reinforcement plate (continued).

C Cut the reinforcement plate on the cut lines shown.

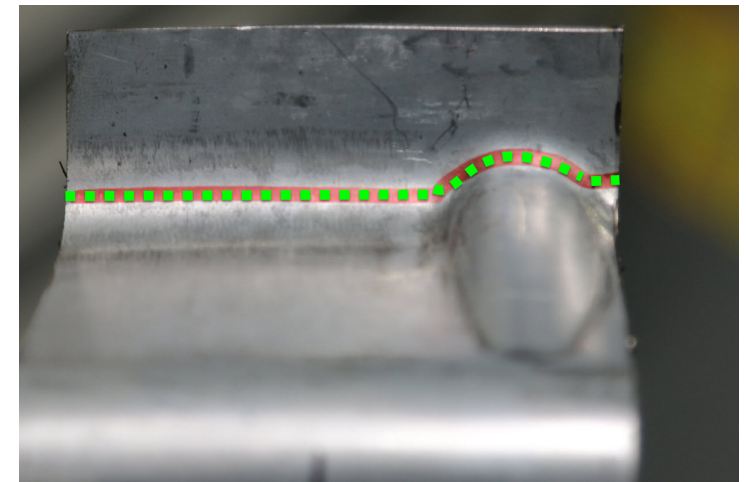
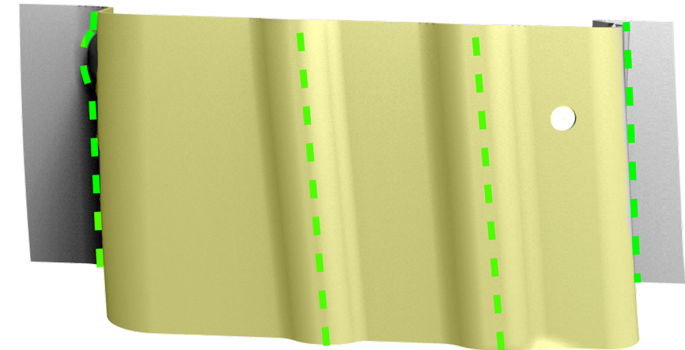
 Cut Line



NOTE: Discard the outer sections and save the 3 inner sections (highlighted in yellow).



NOTE: Cut around the indentation shown in the second image.





Replacement

- 2 Prepare the reinforcement plate (continued).
- C Cut the reinforcement plate on the cut lines shown (continued).



- D Put the reinforcement plate sections into position. If necessary, trim them to fit.





Replacement

2

Prepare the reinforcement plate (continued).

D

Put the reinforcement plate sections into position. If necessary, trim them to fit (continued).



E

Remove the reinforcement plate sections.



Replacement

2 Prepare the reinforcement plate (continued).

F Use a disc sander with a medium-abrasive surface conditioning disc to remove the e-coat on the reinforcement plate sections in the areas where the sections meet.



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



G Clean the sections of the reinforcement plate 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

2

Prepare the reinforcement plate (continued).

H

Put the reinforcement plate sections into position. Clamp them into place.



Replacement

2 Prepare the reinforcement plate (continued).

I

Tack weld the reinforcement plate sections together.



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.



NOTE: Do not fully weld the reinforcement plate sections together while the plate is on the vehicle.

J

Remove the reinforcement plate sections.





Replacement

2 Prepare the reinforcement plate (continued).

K

Weld the reinforcement plate sections together.



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 Bohler Union X96 welding wire and an approved GMA welder to perform steel GMA welding on high-strength steel and ultra high-strength steel components.

L

Use a grinding tool to grind down the welds.

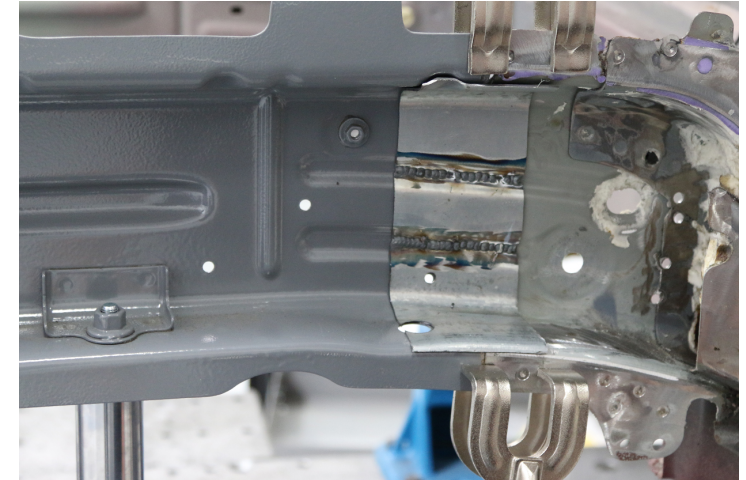




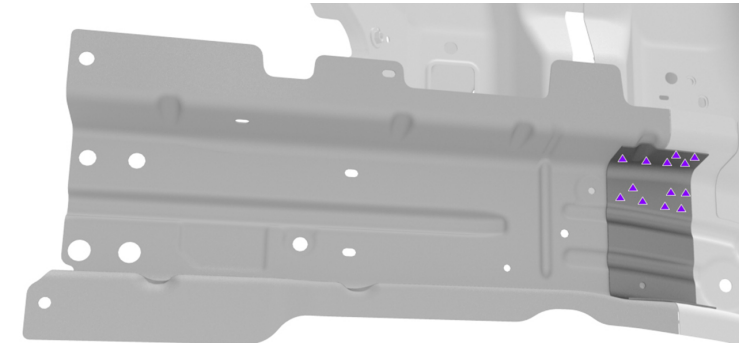
Replacement

3 Prepare for installation.

A Put the reinforcement plate into position. If necessary, trim it to fit.



B Mark the installation spot weld locations.
▲ Installation Spot Weld (x25)

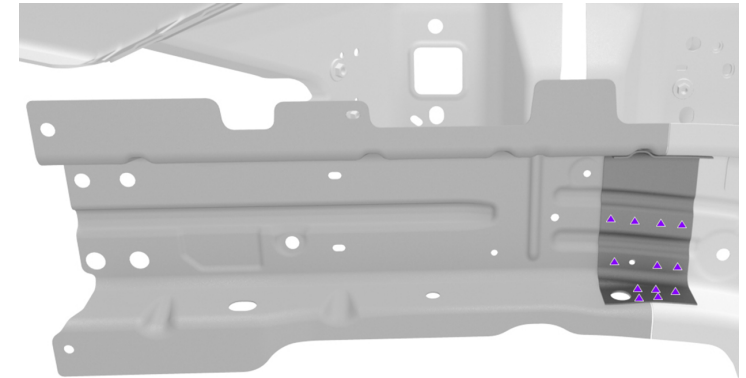




Replacement

3 Prepare for installation (continued).

B Mark the installation spot weld locations (continued).



C Mark the surface preparation boundary lines on the original Front Frame Rail Inner and the new Front Frame Rail Inner section.





Replacement

3


Prepare for installation (continued).

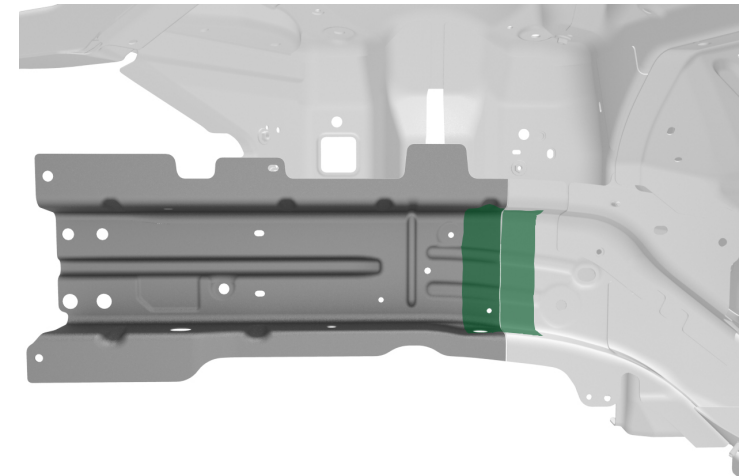
D

Remove the reinforcement plate.

E

Mark the bond path areas on the new Front Frame Rail Inner section, the inside surface of the reinforcement plate, and the vehicle.

 Steel-to-Steel Bond Path





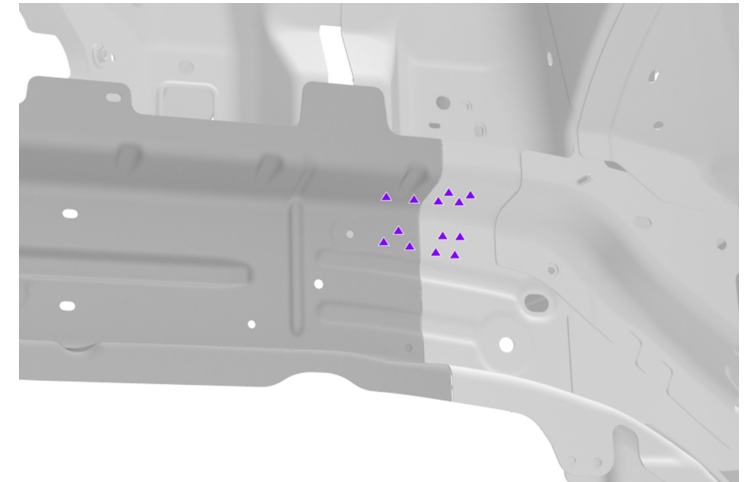
Replacement

4 Prepare the surfaces.

A Use a red Scotch-Brite pad or equivalent to scuff the e-coat on the new section, the reinforcement plate, and the vehicle in the bond path areas.

B Mark the installation spot weld locations on the new section, the reinforcement plate, and the vehicle.

▲ Installation Spot Weld

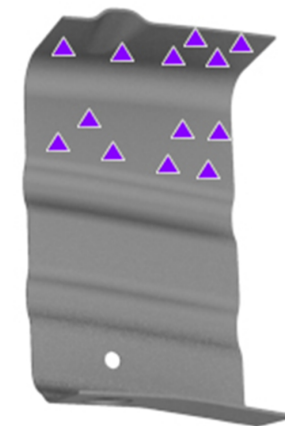
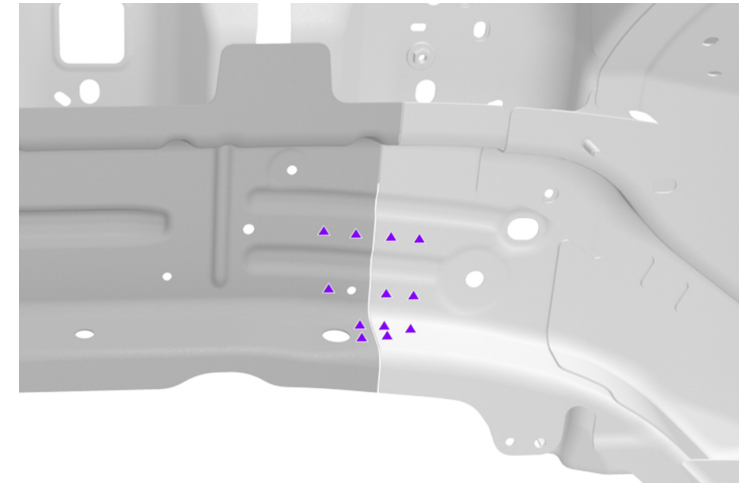




Replacement

4 Prepare the surfaces (continued).

B Mark the installation spot weld locations on the new section, the reinforcement plate, and the vehicle (continued).

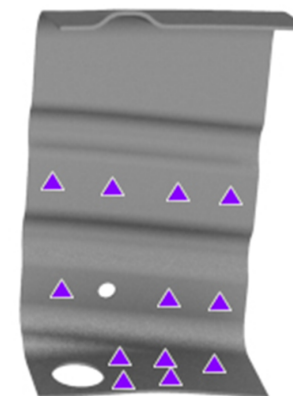




Replacement

4 Prepare the surfaces (continued).

B Mark the installation spot weld locations on the new section, the reinforcement plate, and the vehicle (continued).



C Use a disc sander with a medium-abrasive surface conditioning disc to remove the e-coat on the new section, the reinforcement plate, and the vehicle in the weld areas.





Replacement

4 Prepare the surfaces (continued).

D Clean all the bond path areas and weld areas on the new section, the reinforcement plate, 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.



5 Apply structural adhesive.

A Spread a thin coating of structural adhesive as a primer layer on the bond paths on the new section, the reinforcement plate, and the vehicle.



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





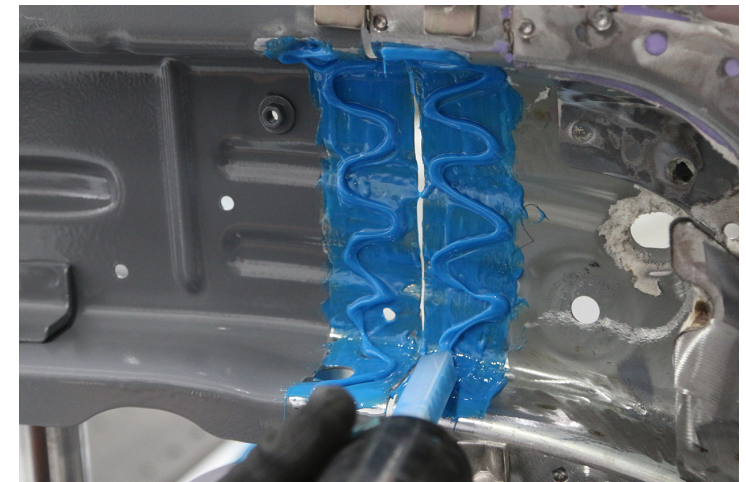
Replacement

5 Apply structural adhesive (continued).

A Spread a thin coating of structural adhesive as a primer layer on the bond paths on the new section, the reinforcement plate, and the vehicle (continued).



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





Replacement

6

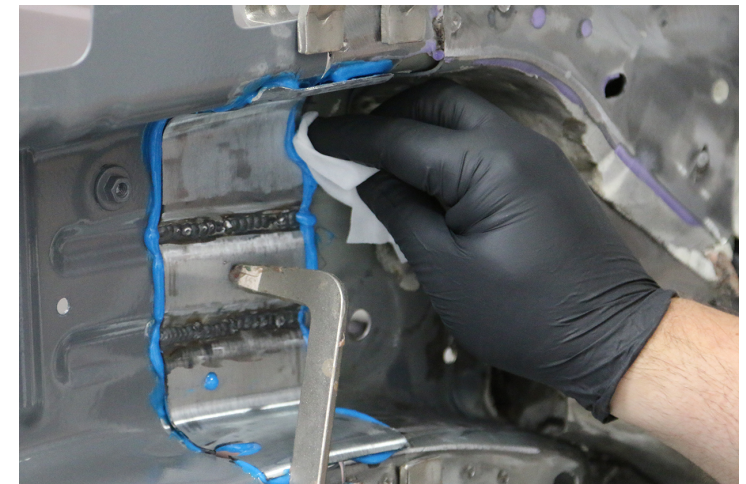
Install the new section.

A

Put the reinforcement plate into position and clamp it into place.

B

Wipe off any excess adhesive.





Replacement

6 Install the new section (continued).

C Perform resistance spot welding.
▲ Installation Spot Weld (x25)



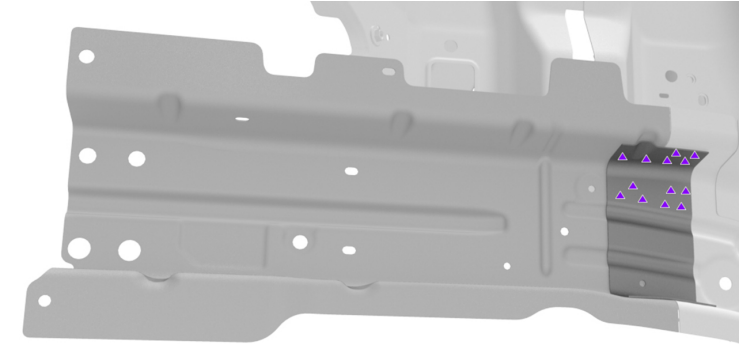
WARNING: Failure to follow all welding safety precautions, including the use of personal protective equipment, could result in serious injury or property damage. Only technicians who have successfully met Tesla's requirements for welding training are authorized to weld structural components on Tesla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



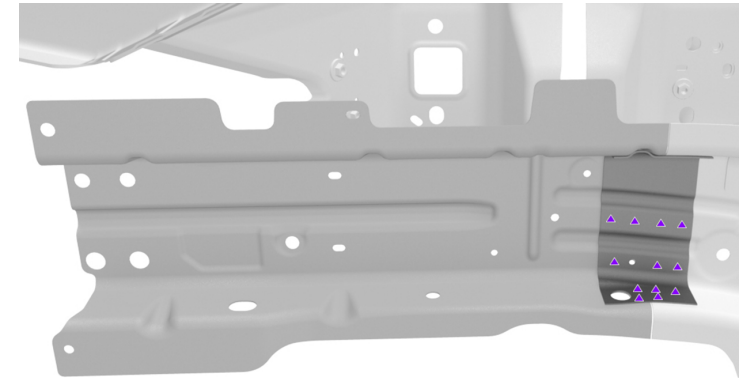
CAUTION: Use only insulated clamps within 200 mm (8 in) of resistance spot weld locations. Do not perform resistance spot welding when there is an uninsulated clamp within 200 mm (8 in) of the spot weld location.





Replacement

- 6 Install the new section (continued).
- C Perform resistance spot welding (continued).





Replacement

7 Install the new Front Inner Front Subframe Bracket.

A

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

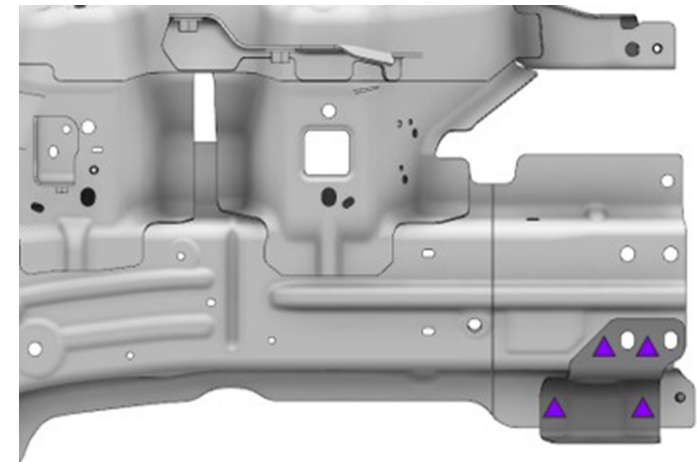


NOTE: Align the holes in the bracket with the holes in the Front Frame Rail Inner.

B

Mark the surface preparation boundary lines and installation spot weld locations.

▲ Installation Spot Weld (x4)





Replacement

- 7 Install the new Front Inner Front Subframe Bracket (continued).
- C Remove the new bracket.
- D Use a red Scotch-Brite pad or equivalent to scuff the e-coat on the new bracket and on the vehicle in the bond path areas.



Replacement

7 Install the new Front Inner Front Subframe Bracket (continued).

E

Use a disc sander with a medium-abrasive surface conditioning disc to remove the e-coat on the new bracket and on the vehicle in the weld areas.



NOTE: Use a belt sander with a medium-abrasive belt for any areas that cannot be reached with a disc sander.

F

Clean all the bond paths and weld areas on the new bracket 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.



Replacement

7 Install the new Front Inner Front Subframe Bracket (continued).

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

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



Replacement

7 Install the new Front Inner Front Subframe Bracket (continued).

I

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



NOTE: Align the holes in the bracket with the holes in the Front Frame Rail Inner.

J

Wipe off any excess adhesive.



Replacement

7 Install the new Front Inner Front Subframe Bracket (continued).

K

Perform resistance spot welding.

▲ Installation Spot Weld (x4)



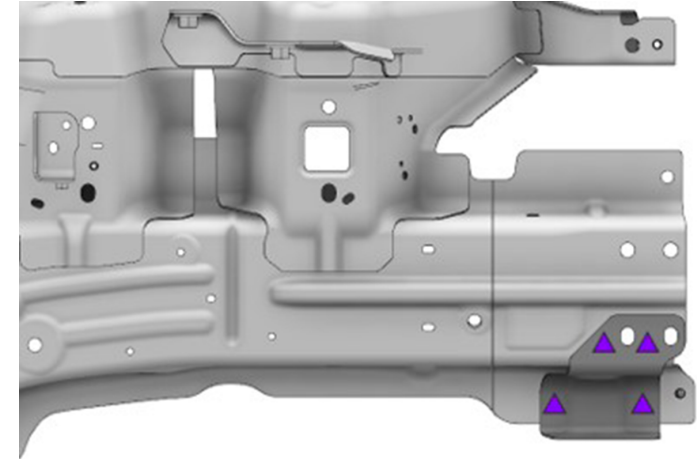
WARNING: Failure to follow all welding safety precautions, including the use of personal protective equipment, could result in serious injury or property damage. Only technicians who have successfully met Tesla's requirements for welding training are authorized to weld structural components on Tesla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

8

Remove any discoloration from the weld areas.

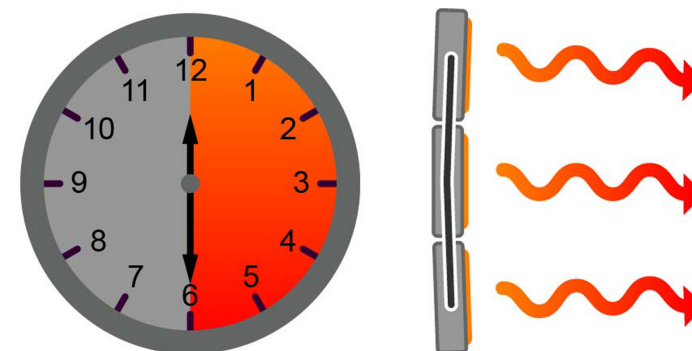


9

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



Replacement

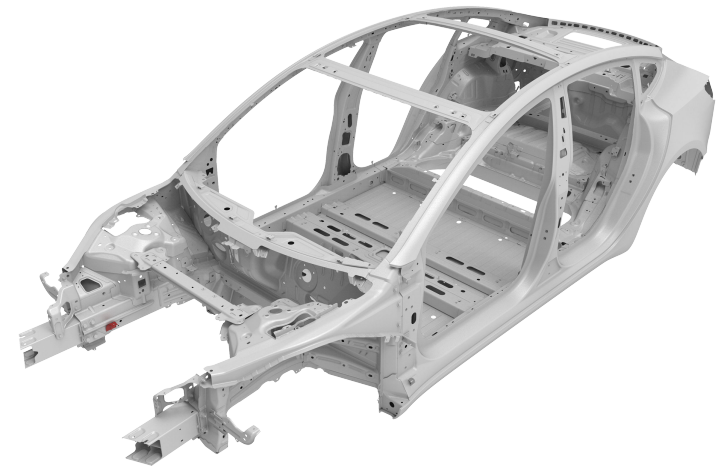
10

Prime any bare metal with a suitable corrosion-resistant epoxy primer.



11

Install a new [Frunk Bracket](#).

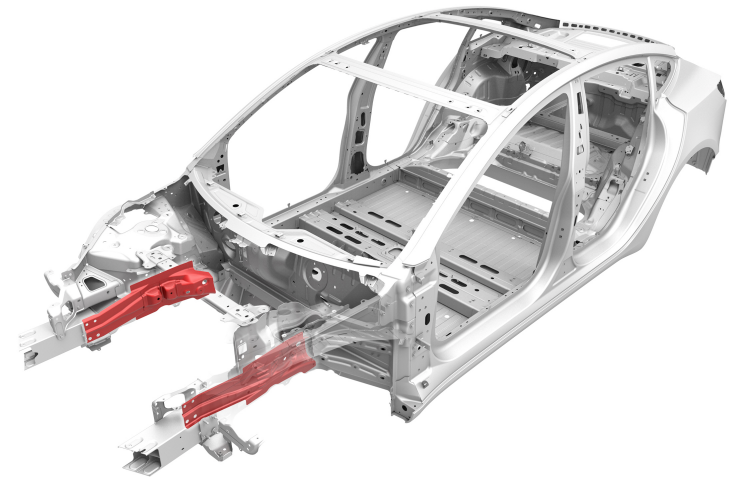




Replacement

12

Install the new [Front Frame Rail Inner Reinforcement \(Complete\)](#).



13

Install the new [Front Shock Tower](#).

