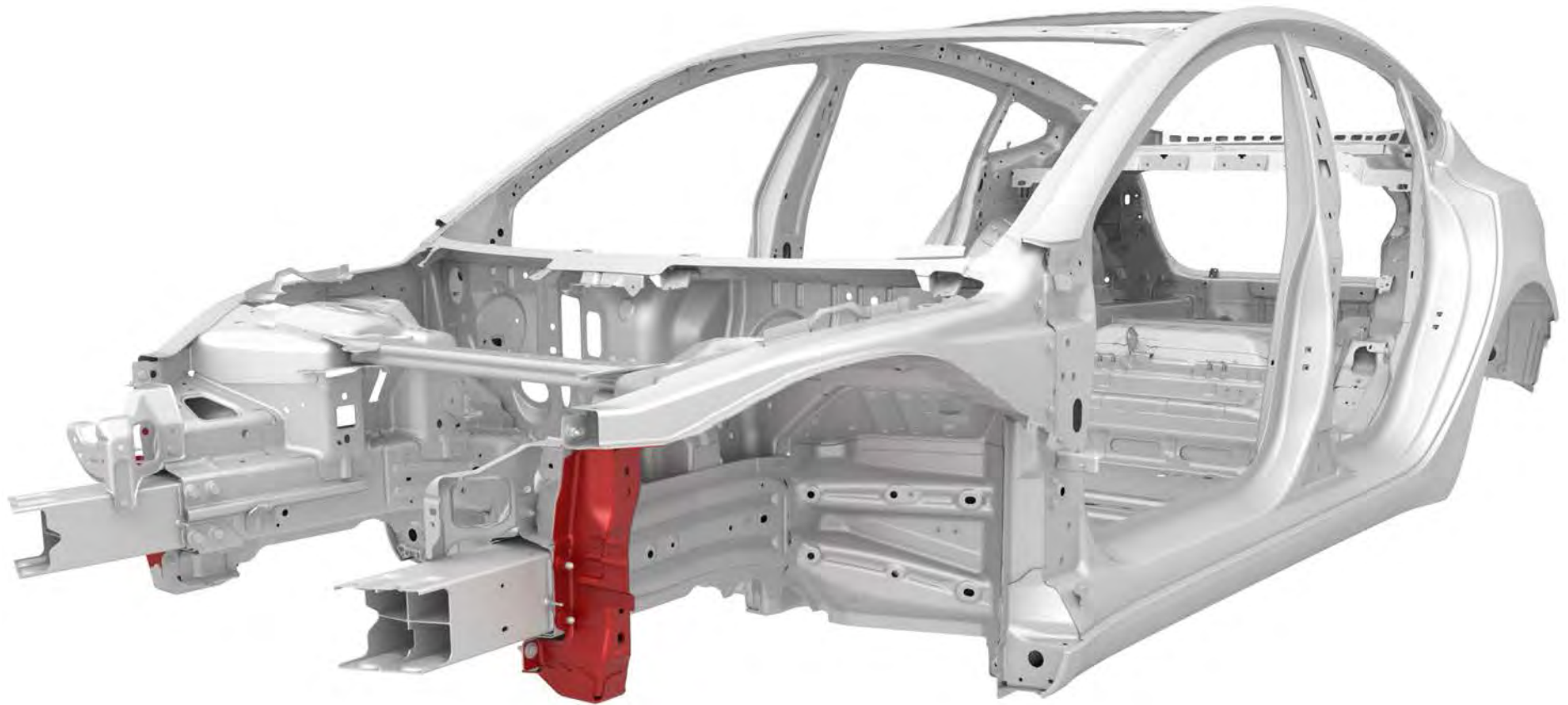




Shotgun Tower





Parts List

Quantity	Part Number	Description	Image / Notes
1	1080473-SO-A (LH) 1080474-SO-A (RH)	Shotgun Tower	
18 rivets needed; order 20 rivets	1454538-00-A	 High Strength Structural Rivet, 6.5 mm	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	—	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
This procedure shows a right-hand component being removed, and a left-hand component being installed. The procedure is identical for both sides of the vehicle. 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. The original Fender and Lamp Support Bracket can be removed as part of this procedure. The new Fender and Lamp Support Bracket is installed after this procedure has been completed.	 WARNING: Wear the appropriate personal protective equipment (PPE) when performing this procedure.  CAUTION: This procedure involves only steel components. Use the appropriate tools to avoid cross-contamination.	The special tools listed below are required to perform this procedure: - Resistance Spot Welder Use only an approved resistance spot welder. Refer to BR-16-92-007, "Approved Welders" for a list of current approved resistance spot welders. - GMA welder Use only an approved GMA welder. Refer to BR-16-92-007, "Approved Welders" for a list of current approved GMA welders. - Frame bench 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.



Prerequisites

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.





Removal

1 Remove the original component.

A

Identify the component materials in the repair area.

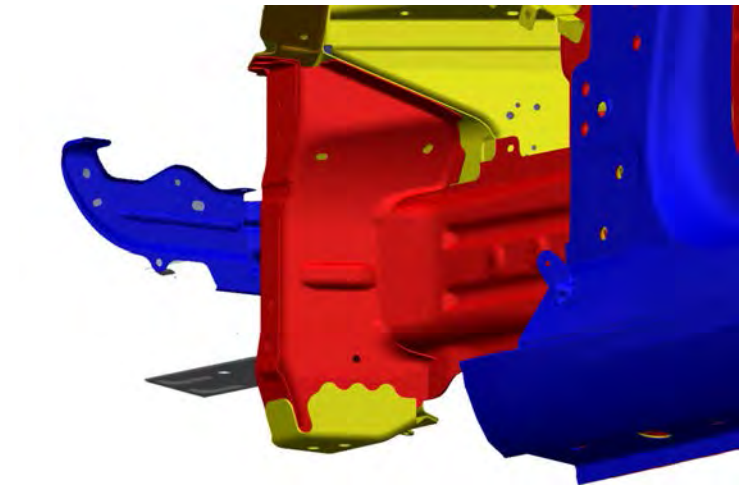
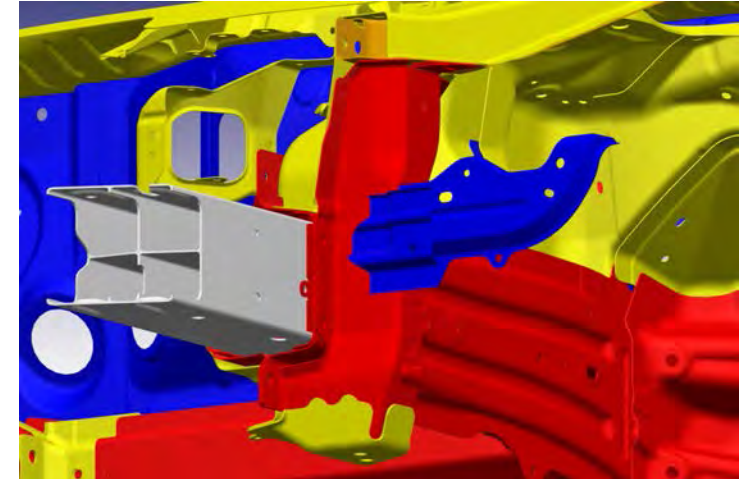
 High-Strength Steel

 Ultra High-Strength Steel

 Steel



NOTE: Refer to [BR-17-10-005](#), “Model 3 Body Structure Materials and Allowed Operations”, for information about the material each structural component is made from and the operations that are allowed on each type of material.





Removal

1 Remove the original component (continued).

B Remove the bolts that attach the crush can.

 Bolt, hex-head (x4)

C Remove the crush can.



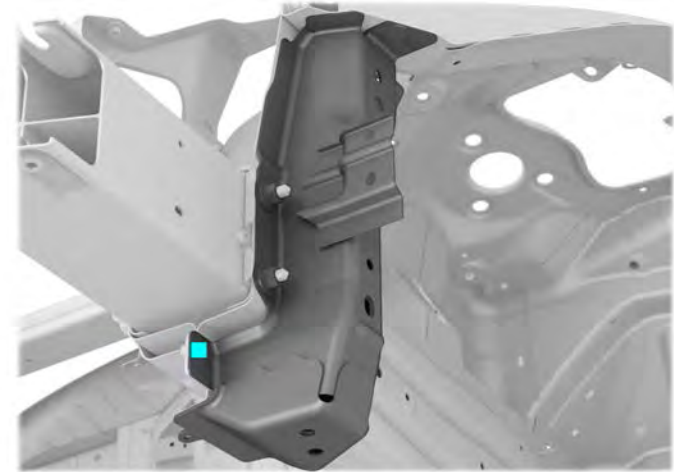


Removal

1 Remove the original component (continued).

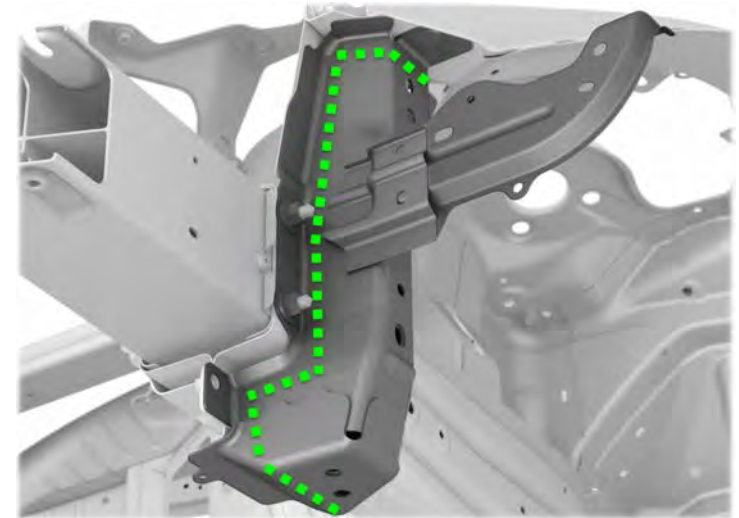
D Remove the bolt that attaches the Shotgun Tower to the Front Frame Rail Inner.

 Bolt, hex-head (x1)



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

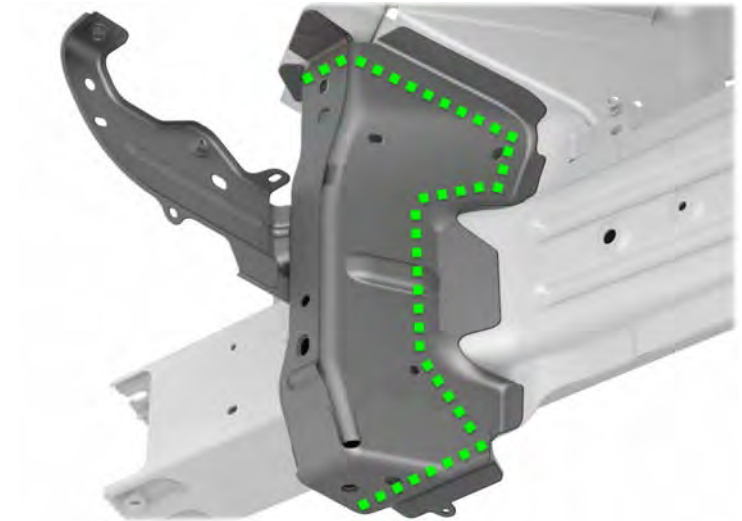
 Cut Line





Removal

- 1 Remove the original component (continued).
- E Mark cut lines to prepare to cut away the bulk of the original component (continued).





Removal

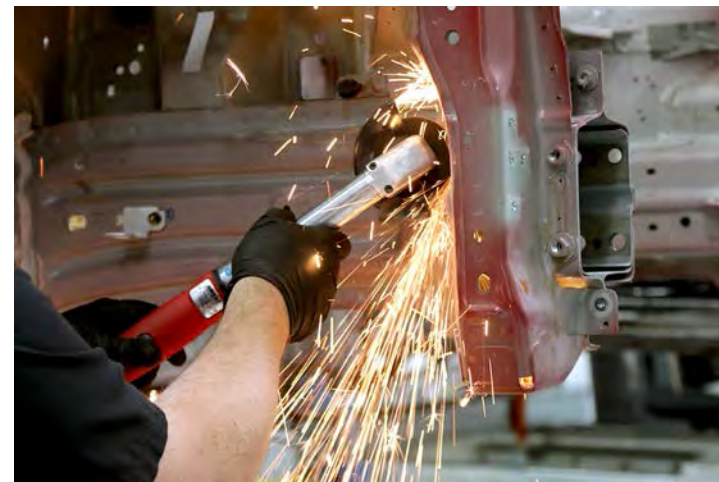
1 Remove the original component (continued).

F

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



CAUTION: Do not damage the surrounding components.



G

Remove the bulk of the original Shotgun Tower.





Removal

1 Remove the original component (continued).

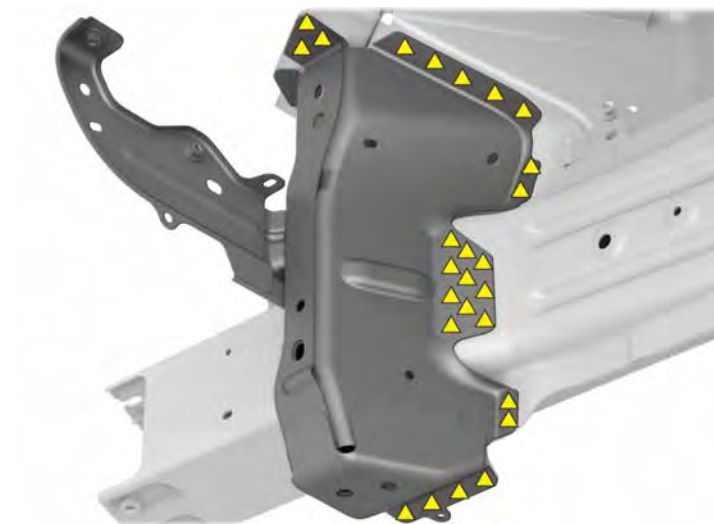
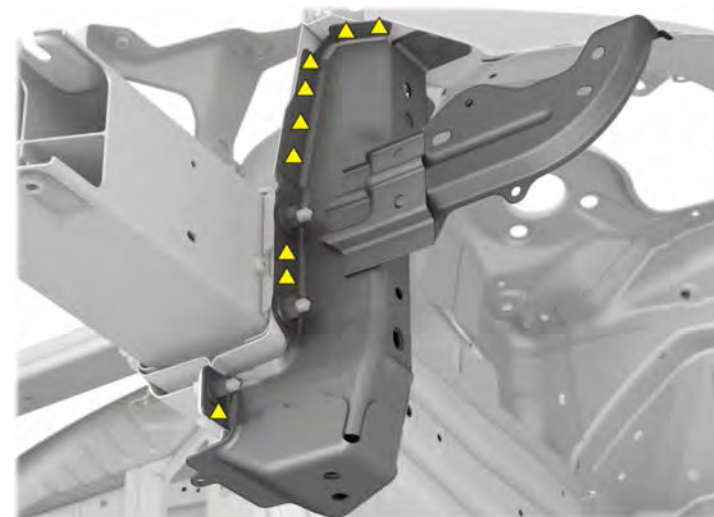
H

Use a drill with a spot weld bit to drill out the factory spot welds.

▲ Factory Spot Weld (x35)



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





Removal

1 Remove the original component (continued).

H Use a drill with a spot weld bit to drill out the factory spot welds (continued).



I Use a heat gun to heat the adhesive joints, and then use a hammer and chisel to remove the remaining pieces of 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.





Removal

1 Remove the original component (continued).

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





Removal

2

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.



Replacement

- 1 Prepare for installation.
 - A Put the new component into position and align it to the frame bench jig points.



- B Clamp the new component into place.



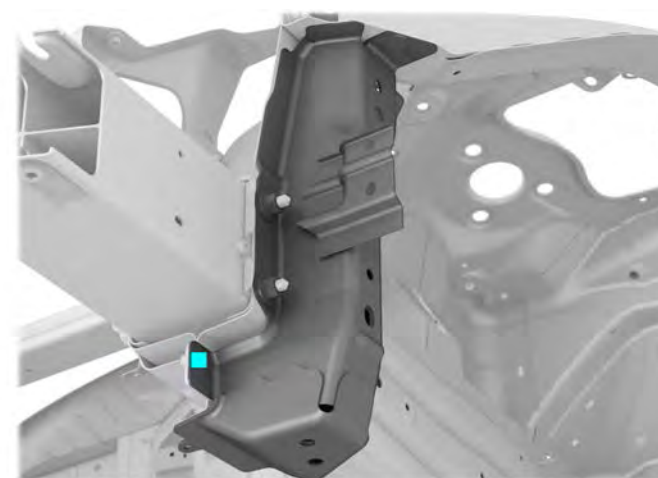


Replacement

1 Prepare for installation (continued).

C Temporarily install 2 of the original crush can bolts and the bolt that attaches the Shotgun Tower to the Front Frame Rail Inner, but do not torque them fully at this time.

■ Bolt, hex-head (x3)





Replacement

1 Prepare for installation (continued).

C Temporarily install 2 of the original crush can bolts and the bolt that attaches the Shotgun Tower to the Front Frame Rail Inner, but do not torque them fully at this time (continued).





Replacement

1 Prepare for installation (continued).

D

Mark the fastener locations on the new component.

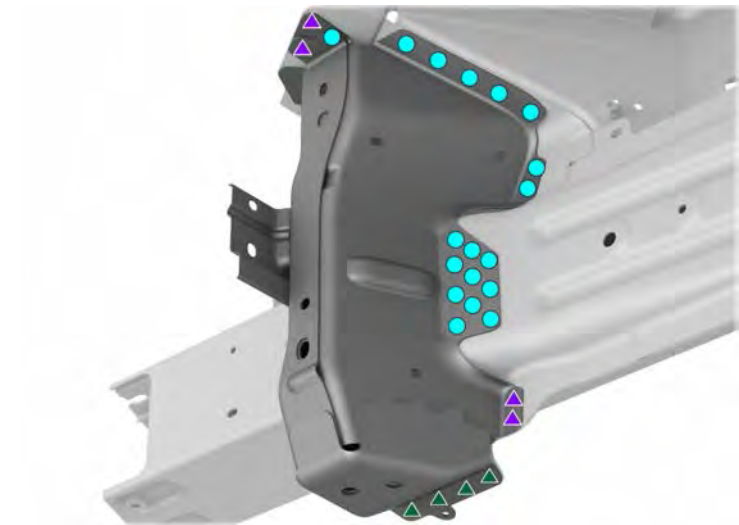
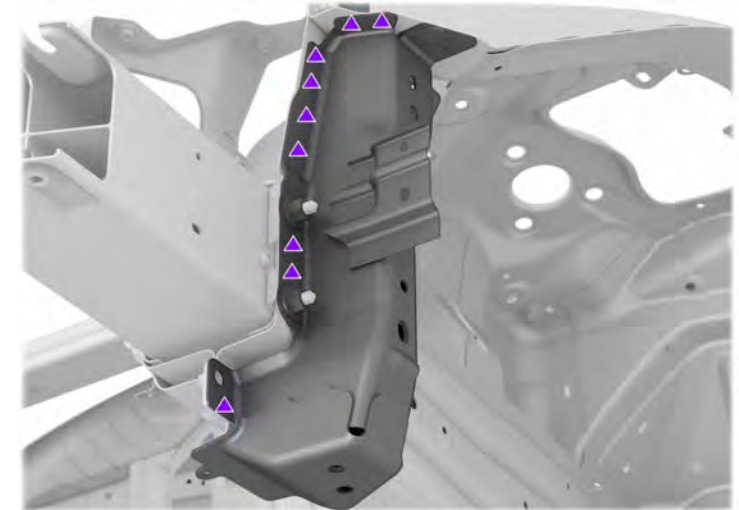
● High Strength Structural Rivet, 6.5 mm (x18)

▲ Steel Plug Weld (x4)

▲ Installation Spot Weld (x13)



NOTE: If your approved resistance spot welder can access any of the locations where this procedure specifies a rivet, an installation spot weld is recommended in place of the rivet.





Replacement

1 Prepare for installation (continued).

D Mark the fastener locations on the new component (continued).

E Use a drill with a 6.7 mm (17/64 in) bit to drill holes for structural rivets.



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



TIP: The Shotgun Tower is made from ultra high-strength steel. Start drilling the hole with a 4.8 mm (3/16 in) bit, and then use a 6.7 mm (17/64 in) bit to enlarge the hole.





Replacement

1 Prepare for installation (continued).

E Use a drill with a 6.7 mm (17/64 in) bit to drill holes for structural rivets (continued).



F Mark the surface preparation boundary lines on the new component and on the vehicle.



Replacement

1 Prepare for installation (continued).

G Remove the new component.

H Use a drill with a 10 mm (13/32 in) bit to drill holes for plug welds in the new component.





Replacement

- 1 Prepare for installation (continued).
 - I Mark the bond path areas on the new component and the vehicle. These areas will be prepared for bonding in the next step.

 Steel-to-Steel Bond Path



- 2 Prepare the surfaces.
 - A Use a red Scotch-Brite pad or equivalent to scuff the e-coat on the new component and on the vehicle in the bond path areas.



Replacement

2 Prepare the surfaces (continued).

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

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



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





Replacement

2 Prepare the surfaces (continued).

D Clean all the bond paths and weld areas 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.



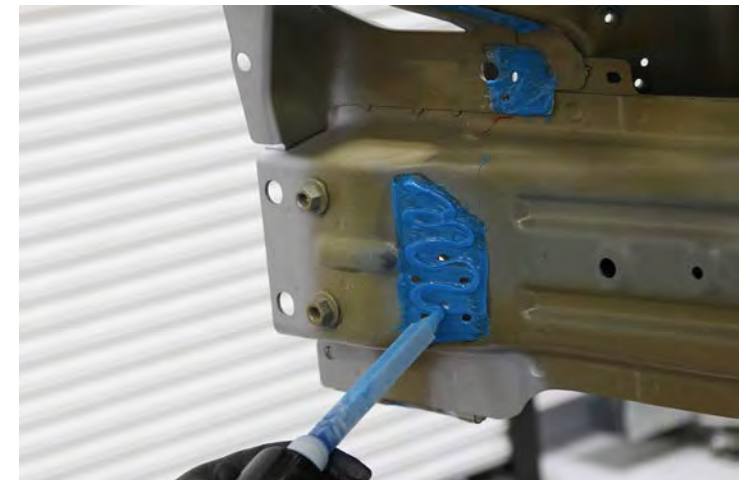


Replacement

3 Apply structural adhesive (continued).

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

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





Replacement

4 Install the new component.

A Put the new component into position and align it to the frame bench jig points.

B Install 2 of the original crush can bolts and the bolt that attaches the Shotgun Tower to the Front Frame Rail Inner, but do not torque them fully at this time.

■ Bolt, hex-head (x3)

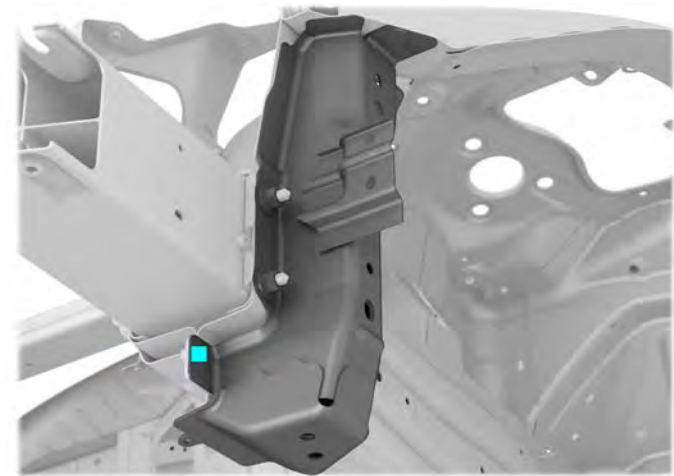




Replacement

4 Install the new component (continued).

B Install 2 of the original crush can bolts and the bolt that attaches the Shotgun Tower to the Front Frame Rail Inner, but do not torque them fully at this time (continued).





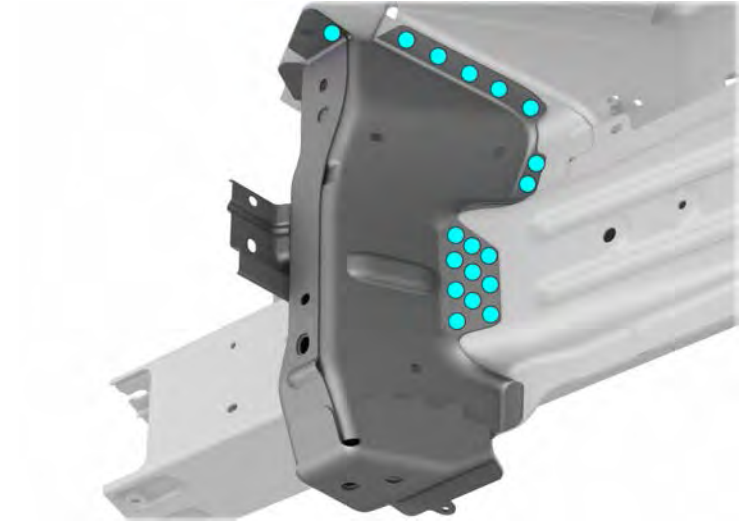
Replacement

4 Install the new component (continued).

C Insert the structural rivets.

● High Strength Structural Rivet, 6.5 mm (x18)

D Install the structural rivets.





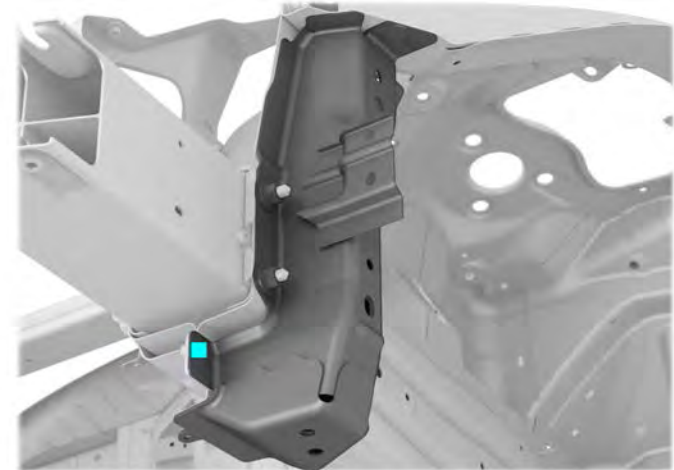
Replacement

4 Install the new component (continued).

E Torque the bolt that attaches the Shotgun Tower to the Front Frame Rail Inner to 35 Nm (26 ft lbs).

■ Bolt, hex-head (x1)

F Wipe off any excess adhesive.





Replacement

4 Install the new component (continued).

G Perform resistance spot welding.
▲ Installation Spot Weld (x13)



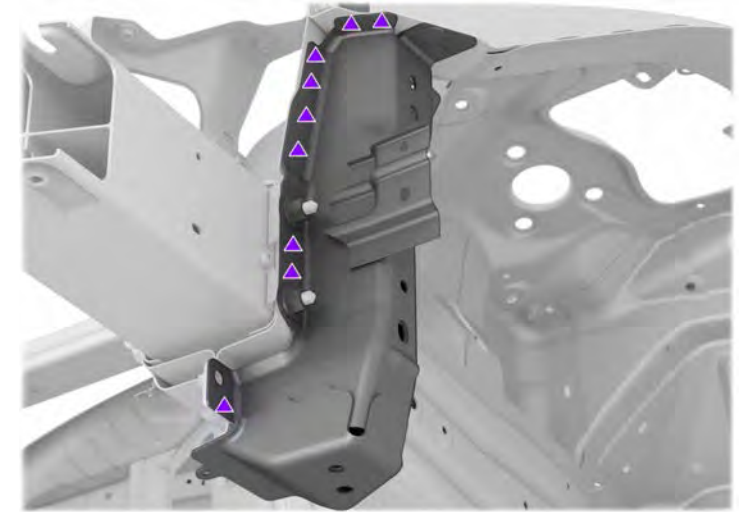
WARNING: Failure to follow all welding safety precautions, including the use of personal protective equipment, could result in serious injury or property damage. Only technicians who have successfully met Tesla's requirements for welding training are authorized to weld structural components on Tesla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



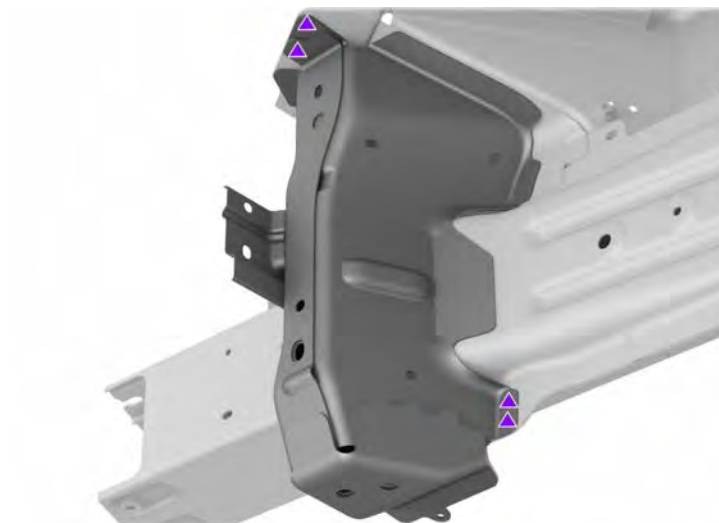
CAUTION: Use only insulated clamps within 200 mm (8 in) of resistance spot weld locations. Do not perform resistance spot welding when there is an uninsulated clamp within 200 mm (8 in) of the spot weld location.





Replacement

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





Replacement

4 Install the new component (continued).

H Remove any discoloration from the weld areas.



Replacement

4 Install the new component (continued).

I

Perform plug welding.

▲ Steel Plug 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.



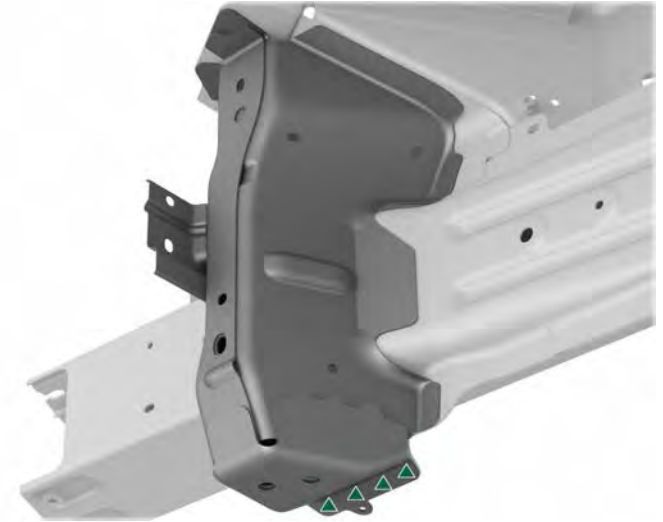
WARNING: To maintain vehicle crash integrity, use only Bohler Union X96 welding wire and an approved GMA welder to perform steel GMA welding on high-strength steel and ultra high-strength steel components.



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.

J

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





Replacement

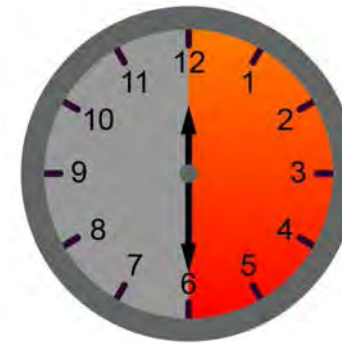
- 4 Install the new component (continued).
- K Remove the crush can bolts.

L

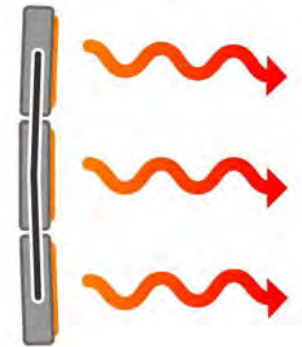
Bake the structural adhesive so that the bonded panels reach a temperature of 60°C–80°C (140°F–176°F) for at least 30 minutes to achieve full strength.



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

5

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.



6

Install the crush can.

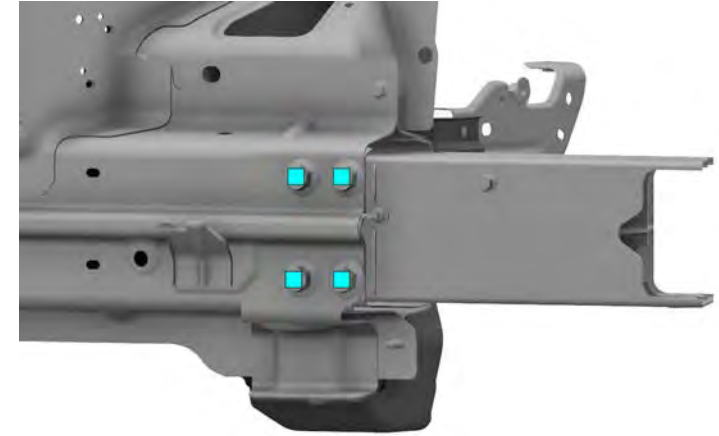
A

Put the crush can into position.



Replacement

- 6 Install the crush can (continued).
- B Install the bolts and torque them to 90 Nm (66 ft lbs).
- Bolt, hex-head (x4)



- 7 Install the new [Fender and Lamp Support Bracket](#).

