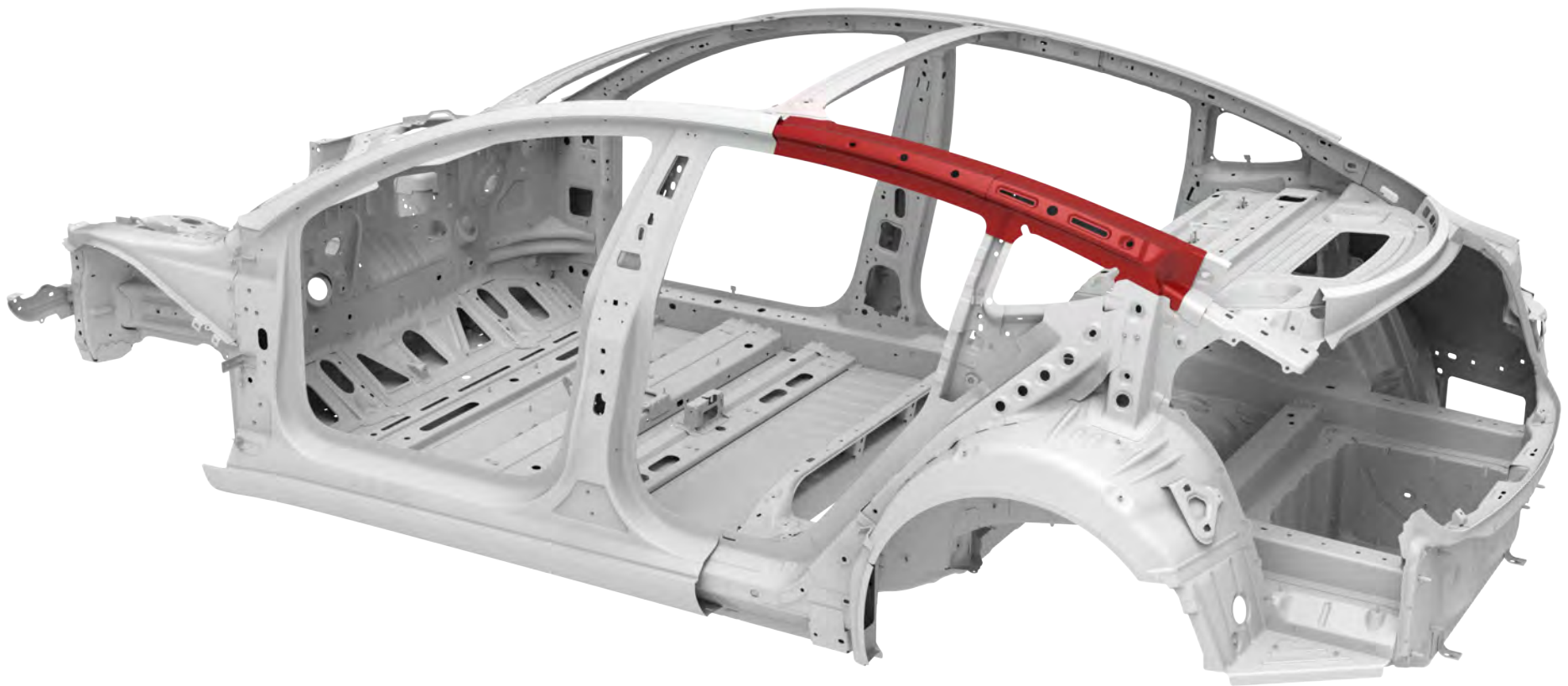




Roof Rail Extension





Parts List

Quantity	Part Number	Description	Image / Notes
1	1073689-S0-A (LH) 1073690-S0-A (RH)	M3 ASY, ROOF RAIL EXTN PNL	
1 rivet needed; order 10 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.
2 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	—	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
This procedure is for the left-hand component; the procedure is identical for the right-hand component.	 WARNING: Wear the appropriate personal protective equipment (PPE) when performing this procedure.  CAUTION: This procedure involves both steel and aluminum components. Use the appropriate tools at each step to avoid cross-contamination. Refer to BR-17-10-005, "Model 3 Body Structure Materials and Allowed Operations", for more information.	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. - Microstop Countersink kit



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

Remove the [Quarter Outer Complete](#).

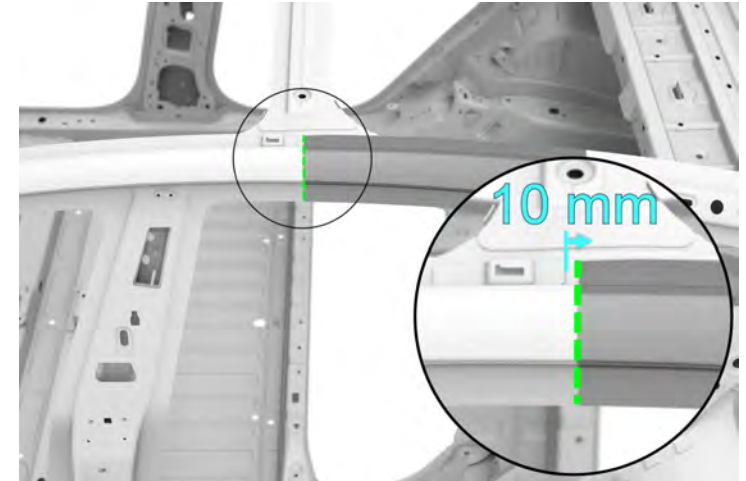




Removal

1 Remove additional material from Bodyside Outer Panel.

A Mark a cut line on the Bodyside Outer Panel 10 mm to the rear of the Roof Rack Bracket.



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



CAUTION: Do not damage the surrounding components.



Removal

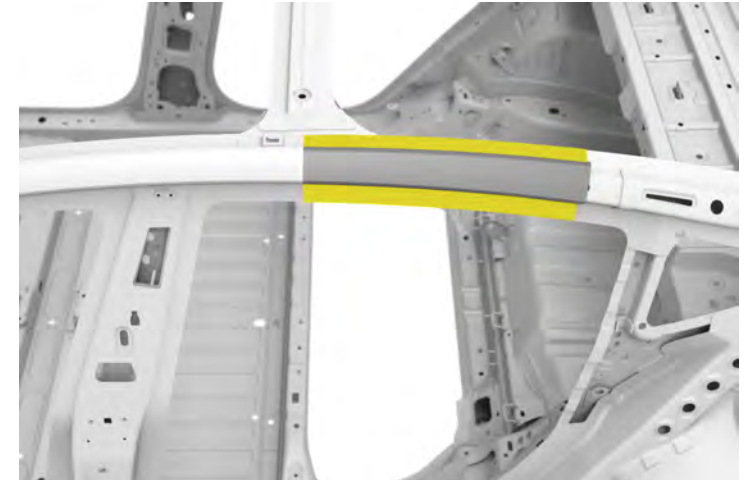
1 Remove additional material from Bodyside Outer Panel (continued).

C Use a drill with a spot weld bit to drill out the factory spot welds.
Use a belt sander to sand down any factory spot welds that cannot be reached with a drill.

 Factory Spot Weld Areas



NOTE: The indicated area includes a combination of spot welds and laser welds.





Removal

1 Remove additional material from Bodyside Outer Panel (continued).

D 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.



NOTE: Set the Bodyside Outer remnant aside for use as a backing plate when reinstalling the Quarter Outer Complete after completing this repair.



Removal

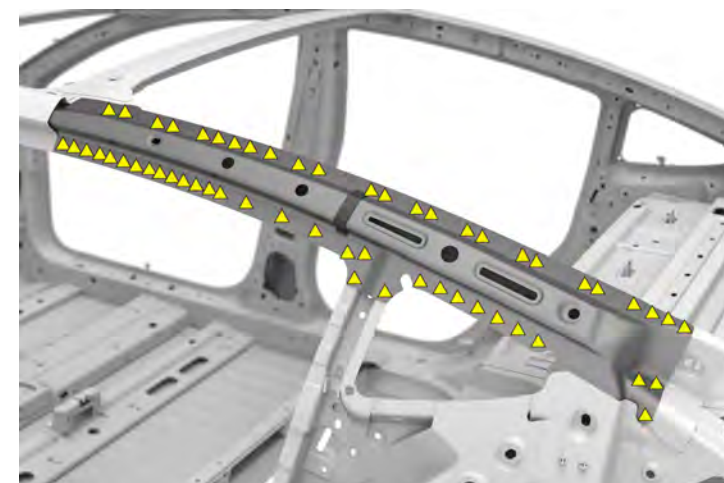
2 Remove the original component.

A Use a drill with a spot weld bit to drill out the factory spot welds. Use a belt sander to sand down any factory spot welds that cannot be reached with a drill.

▲ Factory Spot Weld (x56)



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



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B 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).

C 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.



Replacement

1

Prepare for installation.

A

Put the new component into position and secure it in place.

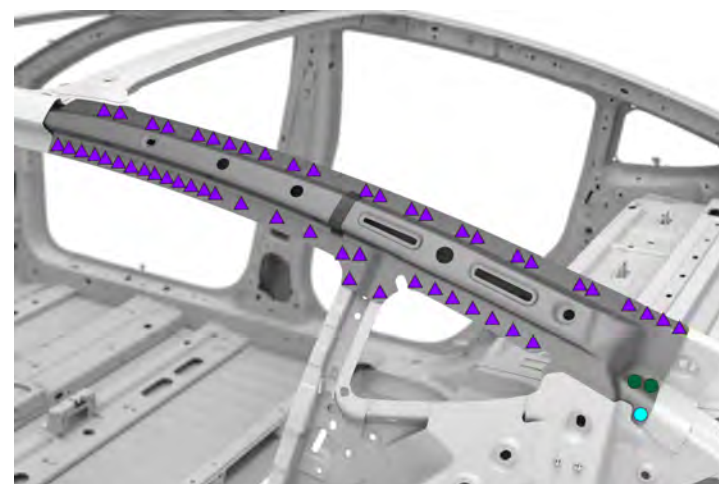
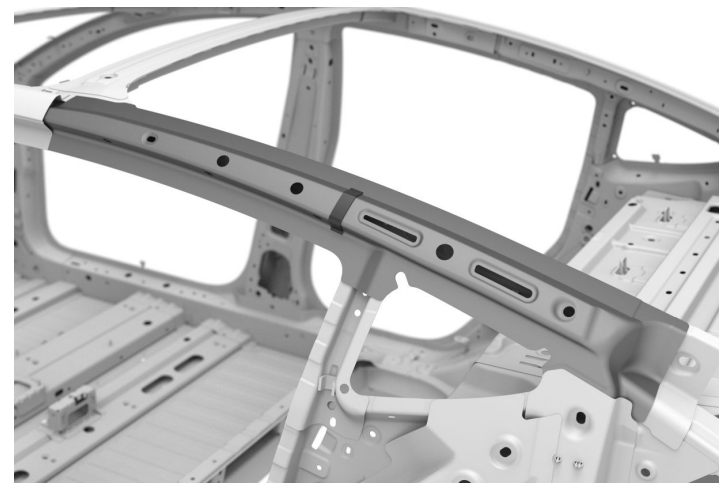
B

Mark the fastener locations on the new component.

● High Strength Structural Rivet, 6.5 mm (x1)

● Countersunk Rivet, 4.8 mm Short (x2)

▲ Installation Spot Weld (x53)

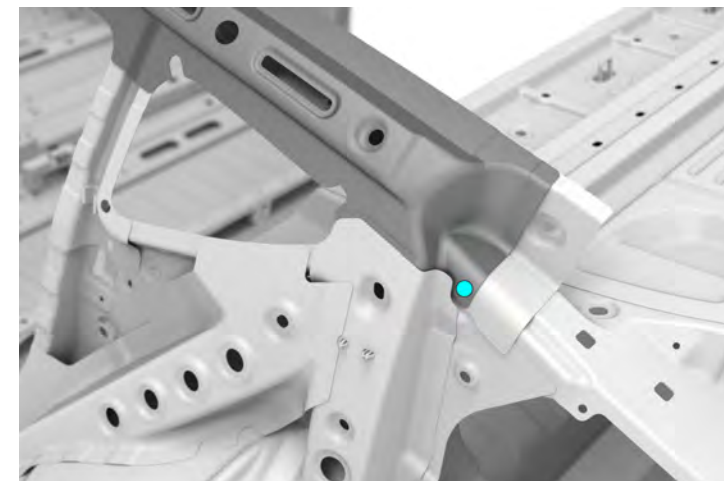




Replacement

1 Prepare for installation (continued).

C Drill 6.7 mm holes for structural rivets.
● High Strength Structural Rivet, 6.5 mm (x1)



D Drill 4.8 mm holes for countersunk rivets.
● Countersunk Rivet, 4.8 mm Short (x2)



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.





Replacement

1 Prepare for installation (continued).

E 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.

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



Replacement

1 Prepare for installation (continued).

G Remove the new component.

2 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

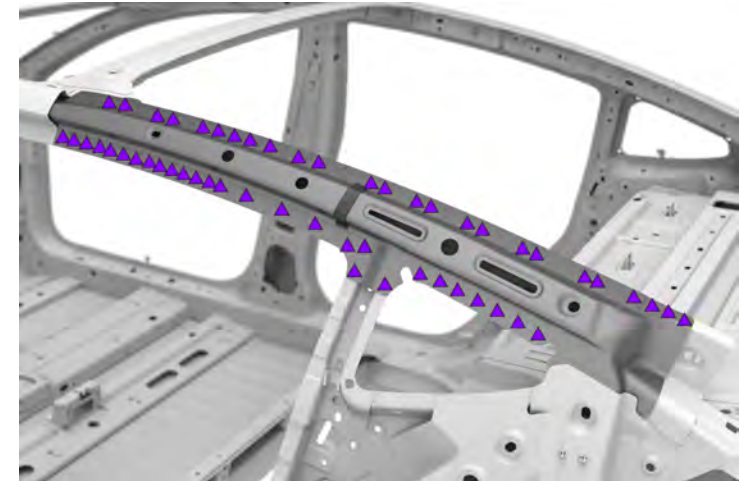
2 Prepare the surfaces (continued).

B Use a disc sander with a medium-abrasive surface conditioning disc to remove the e-coat from the weld areas of the new components 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 (x53)



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



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

3 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.



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.

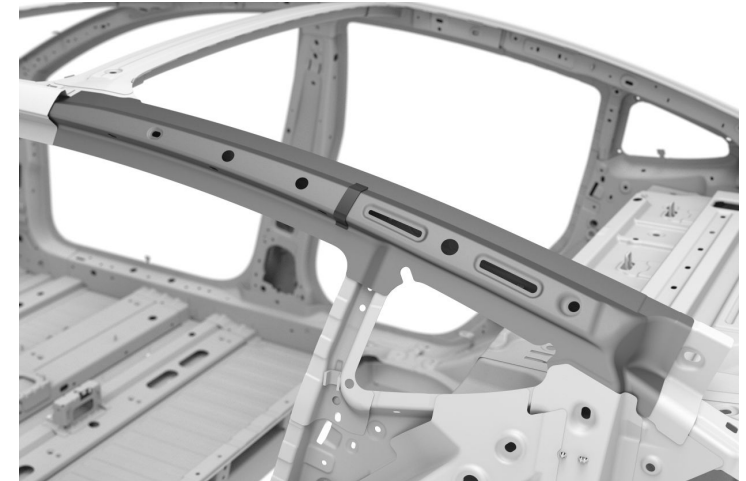


Replacement

4 Install the new component.

A Put the new component into position and secure it in place.

B Insert the rivets.
● High Strength Structural Rivet, 6.5 mm (x1)
● Countersunk Rivet, 4.8 mm Short (x2)





Replacement

4 Install the new component (continued).

C Install the rivets.

D Clamp all bonded areas that are not secured with a fastener.



Replacement

4 Install the new component (continued).

E Wipe off any excess adhesive.

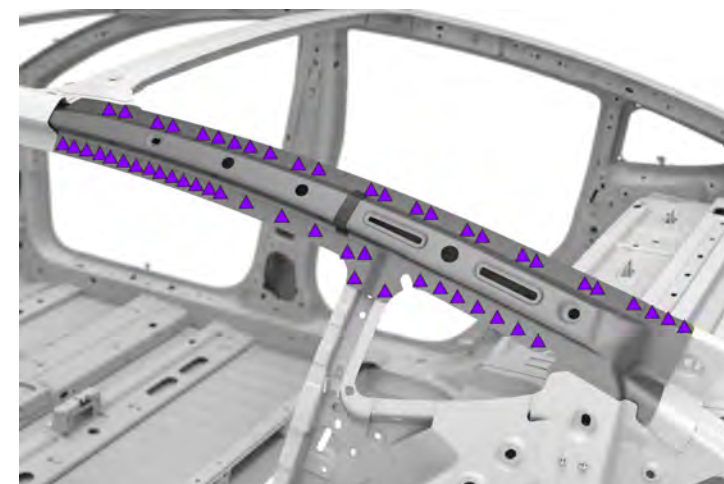
F Perform resistance spot welding.
▲ Installation Spot Weld (x53)



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.





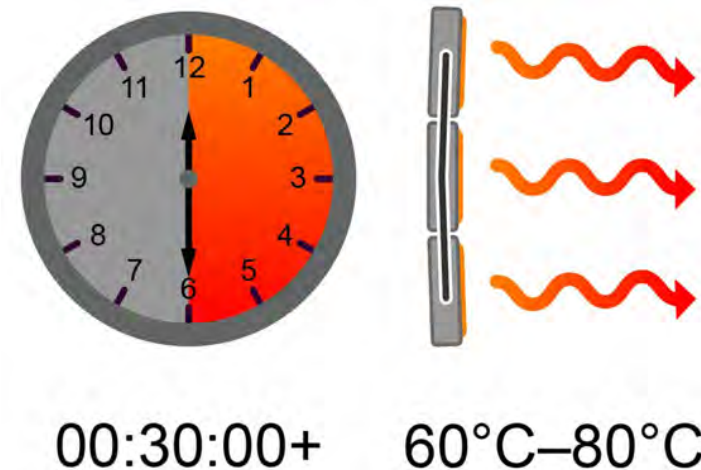
Replacement

4 Install the new component (continued).

G 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.



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



Replacement

6



Install the [Quarter Outer Complete](#).

NOTE: Since additional material was removed from the Bodyside Outer, the upper butt joint will be located further forward than what is indicated in the Quarter Outer Complete procedure.

Use the Bodyside Outer roof rail remnant removed from earlier in this procedure to create the butt joint backing plate.

When performing resistance spot welding during installation, add additional spot welds in factory locations.

