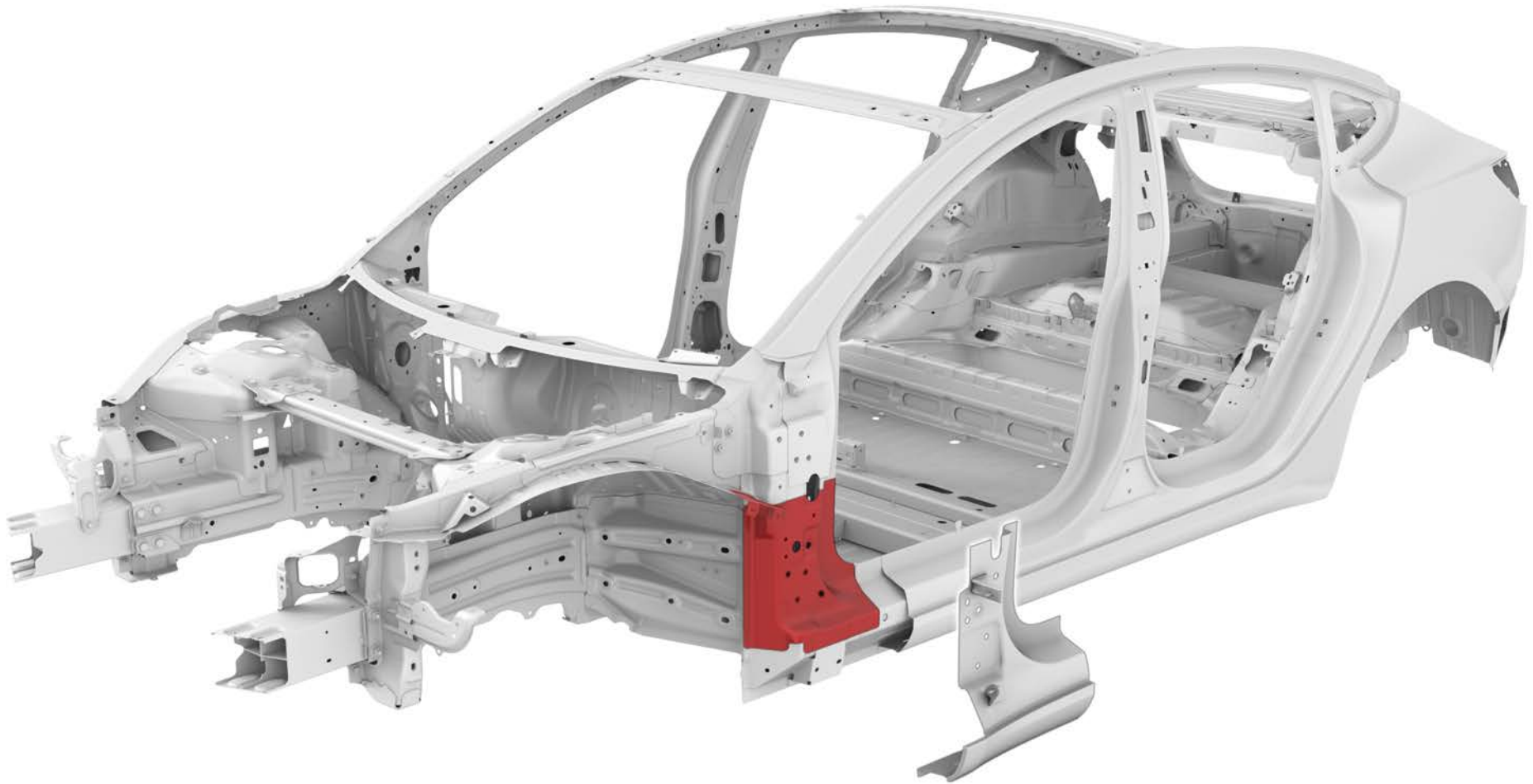


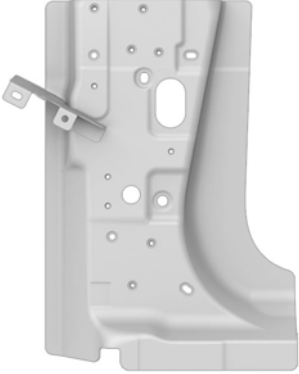
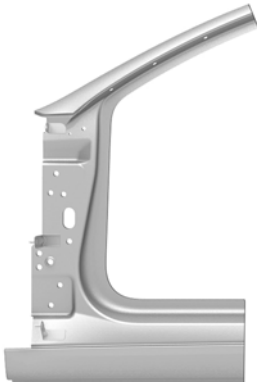


## Hinge Pillar (Section)






## Parts List

Quantity	Part Number	Description	Image / Notes
2	1080021-S0-A (LH) 1080022-S0-A (RH)	Hinge Pillar Assembly	  One Hinge Pillar Assembly is needed for replacement and one is needed to make a backing plate.
1	1073679-S0-A (LH) 1073680-S0-A (RH)	A-Pillar Body Side Outer	
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.
9 rivets needed; order 10 rivets	1069327-00-A	○ Structural Countersunk Rivet, 6.5 mm	All rivets come in packages of 10; order all rivets in multiples of 10.





## 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.
1	—	Weld-Through Primer	Source locally; not available from Tesla.
1	—	Corrosion-Resistant Epoxy Primer	Source locally; not available from Tesla.
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>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>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 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"><li>• Microstop Countersink kit</li><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> <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>• Frame bench</li></ul> <p>The vehicle must be properly mounted on an approved frame bench to replace this component. Refer to <a href="#">BR-16-92-006</a>, "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.

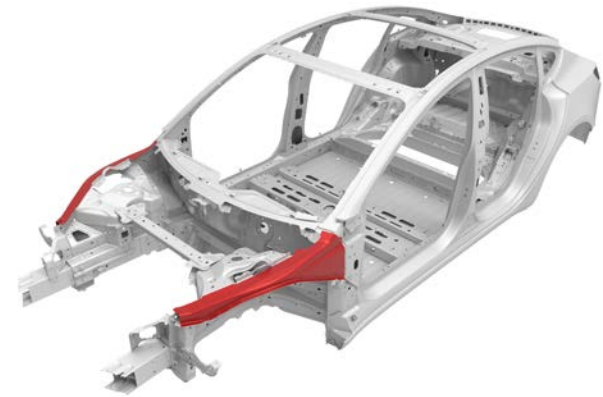




## Prerequisites

2

Remove the [Shotgun Outer](#).



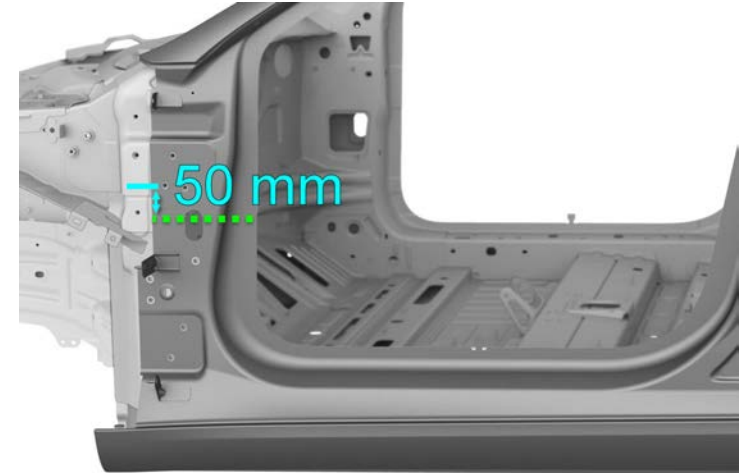


## Removal

1 Remove the lower portion of the Body Side Outer in the A-Pillar area.

A Mark a cut line in the A-Pillar area 50 mm (2 in) down from the lower edge of the bolt hole shown.

 Cut Line







## Removal

1 Remove the lower portion of the Body Side Outer in the A-Pillar area (continued).

B Mark a cut line on the lower portion of the Body Side Outer, depending on the extent of the damage to the Body Side Outer.

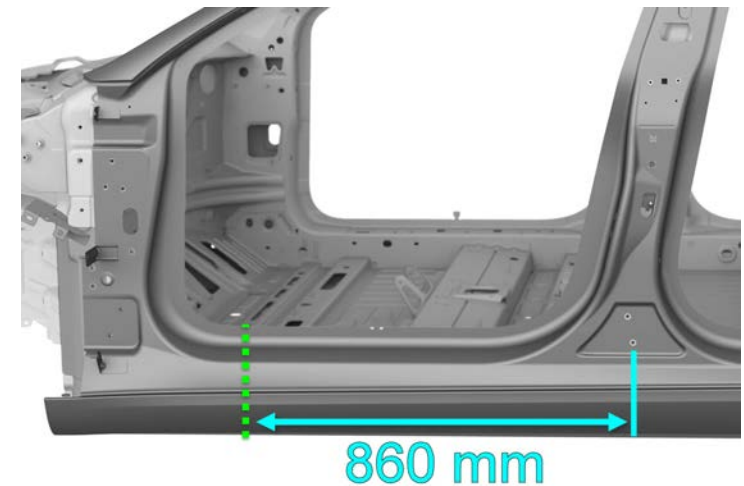
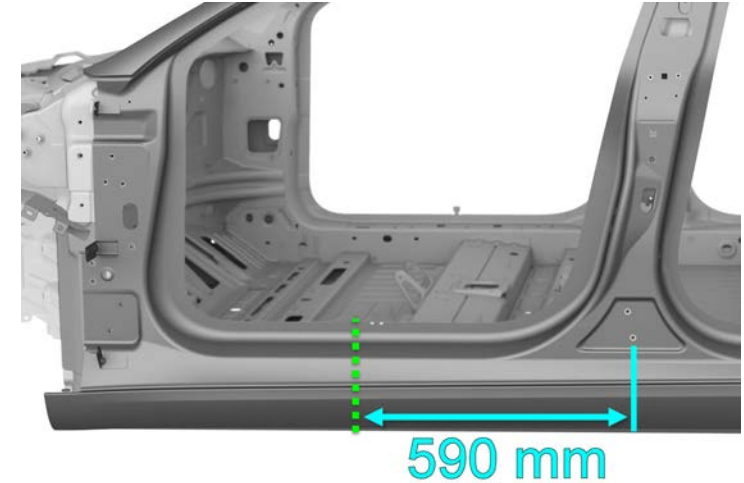
- The largest section of the Body Side Outer that can be removed is cutting 590 mm (23-1/4 in) from the forward edge of the door hinge bolt shown.
- The smallest section of the Body Side Outer that can be removed is cutting 860 mm (33-7/8 in) from the forward edge of the door hinge bolt shown.

 Reference Line/Point

 Cut Line



**NOTE:** The diagrams in this procedure show the smallest section of Body Side Outer that can be removed. When removing a larger section, adjust accordingly.







## Removal

1 Remove the lower portion of the Body Side Outer in the A-Pillar area (continued).

C Cut the Body Side Outer on the cut lines marked in the previous substeps.



**CAUTION:** Do not damage the surrounding components.



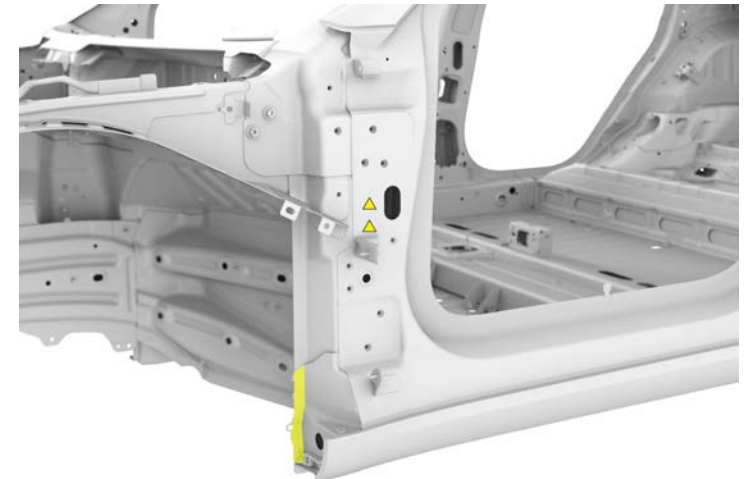
D Use a drill with a spot weld bit to drill out the spot welds that attach the lower portion of the Body Side Outer.

▲ Factory Spot Weld (x2)

■ Factory Spot Weld Areas



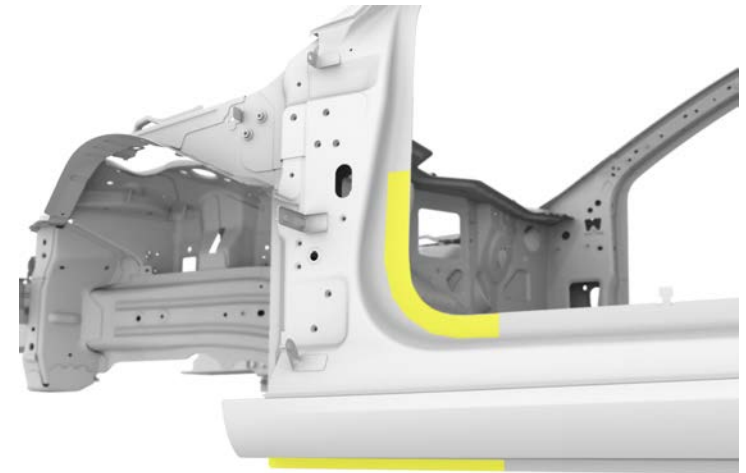
**NOTE:** The areas highlighted in yellow indicate multiple factory spot welds.





## Removal

- 1 Remove the lower portion of the Body Side Outer in the A-Pillar area (continued).
- D Use a drill with a spot weld bit to drill out the spot welds that attach the lower portion of the Body Side Outer (continued).





## Removal

- 1 Remove the lower portion of the Body Side Outer in the A-Pillar area (continued).

**E** Use a heat gun to heat the adhesive joints, and then use a hammer and chisel to remove the lower portion of the Body Side Outer in the A-Pillar area. Save the lower portion to use as a template in a [later step](#).



**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 lower portion of the Body Side Outer in the A-Pillar area (continued).
- E** Use a heat gun to heat the adhesive joints, and then use a hammer and chisel to remove the lower portion of the Body Side Outer in the A-Pillar area. Save the lower portion to use as a template in a later step (continued).





## Removal

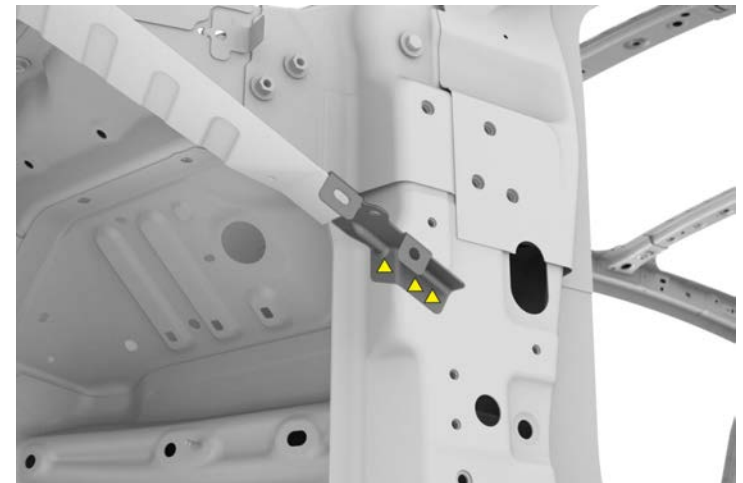
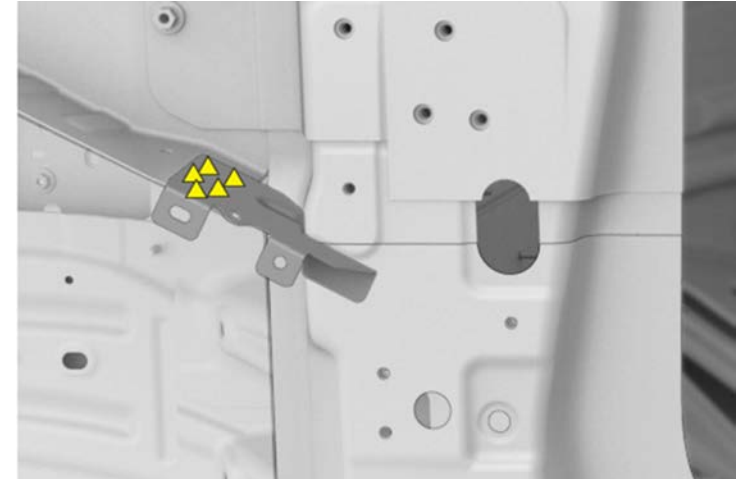
2 Remove the lower portion of the Hinge Pillar.

A Use a drill with a spot weld bit to drill out the spot welds that attach the A-Pillar to Shotgun Reinforcement.

▲ Factory Spot Weld (x8)



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







## Removal

2 Remove the lower portion of the Hinge Pillar (continued).

A Use a drill with a spot weld bit to drill out the spot welds that attach the A-Pillar to Shotgun Reinforcement (continued).



B Use a hammer and chisel to remove the A-Pillar to Shotgun Reinforcement.



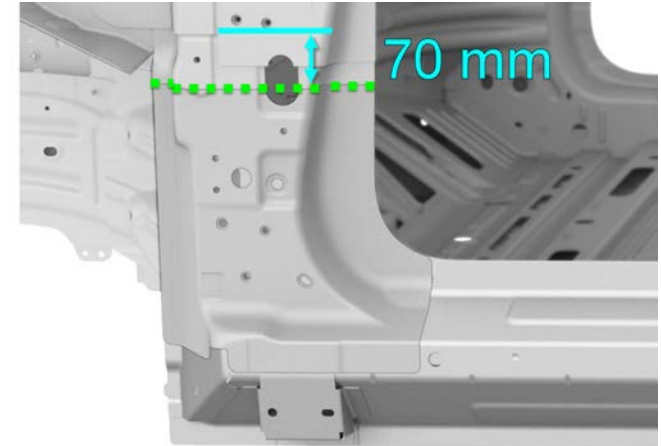


## Removal

2 Remove the lower portion of the Hinge Pillar (continued).

C Mark a cut line 70 mm (2-3/4 in) down from the lower edge of the A-Pillar Outer Reinforcement.

— — — — — Cut Line







### Removal

2 Remove the lower portion of the Hinge Pillar (continued).

D Cut the original Hinge Pillar on the cut line marked in the previous substep.



**CAUTION:** Do not damage the surrounding components.

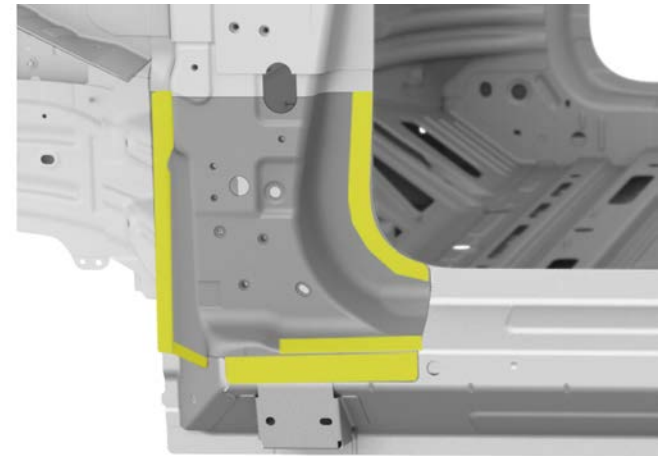


E Use a drill with a spot weld bit to drill out the spot welds that attach the lower portion of the Hinge Pillar.

 Factory Spot Weld Areas



**NOTE:** The areas highlighted in yellow indicate multiple factory spot welds.





### Removal

2 Remove the lower portion of the Hinge Pillar (continued).

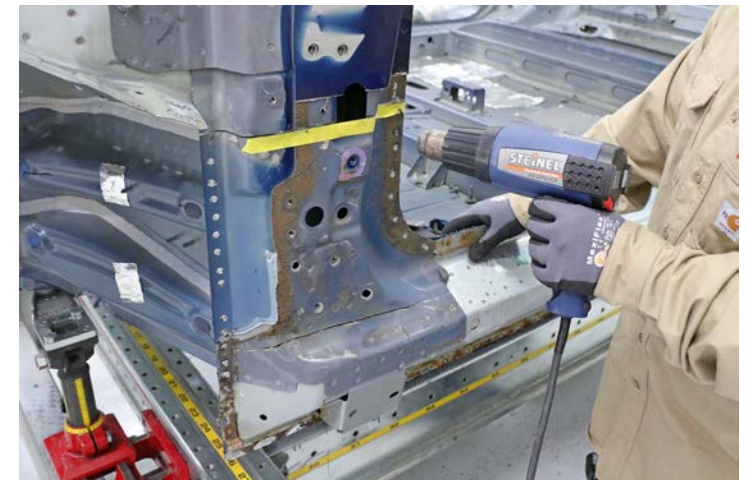
E Use a drill with a spot weld bit to drill out the spot welds that attach the lower portion of the Hinge Pillar (continued).



F Use a heat gun to heat the adhesive joints, and then use a hammer and chisel to remove the lower portion of the Hinge Pillar.



**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 lower portion of the Hinge Pillar (continued).

F Use a heat gun to heat the adhesive joints, and then use a hammer and chisel to remove the lower portion of the Hinge Pillar (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.







## Replacement

1 Prepare a backing plate for the installation of the new Hinge Pillar section.

A On the first new Hinge Pillar Assembly, use a drill with a spot weld bit to drill out the factory spot welds that attach the A-Pillar to Shotgun Reinforcement.

▲ Factory Spot Weld (x3)





## Replacement

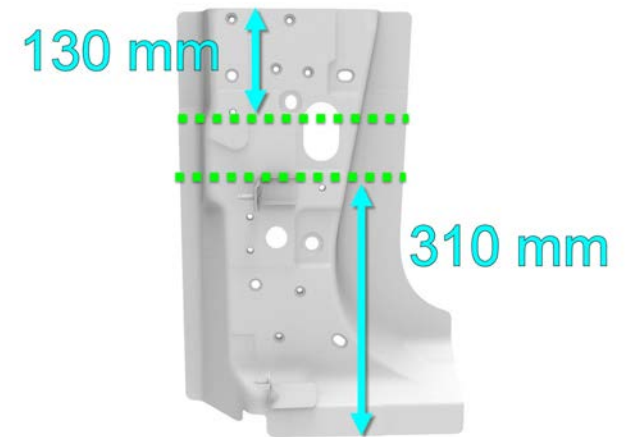
1 Prepare a backing plate for the installation of the new Hinge Pillar section (continued).

B Use a hammer and chisel to remove the A-Pillar to Shotgun Reinforcement from the first new Hinge Pillar Assembly.



C Cut the first new Hinge Pillar Assembly as shown to create a backing plate.

— — — — — Cut Line





## Replacement

1 Prepare a backing plate for the installation of the new Hinge Pillar section (continued).

C Cut the first new Hinge Pillar Assembly as shown to create a backing plate (continued).

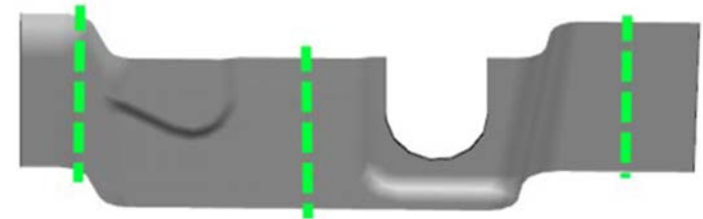


D Cut off the flanges from the backing plate, and then cut the backing plate down the middle to create 2 sections.

— — — — — Cut Line



**NOTE:** This allows the backing plate to fit inside the butt joint.







## Replacement

- 1 Prepare a backing plate for the installation of the new Hinge Pillar section (continued).
- D Cut off the flanges from the backing plate, and then cut the backing plate down the middle to create 2 sections (continued).





## Replacement

- 1 Prepare a backing plate for the installation of the new Hinge Pillar section (continued).

**E** Use a disc sander with a medium-abrasive surface conditioning disc to remove the e-coat from the sections in the areas where the sections meet.



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



**F** Clean the sections of the backing 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

1 Prepare a backing plate for the installation of the new Hinge Pillar section (continued).

G Put the backing plate sections into position and clamp them into place.



**NOTE:** If necessary, trim the backing plate sections to achieve the proper fit.





## Replacement

- 1 Prepare a backing plate for the installation of the new Hinge Pillar section (continued).

# H

Tack weld the 2 backing 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 backing plate sections together while the sections are on the vehicle.

# I

Remove the backing plate sections from the vehicle.





## Replacement

- 1 Prepare a backing plate for the installation of the new Hinge Pillar section (continued).

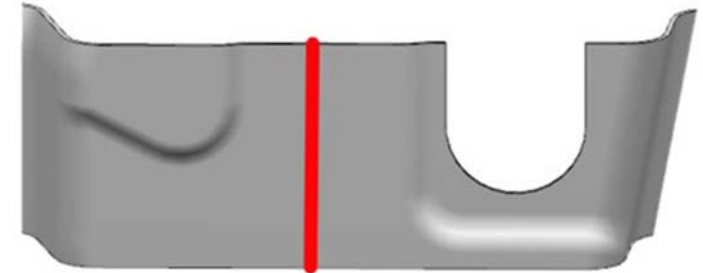
J

GMA weld the 2 backing plate sections together to create 1 backing plate.

 GMA 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.







## Replacement

1 Prepare a backing plate for the installation of the new Hinge Pillar section (continued).

K Use a grinding tool to grind down the weld on the backing plate.



L Put the backing plate into position and clamp it into place.





## Replacement

- 1 Prepare a backing plate for the installation of the new Hinge Pillar section (continued).

**M** Mark the locations for the structural countersunk rivets that will attach the backing plate to the upper portion of the original Hinge Pillar Assembly.

○ Structural Countersunk Rivet, 6.5 mm (x3)



**CAUTION:** Make sure to locate the forward-most hole inboard enough so that it does not conflict with the fasteners used to install the A-Pillar to Shotgun Reinforcement in a [later step](#).







## Replacement

1 Prepare a backing plate for the installation of the new Hinge Pillar section (continued).

M Mark the locations for the structural countersunk rivets that will attach the backing plate to the upper portion of the original Hinge Pillar Assembly (continued).

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



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





## Replacement

1 Prepare a backing plate for the installation of the new Hinge Pillar section (continued).

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

O 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.



**NOTE:** For the forward-most hole, the plastic foot of the Microstop countersink cage assembly must be removed to provide clearance for the tool.





## Replacement

- 1 Prepare a backing plate for the installation of the new Hinge Pillar section (continued).
- 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) (continued).





## Replacement

2 Prepare for installation of the new Hinge Pillar section.

A On the second new Hinge Pillar Assembly, use a drill with a 6.7 mm (17/64 in) bit to drill completely through the factory spot welds that attach the A-Pillar to Shotgun Reinforcement.

▲ Factory Spot Weld (x3)





## Replacement

2 Prepare for installation of the new Hinge Pillar section (continued).

B Use a hammer and chisel to remove the A-Pillar to Shotgun Reinforcement from the second new Hinge Pillar Assembly.



**NOTE:** Save the A-Pillar to Shotgun Reinforcement for installation in a [later step](#).

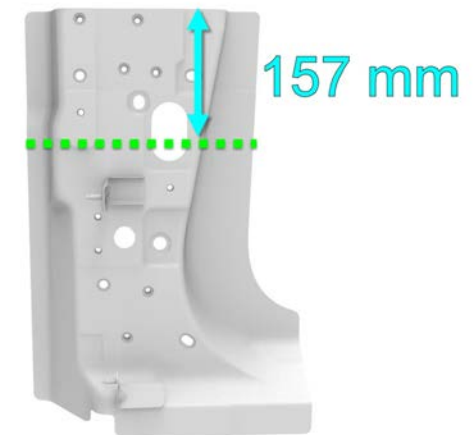


C Cut the second new Hinge Pillar Assembly on the green dashed line shown.

 Cut Line



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







## Replacement

2 Prepare for installation of the new Hinge Pillar section (continued).

C Cut the second new Hinge Pillar Assembly on the green dashed line shown (continued).



D Put the new Hinge Pillar Assembly section into position and align it to the frame bench jig points.



**NOTE:** If necessary, use a 1 mm (1/16 in) shim to account for the thickness of the Body Side Outer.



**NOTE:** If necessary, trim the new section to achieve suitable gaps.





## Replacement

- 2 Prepare for installation of the new Hinge Pillar section (continued).
- D Put the new Hinge Pillar Assembly section into position and align it to the frame bench jig points (continued).



- E Put the new A-Pillar to Shotgun Reinforcement into position and insert grip screws into the holes that were drilled when the reinforcement was removed in an [earlier substep](#).







## Replacement

2 Prepare for installation of the new Hinge Pillar section (continued).

F Clamp the new A-Pillar to Shotgun Reinforcement to the Shotgun Inner.



G Mark the remaining fastener locations on the new Hinge Pillar Assembly section.

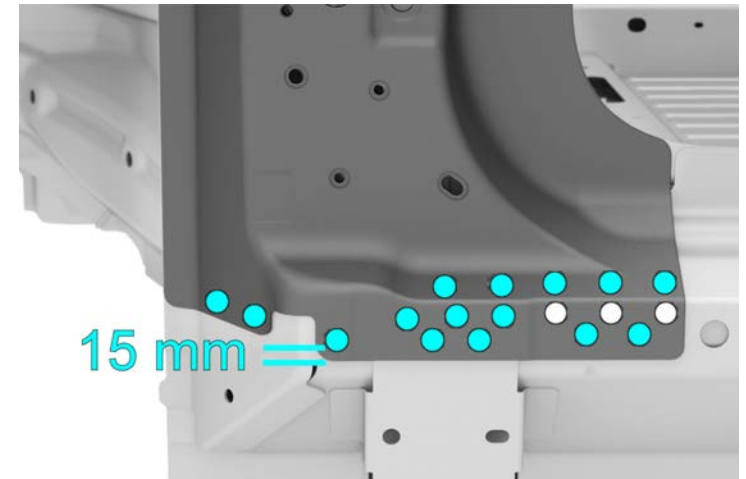
● High Strength Structural Rivet, 6.5 mm (x15)

○ Structural Countersunk Rivet, 6.5 mm (x4)

▲ Installation Spot Weld



**NOTE:** Mark and drill the holes for the bottom row of structural countersunk rivets at least 15 mm (9/16 in) up from the bottom edge of the new section. This ensures that the rivets go through the flat face of the aluminum Sill Insert.

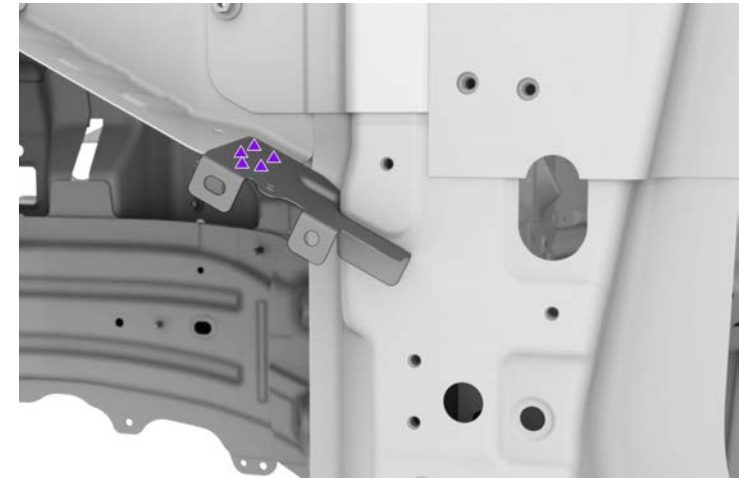
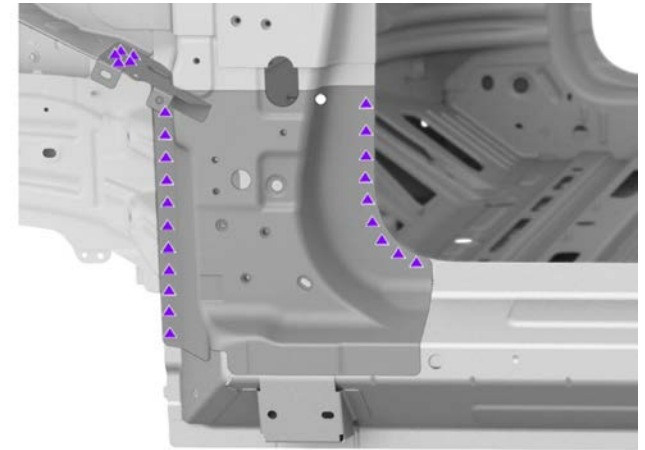




## Replacement

2 Prepare for installation of the new Hinge Pillar section (continued).

G Mark the remaining fastener locations on the new Hinge Pillar Assembly section (continued).





## Replacement

2 Prepare for installation of the new Hinge Pillar section (continued).

G Mark the remaining fastener locations on the new Hinge Pillar Assembly section (continued).



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



**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.



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





## Replacement

2 Prepare for installation of the new Hinge Pillar section (continued).

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



I 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).

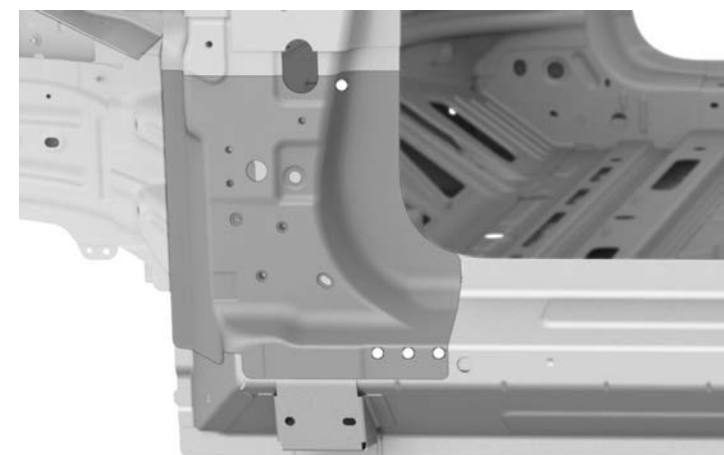
○ Structural Countersunk Rivet, 6.5 mm (x4)



**NOTE:** If necessary, remove the plastic foot from the countersink cage assembly to install the countersunk structural rivet circled in red.



**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.





## Replacement

2 Prepare for installation of the new Hinge Pillar section (continued).

1 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) (continued).







## Replacement

2 Prepare for installation of the new Hinge Pillar section (continued).

J Mark the surface preparation boundary lines on the new Hinge Pillar section and the vehicle.



K Remove the new A-Pillar to Shotgun Reinforcement, the new Hinge Pillar section, and the backing plate.





## Replacement

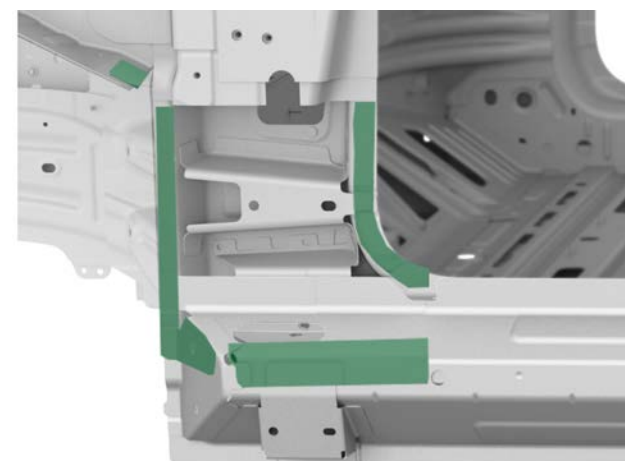
2 Prepare for installation of the new Hinge Pillar section (continued).

K Remove the new A-Pillar to Shotgun Reinforcement, the new Hinge Pillar section, and the backing plate (continued).



L Mark the bond path areas on the new Hinge Pillar Assembly section, the new A-Pillar to Shotgun Reinforcement, the backing plate, and the vehicle.

 Steel-to-Steel Bond Path

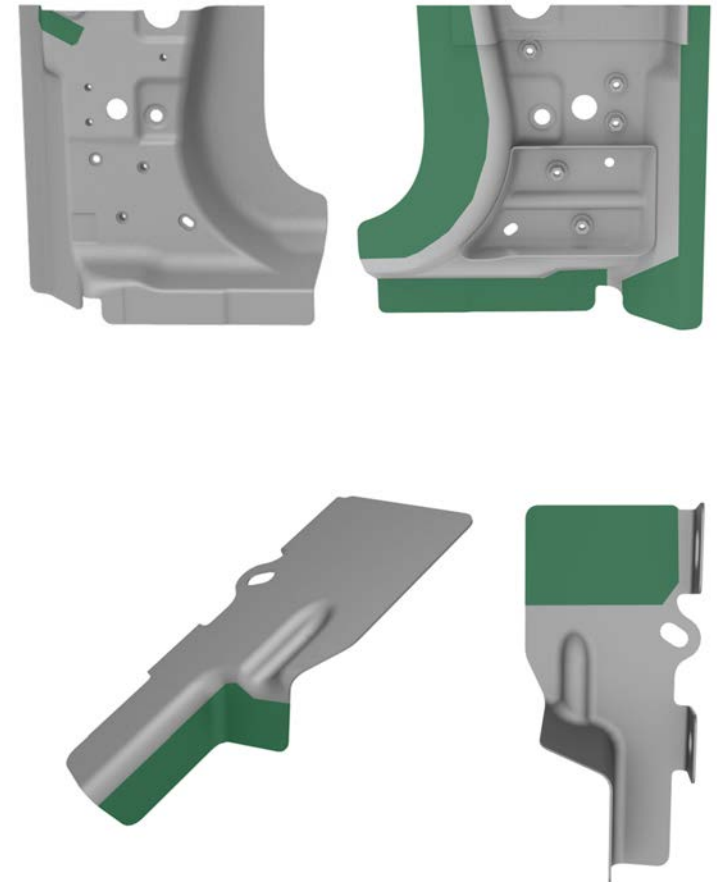




## Replacement

2 Prepare for installation of the new Hinge Pillar section (continued).

L Mark the bond path areas on the new Hinge Pillar Assembly section, the new A-Pillar to Shotgun Reinforcement, the backing plate, and the vehicle (continued).





### Replacement

3 Prepare the surfaces to install the new Hinge Pillar Assembly section.

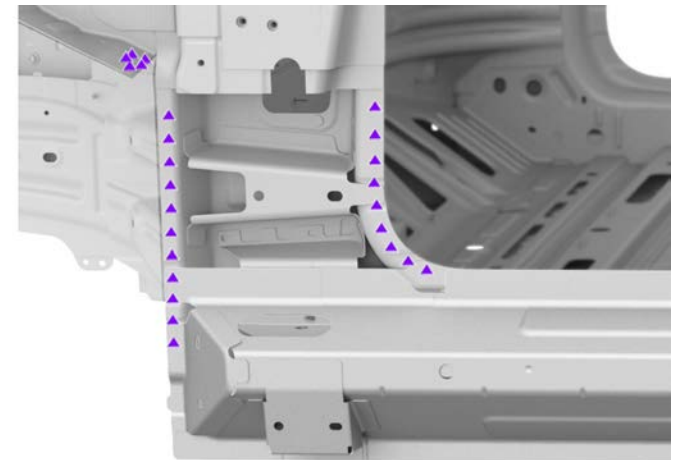
A Use a red Scotch-Brite pad to scuff the new Hinge Pillar Assembly section, the A-Pillar to Shotgun Reinforcement, the vehicle, and the outside of the backing plate in the bond path areas.



**NOTE:** Make sure to scuff the inside surfaces of the original Hinge Pillar Assembly on the vehicle in the areas that will contact the backing plates.

B Mark the installation spot weld locations on the new Hinge Pillar Assembly section, the A-Pillar to Shotgun Reinforcement, and the vehicle.

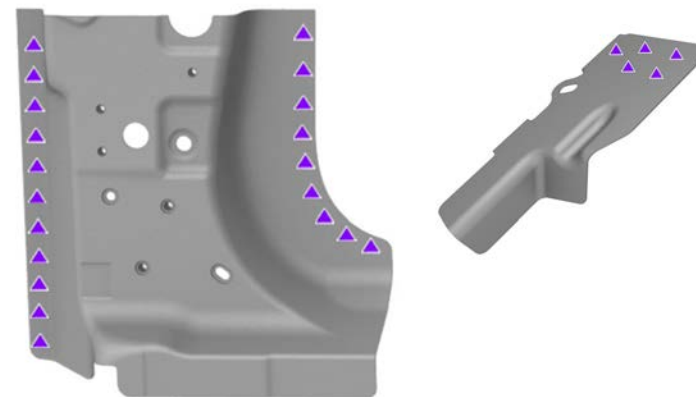
▲ Installation Spot Weld





## Replacement

- 3 Prepare the surfaces to install the new Hinge Pillar Assembly section (continued).
- B Mark the installation spot weld locations on the new Hinge Pillar Assembly section, the A-Pillar to Shotgun Reinforcement, and the vehicle (continued).







### Replacement

**3** Prepare the surfaces to install the new Hinge Pillar Assembly section (continued).

**C** Use a disc sander with a medium-abrasive surface conditioning disc to remove the e-coat in the weld areas.



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



**CAUTION:** Take the appropriate steps to minimize the cross-contamination of steel and aluminum components during the repair.



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

**D**

Clean all the bond paths and weld areas on the new section, the reinforcement, the backing 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.





## Replacement

**3** Prepare the surfaces to install the new Hinge Pillar Assembly section (continued).

**E** Apply a suitable weld-through primer to any bare metal on the backside of the backing plate (the sides of the backing plate that will be facing the inside of the vehicle when installed).

**4** Apply structural adhesive to install the new Hinge Pillar Assembly section.

**A** Spread a thin coating of structural adhesive as a primer layer on the bond paths on the new Hinge Pillar Assembly section, the new A-Pillar to Shotgun Reinforcement, the backing 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.

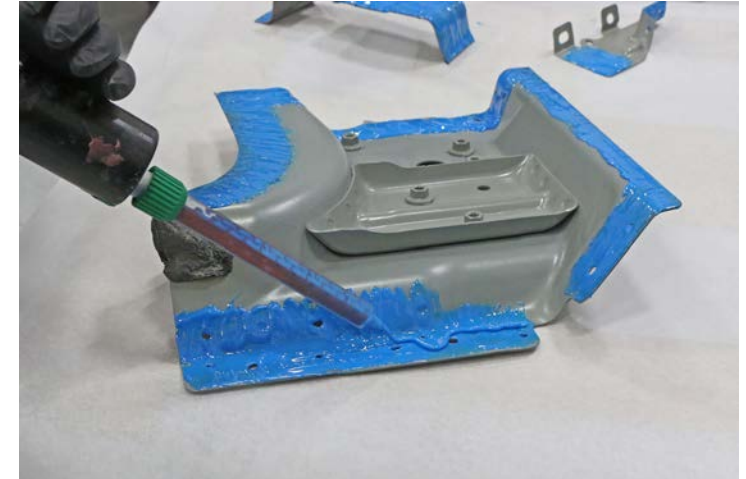




## Replacement

**4** Apply structural adhesive to install the new Hinge Pillar Assembly section (continued).

**B** While the primer layer is still wet, apply a bead of structural adhesive on top of the primer layer of the bond path areas on the new Hinge Pillar section and on the backing plate.



**5** Install the new Hinge Pillar Assembly section.

**A** Put the backing plate for the Hinge Pillar into position and insert the countersunk structural rivets to hold it in place.

○ Structural Countersunk Rivet, 6.5 mm (x3)





## Replacement

5 Install the new Hinge Pillar Assembly section (continued).

A Put the backing plate for the Hinge Pillar into position and insert the countersunk structural rivets to hold it in place (continued).



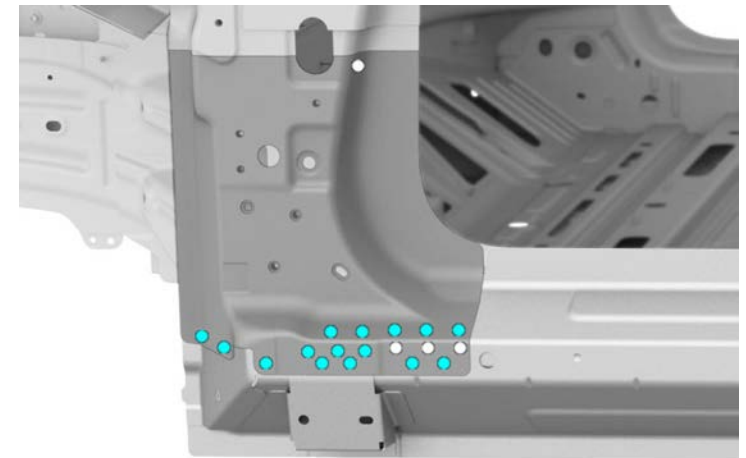


## Replacement

5 Install the new Hinge Pillar Assembly section (continued).

B Put the new Hinge Pillar Assembly section into position, and insert the structural rivets and countersunk structural rivets shown.

- High Strength Structural Rivet, 6.5 mm (x15)
- Structural Countersunk Rivet, 6.5 mm (x4)







## Replacement

5 Install the new Hinge Pillar Assembly section (continued).

B Put the new Hinge Pillar Assembly section into position, and insert the structural rivets and countersunk structural rivets shown (continued).



C Install the structural countersunk rivet shown.  
○ Structural Countersunk Rivet, 6.5 mm (x1)



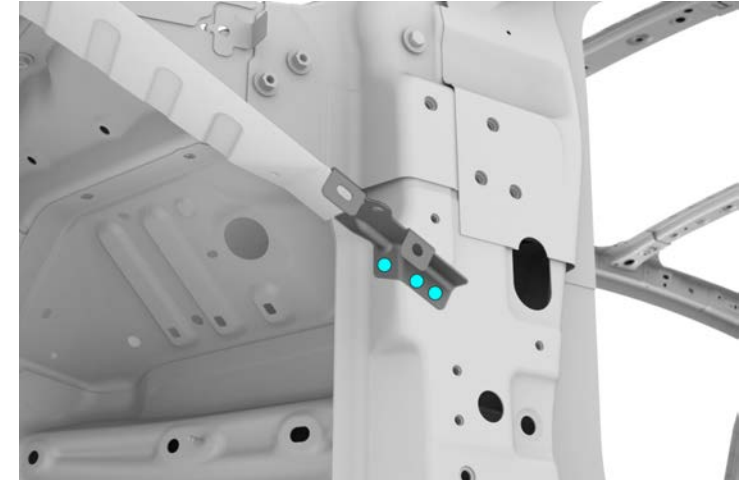


## Replacement

5 Install the new Hinge Pillar Assembly section (continued).

D Put the new A-Pillar to Shotgun Reinforcement into position and insert the structural rivets.

● High Strength Structural Rivet, 6.5 mm (x3)





## Replacement

5 Install the new Hinge Pillar Assembly section (continued).

E Align and temporarily secure the new Hinge Pillar section to the frame bench jig points.



**NOTE:** If necessary, use a 1 mm (1/16 in) shim to account for the thickness of the Body Side Outer.

F Clamp the new Hinge Pillar section and the A-Pillar to Shotgun Reinforcement in the areas that do not have fasteners.





## Replacement

5

Install the new Hinge Pillar Assembly section (continued).

G

Install the structural rivets and structural countersunk rivets to install the new Hinge Pillar section and the new A-Pillar to Shotgun Reinforcement.

H

Wipe off any excess adhesive.





## Replacement

5 Install the new Hinge Pillar Assembly section (continued).

I

Perform resistance spot welding.

▲ Installation Spot Weld



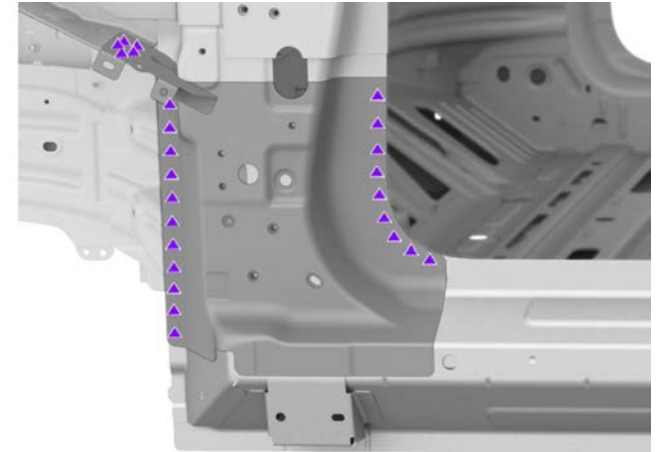
**WARNING:** Failure to follow all welding safety precautions, including the use of personal protective equipment, could result in serious injury or property damage. Only technicians who have successfully met Tesla's requirements for welding training are authorized to weld structural components on Tesla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

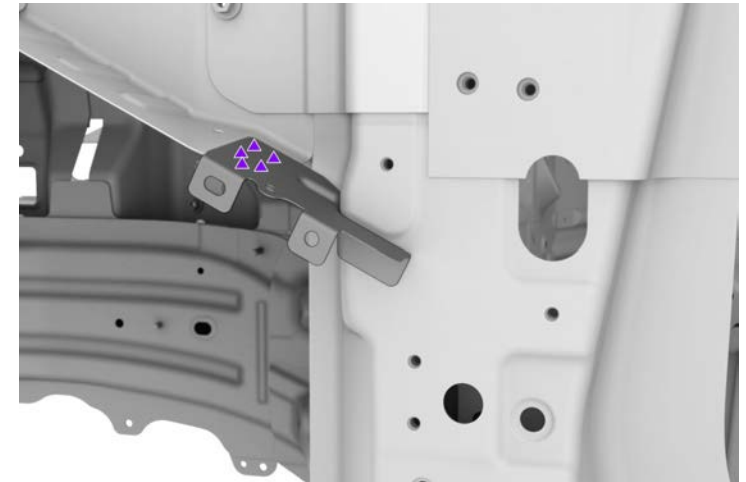






## Replacement

- 5 Install the new Hinge Pillar Assembly section (continued).
- 1 Perform resistance spot welding (continued).

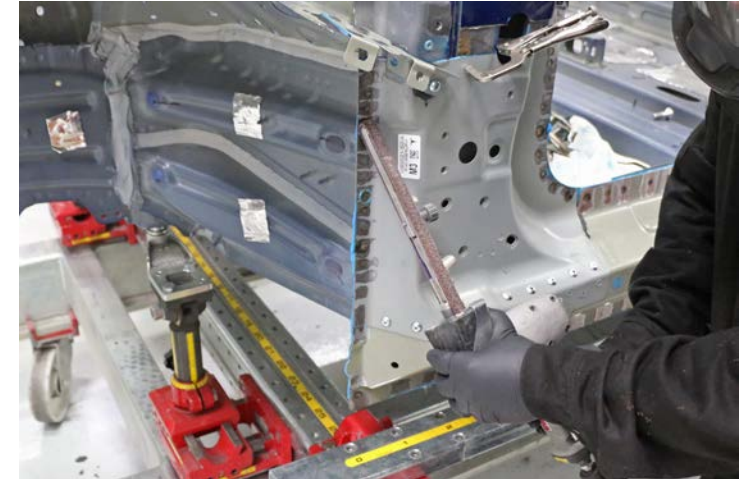




## Replacement

5 Install the new Hinge Pillar Assembly section (continued).

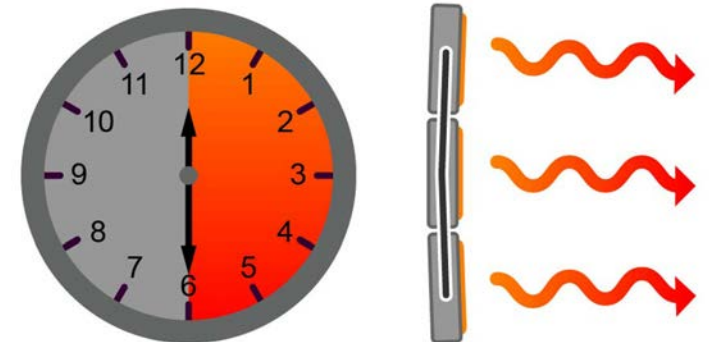
J Remove any discoloration from the weld areas.



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



## Replacement

6

Prime any bare metal that will not be covered with weld-through primer or structural adhesive in a subsequent repair with a suitable corrosion-resistant epoxy primer.

7

Prepare the new A-Pillar Body Side Outer section for installation.

A

Clamp the remaining piece of the original Body Side Outer to the new A-Pillar Body Side Outer, and use it as a template to mark cut lines at each butt joint. Remove the template.



**NOTE:** The remaining piece of the original Body Side Outer was removed in an [earlier step](#).



## Replacement

7 Prepare the new A-Pillar Body Side Outer section for installation (continued).

B Cut the new A-Pillar Body Side Outer on the cut lines 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.

C Put the new Body Side Outer section into position and check for suitable gaps. If necessary, trim the new Body Side Outer section. Remove the new Body Side Outer section.





## Replacement

8 Create and install backing plates for the Body Side Outer butt joints.

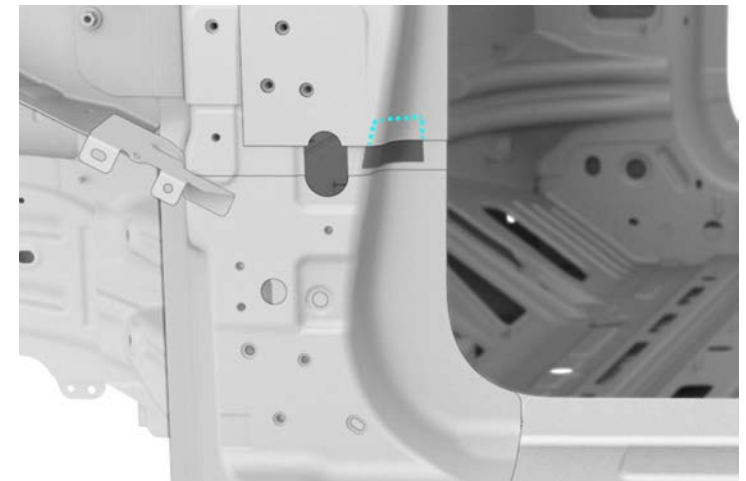
A Cut 40 mm (1-9/16 in) sections from the remaining piece of the new A-Pillar Body Side Outer to create backing plates for the 2 butt joints.



**NOTE:** This piece was cut off of the new Body Side Outer in an [earlier step](#).

B Trim the excess material from each section to match the backing plates shown.

 Reference Line/Point



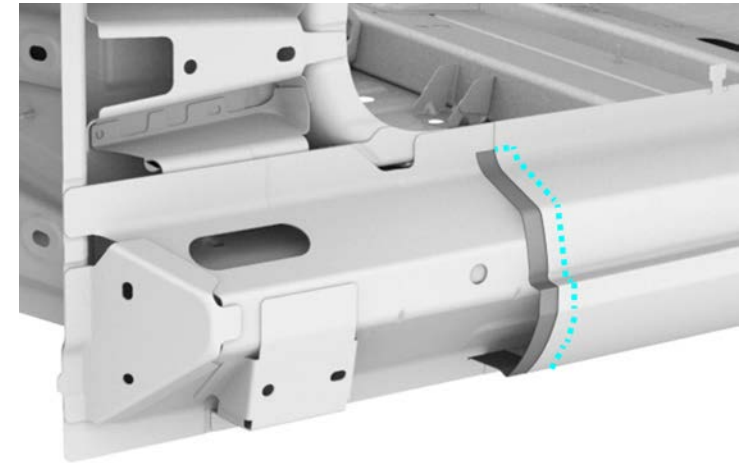




## Replacement

8 Create and install backing plates for the Body Side Outer butt joints (continued).

B Trim the excess material from each section to match the backing plates shown (continued).





## Replacement

8 Create and install backing plates for the Body Side Outer butt joints (continued).

B Trim the excess material from each section to match the backing plates shown (continued).



C Use a disc sander with a medium-abrasive surface conditioning disc to remove the e-coat on the outward surface of the backing plates (the sides of the backing plates that will be facing the outside of the vehicle when installed).



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





## Replacement

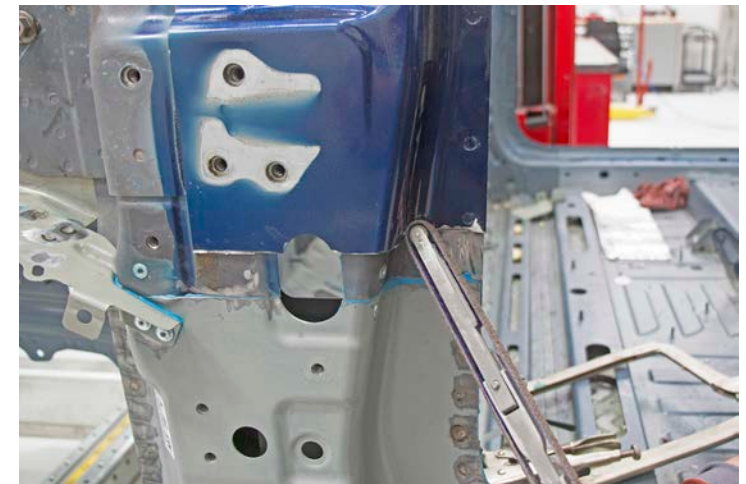
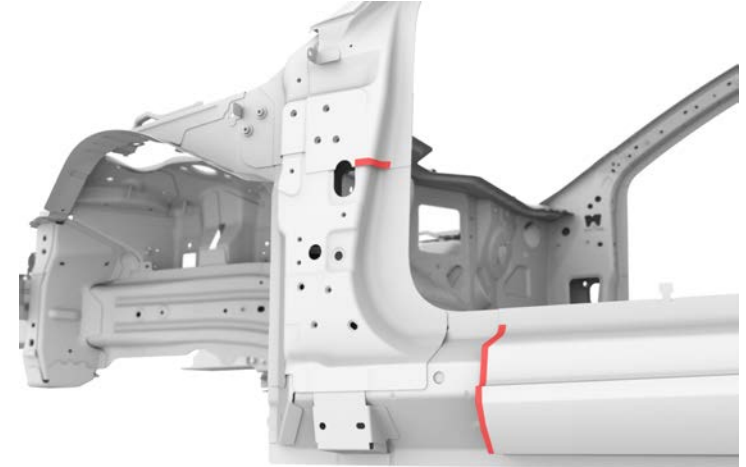
8 Create and install backing plates for the Body Side Outer butt joints (continued).

D Use a belt sander with a medium-abrasive belt to remove the paint from the butt joint weld areas on the vehicle.

 GMA Weld



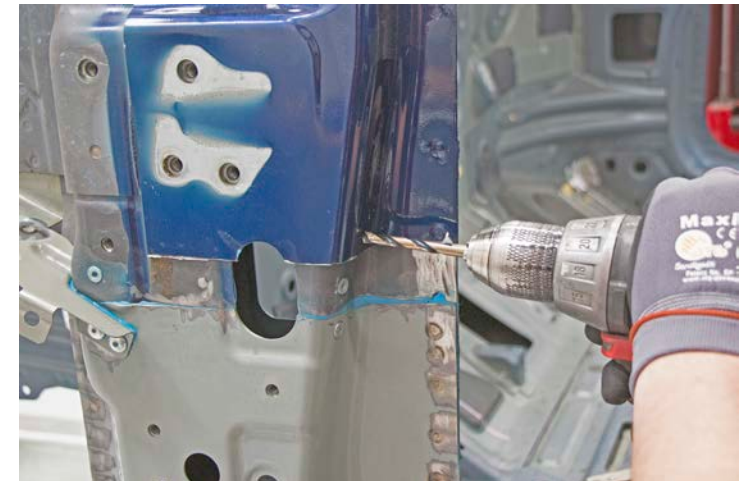
**WARNING:** Remove the paint in a well-ventilated area. Wear suitable personal protective equipment.





## Replacement

- 8 Create and install backing plates for the Body Side Outer butt joints (continued).
- E Wipe the insides of the flanges with isopropyl alcohol (IPA) to remove any cavity wax.
- F Use a drill with an 8 mm (5/16 in) bit to drill holes for plug welds.





## Replacement

8 Create and install backing plates for the Body Side Outer butt joints (continued).

G Use sandpaper or a disc sander with a medium-abrasive surface conditioning disc to remove any remaining epoxy adhesive from the inside surfaces of the flanges.



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



**NOTE:** Pry up the flanges where necessary to gain access to the adhesive.

H

Apply a suitable weld-through primer to any bare metal on the backsides of the backing plates (the sides of the backing plates that will be facing the inside of the vehicle when installed).



**CAUTION:** Only use zinc weld-through primers. Other primers might cause corrosion and compromise the integrity of the repair.







## Replacement

8 Create and install backing plates for the Body Side Outer butt joints (continued).

I Put the backing plates into position and clamp them into place. If necessary, trim them to fit.



J 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

- 8 Create and install backing plates for the Body Side Outer butt joints (continued).
- K Use a grinding tool to grind down the plug welds until they are flush with the panel.

- 9 Prepare for the installation of the new Body Side Outer section.

- A Put the new Body Side Outer section into position and clamp it into place.



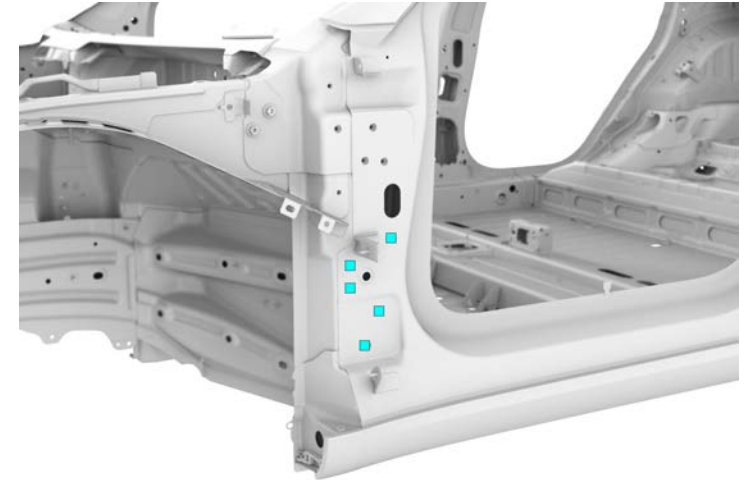


## Replacement

9 Prepare for the installation of the new Body Side Outer section (continued).

B Temporarily install the door hinge bolts.

■ Bolt, hex-head (x5)





## Replacement

9 Prepare for the installation of the new Body Side Outer section (continued).

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

○ Structural Countersunk Rivet, 6.5 mm (x2)



**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.



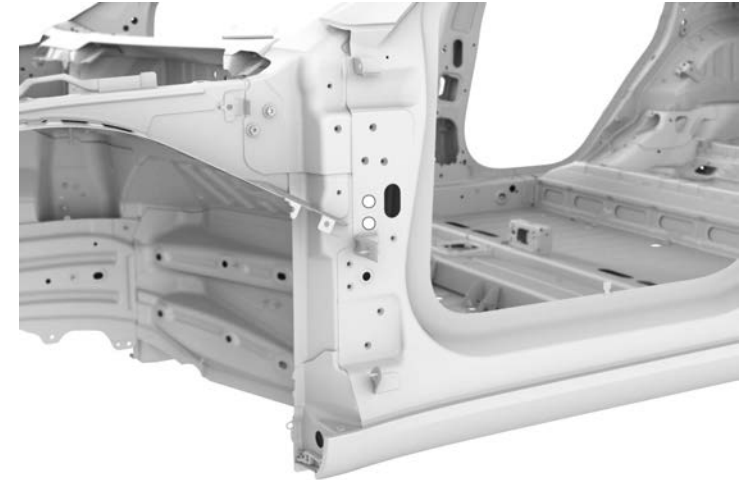
**NOTE:** Install a grip screw after drilling each hole to keep the panel aligned while drilling the remaining holes.

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.



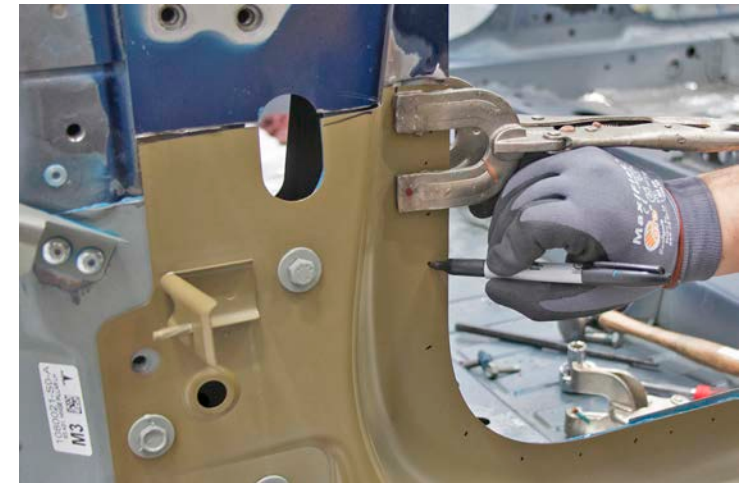
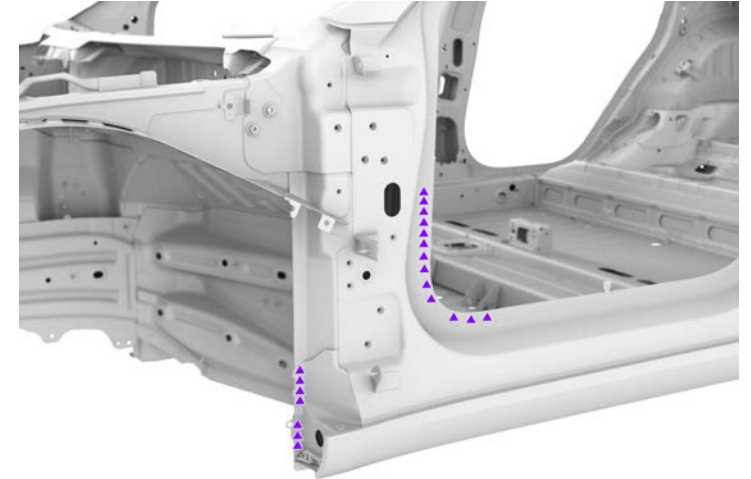


## Replacement

9 Prepare for the installation of the new Body Side Outer section (continued).

E Mark the installation spot weld locations on the new section.

▲ Installation Spot Weld







## Replacement

9 Prepare for the installation of the new Body Side Outer section (continued).

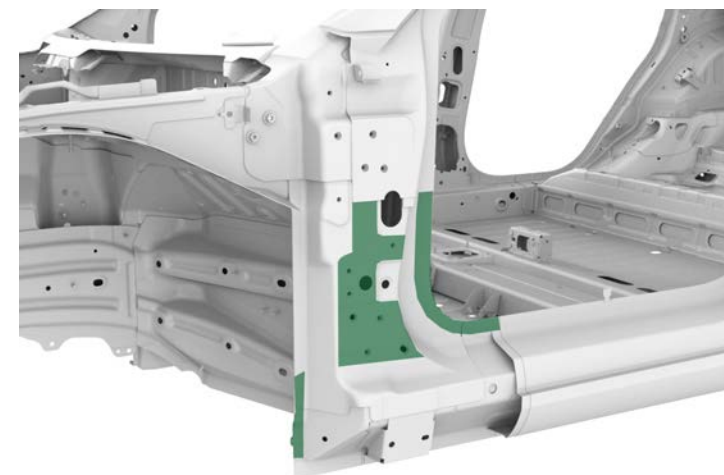
F Mark the surface preparation boundary lines on the new Body Side Outer section and on the vehicle, and then remove the new Body Side Outer section.



G Mark the bond path and weld areas on the new component and the vehicle. These areas will be prepared for bonding and welding in the next step.

 Steel-to-Steel Bond Path

 GMA Weld





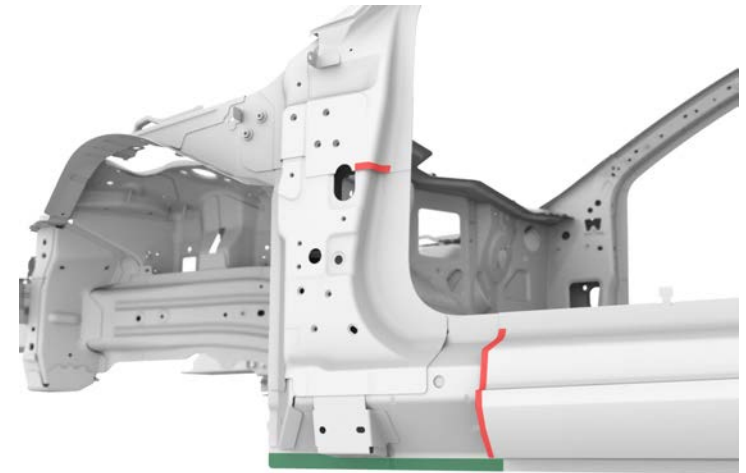
## Replacement

9

Prepare for the installation of the new Body Side Outer section (continued).

G

Mark the bond path and weld areas on the new component and the vehicle. These areas will be prepared for bonding and welding in the next step (continued).





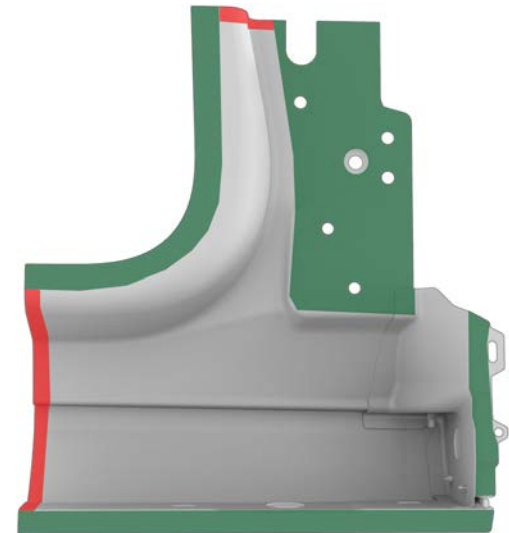
## Replacement

9

Prepare for the installation of the new Body Side Outer section (continued).

G

Mark the bond path and weld areas on the new component and the vehicle. These areas will be prepared for bonding and welding in the next step (continued).





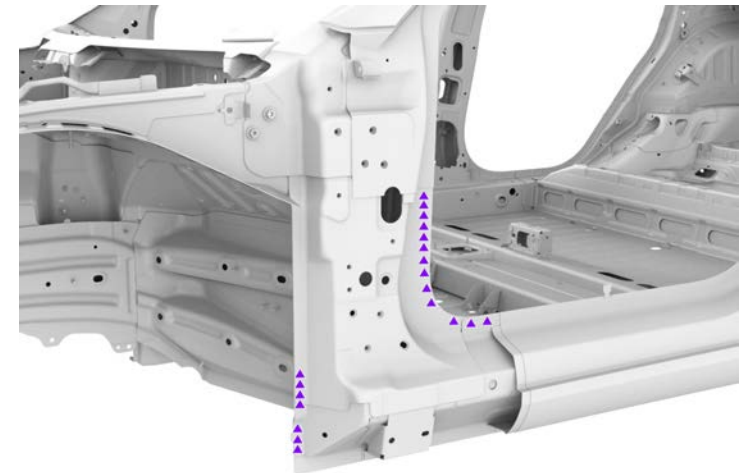
## Replacement

10 Prepare the surfaces to install the new Body Side Outer Section.

A Use a red Scotch-Brite pad to scuff the new Body Side Outer section and the vehicle in the bond path areas.

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

▲ Installation Spot Weld





## Replacement

10 Prepare the surfaces to install the new Body Side Outer Section (continued).

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



C Use a disc sander with a medium-abrasive surface conditioning disc to remove the e-coat in the GMA weld and installation spot weld areas.



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



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







## Replacement

10 Prepare the surfaces to install the new Body Side Outer Section (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.

11 Apply structural adhesive to install the new Body Side Outer section.

A

Spread a thin coating of structural adhesive as a primer layer on the bond paths on the new Body Side Outer section and the vehicle, including the butt joint areas not directly above the backing plates.



**WARNING:** Do not apply structural adhesive within 25 mm (1 in) of the GMA weld locations. Applying structural adhesive within 25 mm (1 in) 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.





## Replacement

**11** Apply structural adhesive to install the new Body Side Outer section (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.



**12** Install the new Body Side Outer section.

**A** Put the new Body Side Outer section into position and clamp it into place.




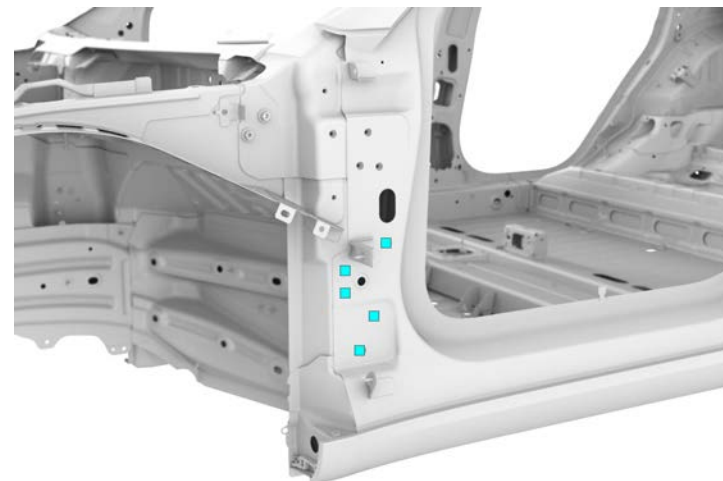


## Replacement

12 Install the new Body Side Outer section (continued).

B Temporarily install the door hinge bolts.

 Bolt, hex-head (x5)



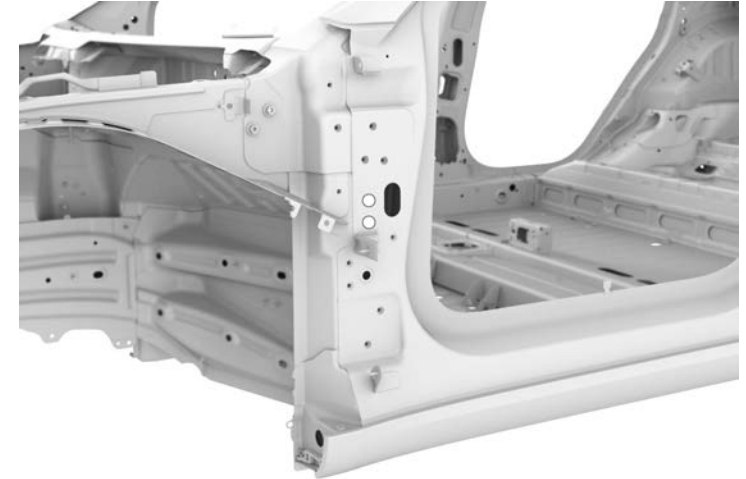


## Replacement

12 Install the new Body Side Outer section (continued).

C Insert the structural countersunk rivets.  
○ Structural Countersunk Rivet, 6.5 mm (x2)

D Install the structural countersunk rivets.





## Replacement

12 Install the new Body Side Outer section (continued).

E

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.



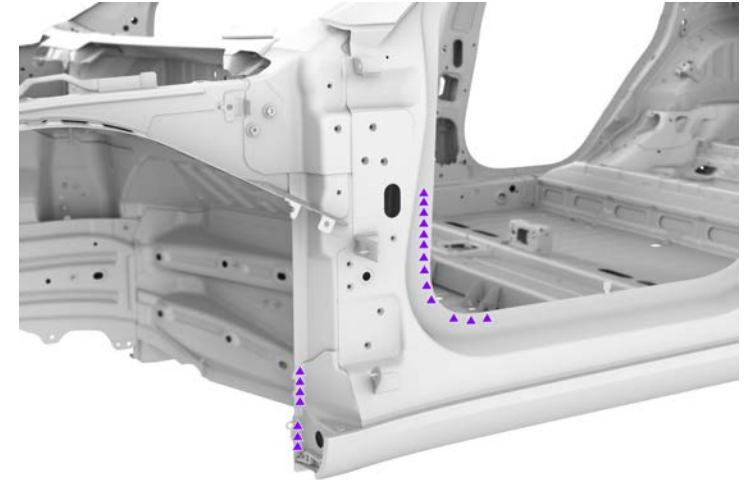
**CAUTION:** Do not weld on a Tesla vehicle with an energized high voltage or 12V system. Welding on a Tesla vehicle with an energized high voltage or 12V system might damage vehicle components.



**CAUTION:** Use only insulated clamps within 200 mm (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.



**NOTE:** Weld at the preexisting spot weld locations to avoid contamination issues with cured adhesive.







## Replacement

12 Install the new Body Side Outer section (continued).

F Clamp all bond path areas that are not secured with welds or fasteners.

G Wipe off any excess adhesive.





## Replacement

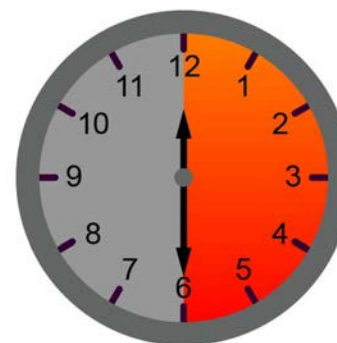
### 12 Install the new Body Side Outer section (continued).

H

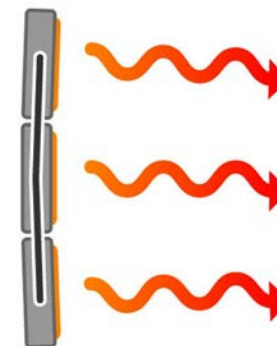
Bake the structural adhesive so that the bonded panels reach a temperature of 60°C–80°C (140°F–176°F) for at least 30 minutes to achieve full strength.



**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

13 GMA weld the butt joints.

A

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

 GMA 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.



**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.



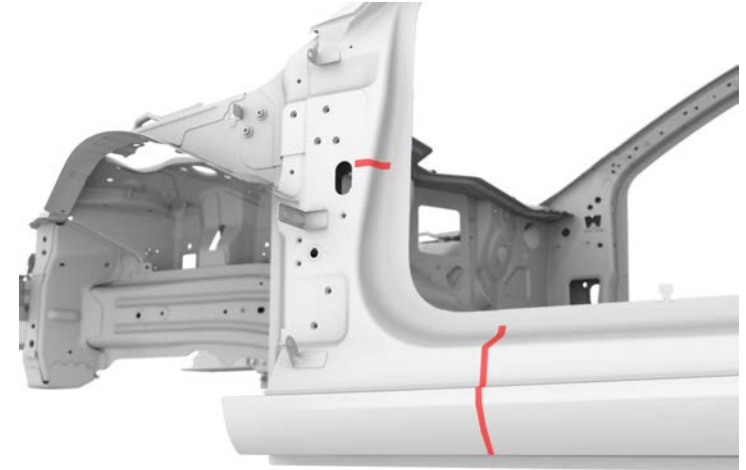
**WARNING:** Before GMA welding, make sure that the structural adhesive is dry to the touch. If the structural adhesive is not dry to the touch before GMA welding, the strength of the adhesive bond might be compromised.



**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:** 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.





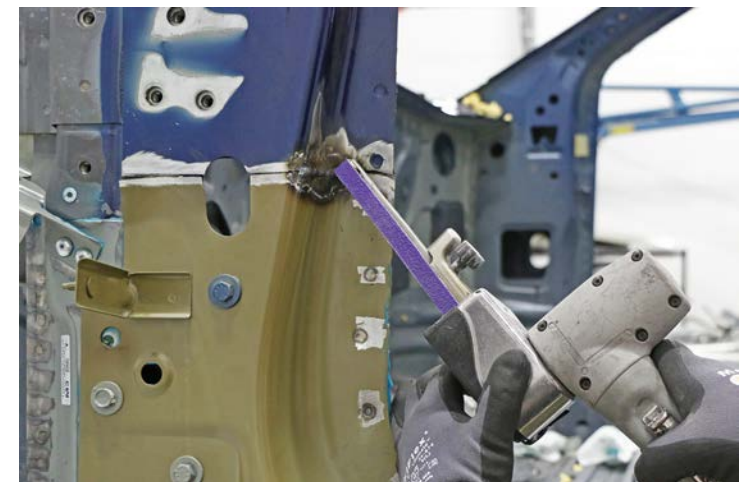
## Replacement

13 GMA weld the butt joints (continued).

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



B Grind down welds to restore all components to their original dimensions.






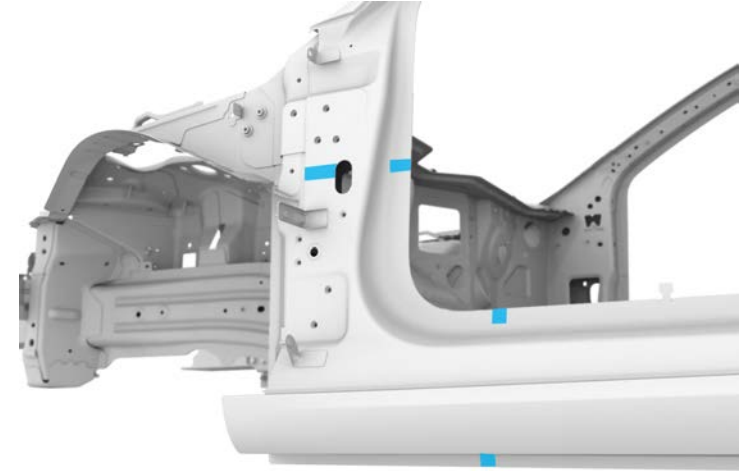
## Replacement

14 Secure the butt joint flanges.

A Pry up the flanges of the original Body Side Outer on both sides of each butt joint weld and apply structural adhesive underneath the flanges.

 Structural Adhesive

B Clamp the flanges back into position.







## Replacement

15

If required, apply a suitable body filler to the joints and finish for paint.

16

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



## Replacement

17

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

18

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





## Replacement

19

Install the new [Shotgun Outer](#).

