

501-29 Side Panel Sheet Metal Repairs
Removal and Installation

2021 F-150

Procedure revision date: 10/23/2020

A-Pillar Outer Panel

Special Tool(s) / General Equipment

6.5 mm Drill Bit
Spherical Cutter
Polydrive Bit Socket
Self-Piercing Rivet (SPR) Remover/Installer
Belt Sander
Blind Rivet Gun
Hot Air Gun
Air Body Saw
MIG/MAG Welding Equipment
Locking Pliers

Materials

Name	Specification
Metal Bonding Adhesive TA-1, TA-1-B, 3M™ 08115, LORD Fusor® 108B	-

Removal

 **WARNING:** Electric vehicles damaged by a crash may have compromised high voltage safety systems and present a potential high voltage electrical shock hazard. Exercise caution and wear appropriate Personal Protective Equipment (PPE) safety gear, including high voltage safety gloves and boots. Remove all metallic jewelry, including watches and rings. Isolate the HV system as directed by the Ford Emergency Response Guide for the vehicle. Failure to follow these instructions may result in serious personal injury or death.

NOTICE: Battery electric vehicle (BEV), hybrid electric vehicle (HEV) and plug-in hybrid electric vehicle (PHEV) contain a high-voltage battery. Before cutting or welding near the high-voltage battery it must be removed to avoid damage.

-  **WARNING:** Before beginning any service procedure in this manual, refer to health and safety warnings in section 100-00 General Information. Failure to follow this instruction may result in serious personal injury.

Refer to: [Health and Safety Precautions](#) (100-00 General Information, Description and Operation).

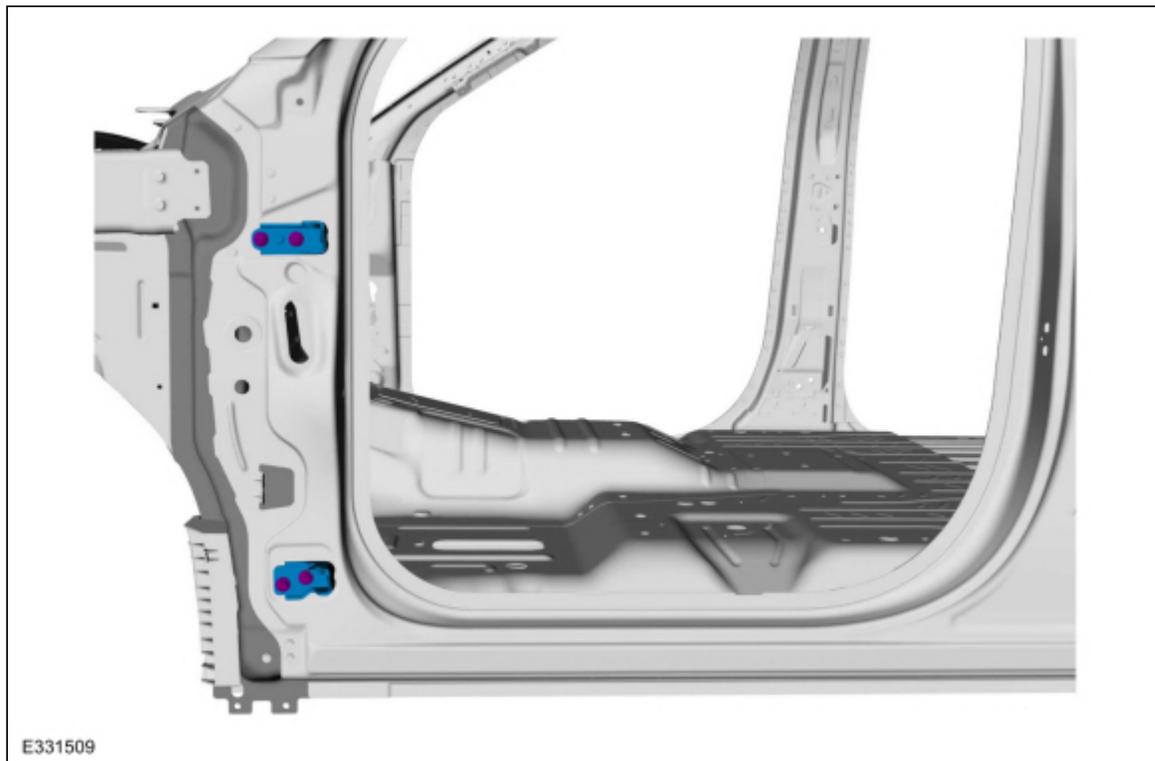
Refer to: [High Voltage System Health and Safety Precautions - Overview](#) (100-00 General Information, Description and Operation).

NOTICE: Body side sectioning is prohibited within 50mm of door hinge, door striker and restraints anchoring points.

NOTE: Aluminum body panels are highly receptive to heat transfer. With the extensive use of structural adhesives and non-structural sealers used in vehicle construction, the potential of heat transfer could impact adhesives and sealers in non-associated panels during the repair process. Many repairs areas that utilize structural adhesive may be separated after fastener removal by using a panel chisel along the joint/flange. Using heat not exceeding 425° F to loosen a bonded panel should only be done when all panels in the joint will be replaced and new adhesive applied.

NOTE: A-pillar common for all cab styles.

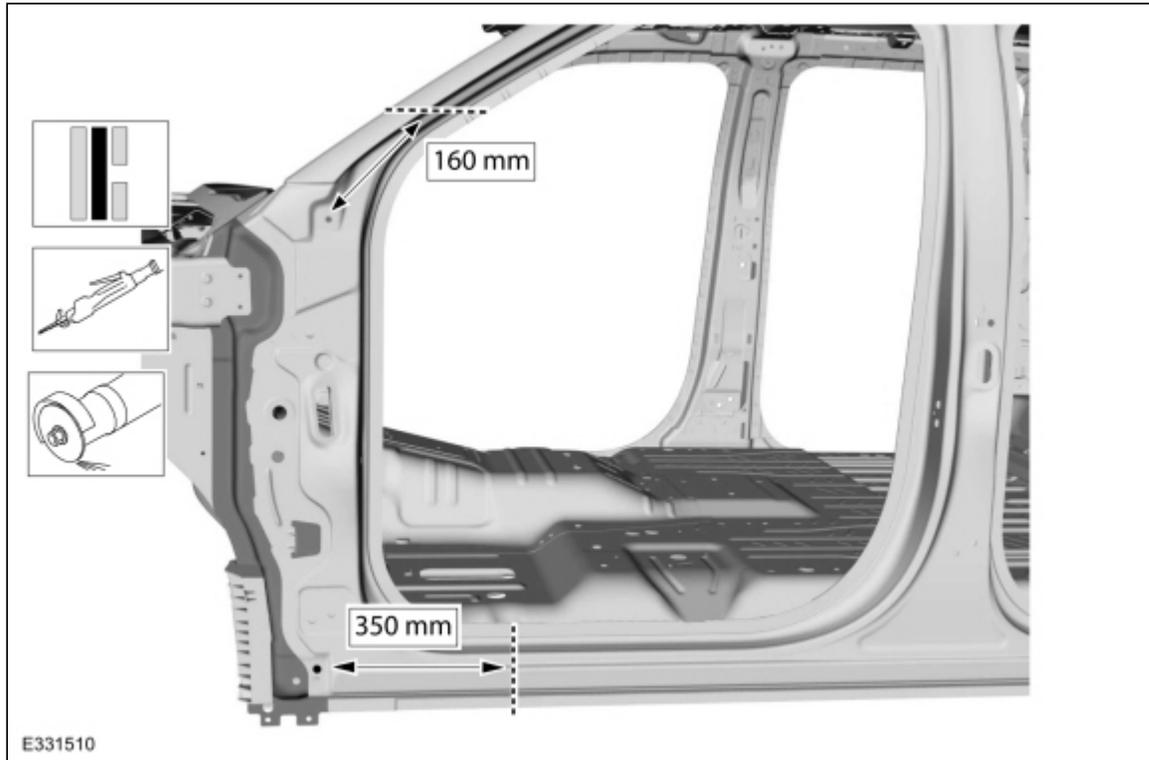
2. Depower the SRS.
Refer to: [Supplemental Restraint System \(SRS\) Depowering](#) (501-20B Supplemental Restraint System, General Procedures).
3. Verify the vehicle is dimensionally correct.
Refer to: [Body and Frame](#) (501-26 Body Repairs - Vehicle Specific Information and Tolerance Checks, Description and Operation).
4. Remove the front door.
Refer to: [Front Door - Regular Cab/SuperCrew](#) (501-03 Body Closures, Removal and Installation).
Refer to: [Front Door - SuperCab](#) (501-03 Body Closures, Removal and Installation).
5. Remove the front fender.
Refer to: [Fender](#) (501-02 Front End Body Panels, Removal and Installation).
6. Remove the front door hinges.



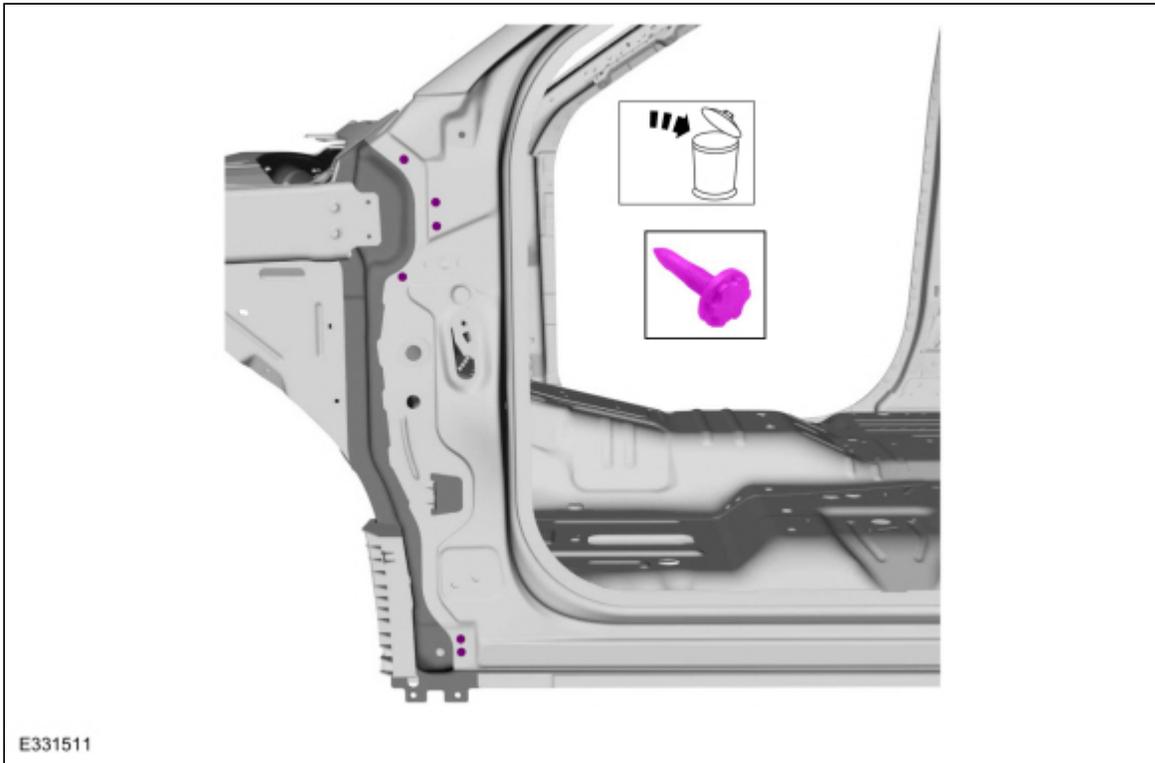
7. Remove the windshield.
Refer to: [Fixed Glass](#) (501-11 Glass, Frames and Mechanisms, General Procedures).

8. Outer panel only

Carefully cut the panel as indicated.
Use the General Equipment: Air Body Saw
Use the General Equipment: Spherical Cutter



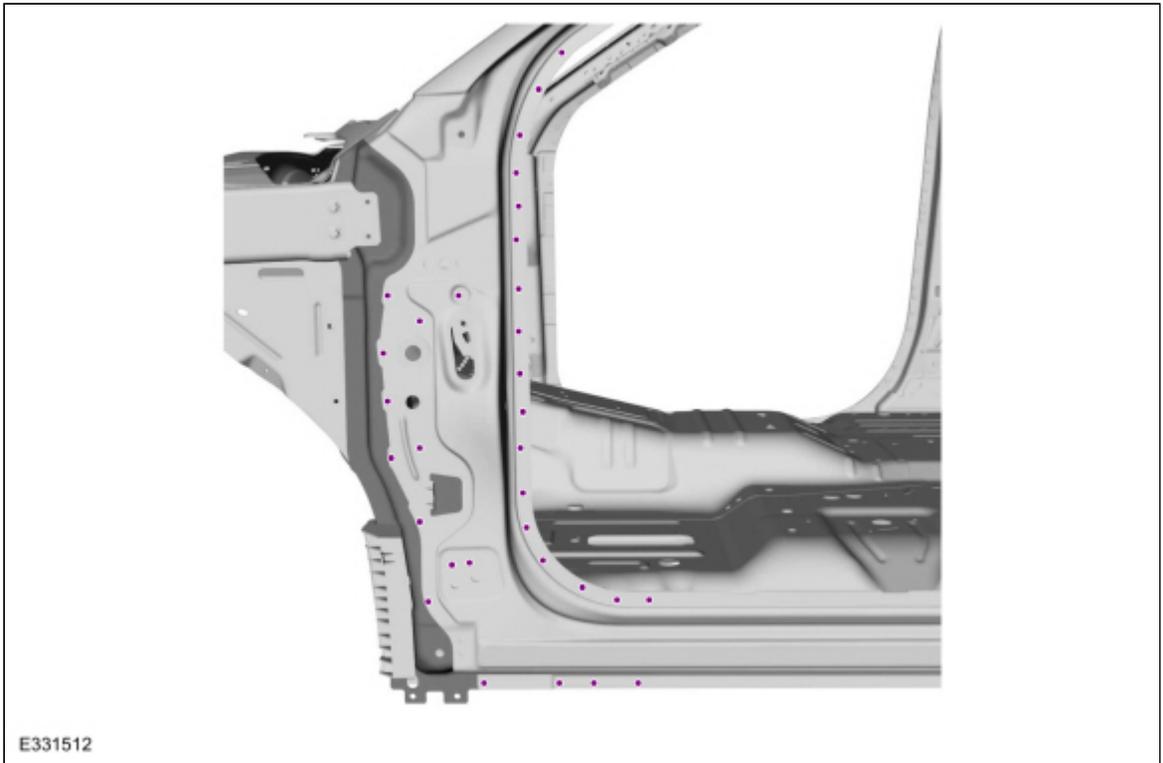
9. Remove and discard the FDS fasteners.
Use the General Equipment: Polydrive Bit Socket



- 10. Remove the SPR fasteners.
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer
Use the General Equipment: Belt Sander

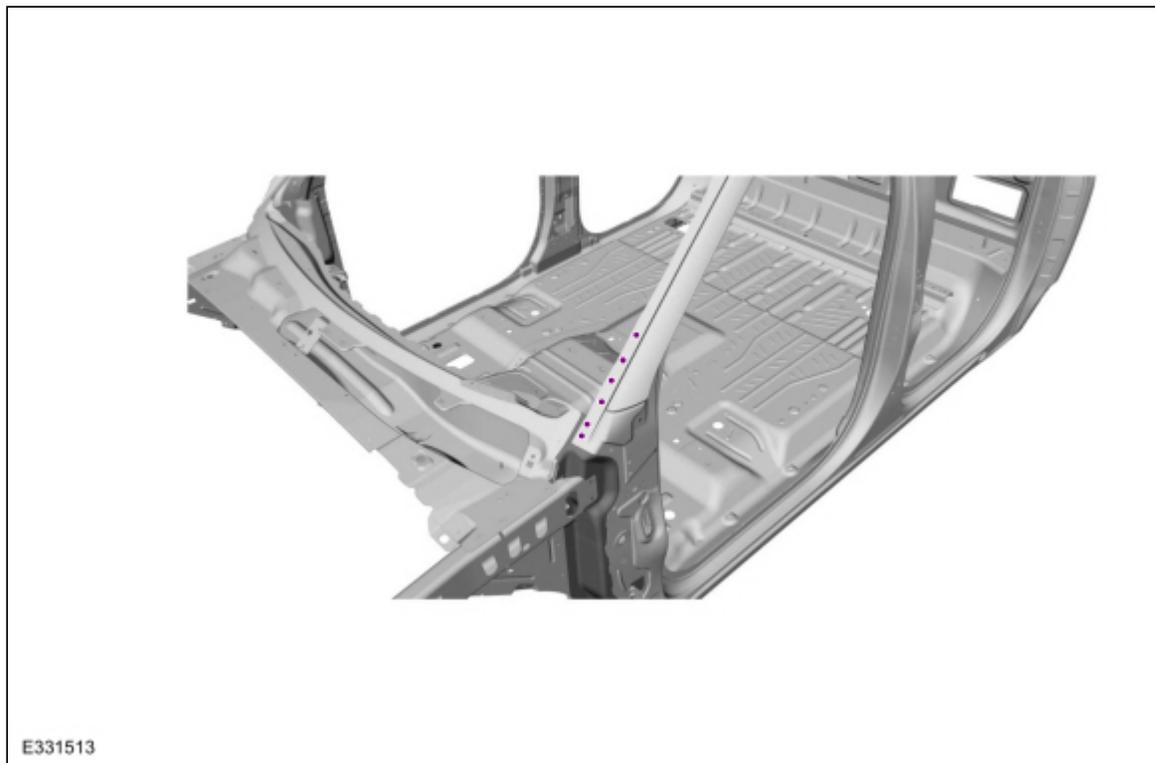
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- 11. Remove the SPR fasteners in the windshield opening.
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer
Use the General Equipment: Belt Sander

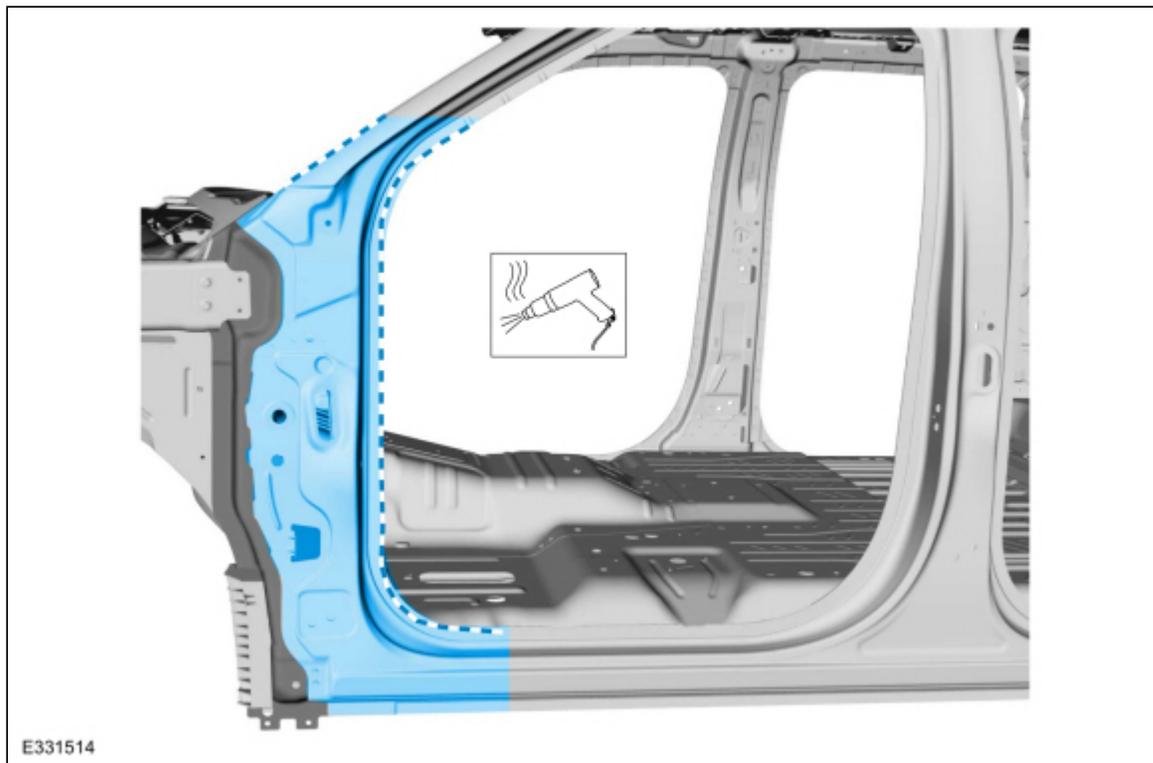




12. **NOTE:** Aluminum body panels are highly receptive to heat transfer. With the extensive use of structural adhesives and non-structural sealers used in vehicle construction, the potential of heat transfer could impact adhesives and sealers in non-associated panels during the repair process. Many repairs areas that utilize structural adhesive may be separated after fastener removal by using a panel chisel along the joint/flange. Using heat not exceeding 425° F to loosen a bonded panel should only be done when all panels in the joint will be replaced and new adhesive applied.

Break the adhesive bond and remove the outer side section.
Use the General Equipment: Hot Air Gun





Installation

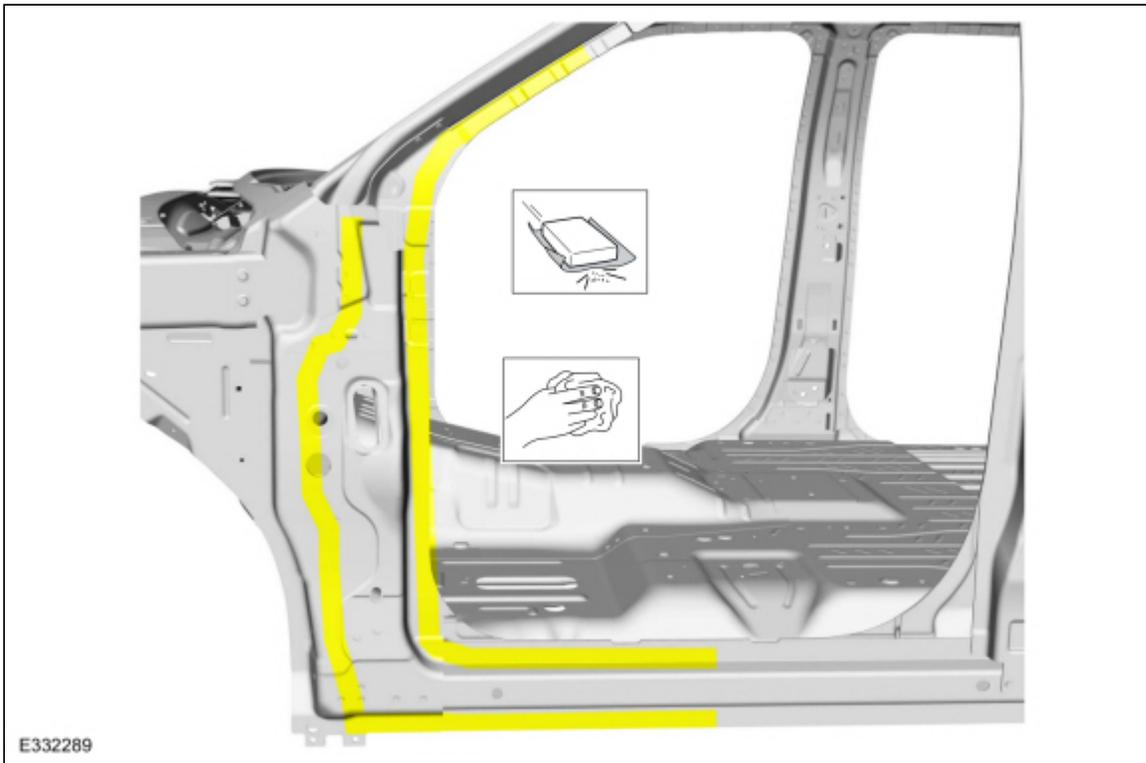
NOTICE: Body side sectioning is prohibited within 50mm of door hinge, door striker and restraints anchoring points.

NOTE: Do not install SPR fasteners directly in old SPR fastener location. SPR fasteners must be installed adjacent to the original location matching original quantity.

NOTE: Solid rivets or blind rivet fasteners may be used in place of SPR fasteners after enlarging existing holes to 6.5 mm.

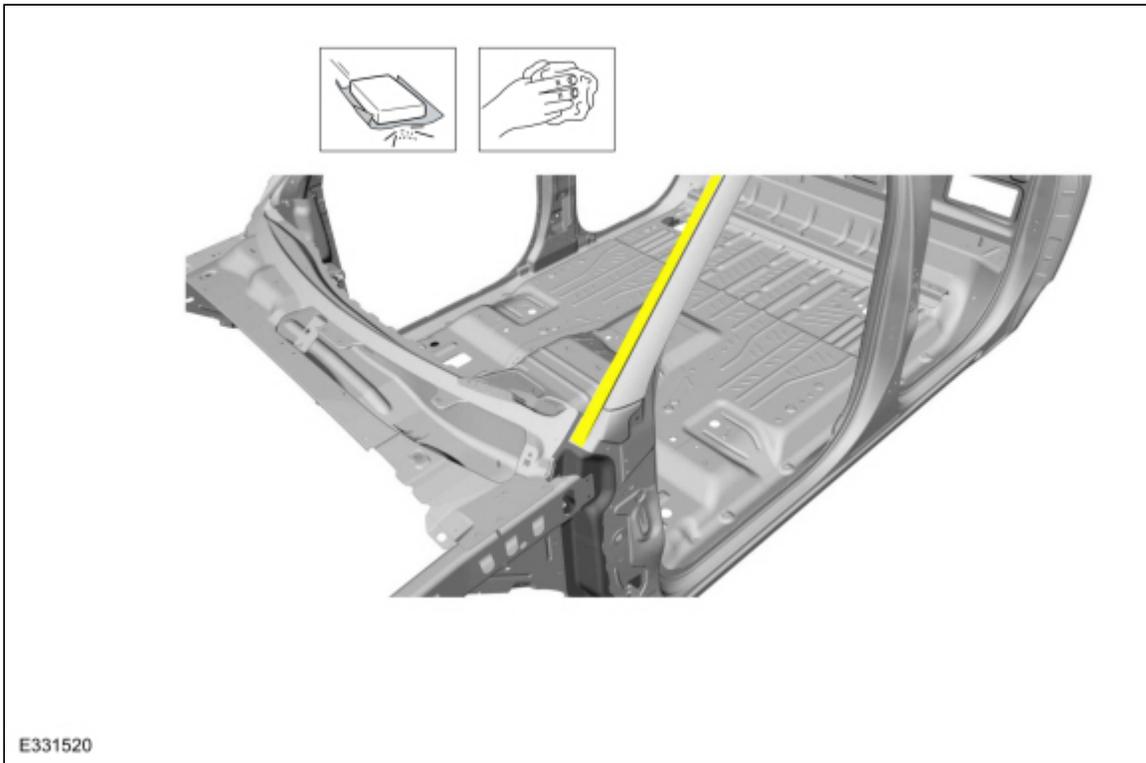
1. Sand with 80 grit sand paper to remove old adhesive and clean.





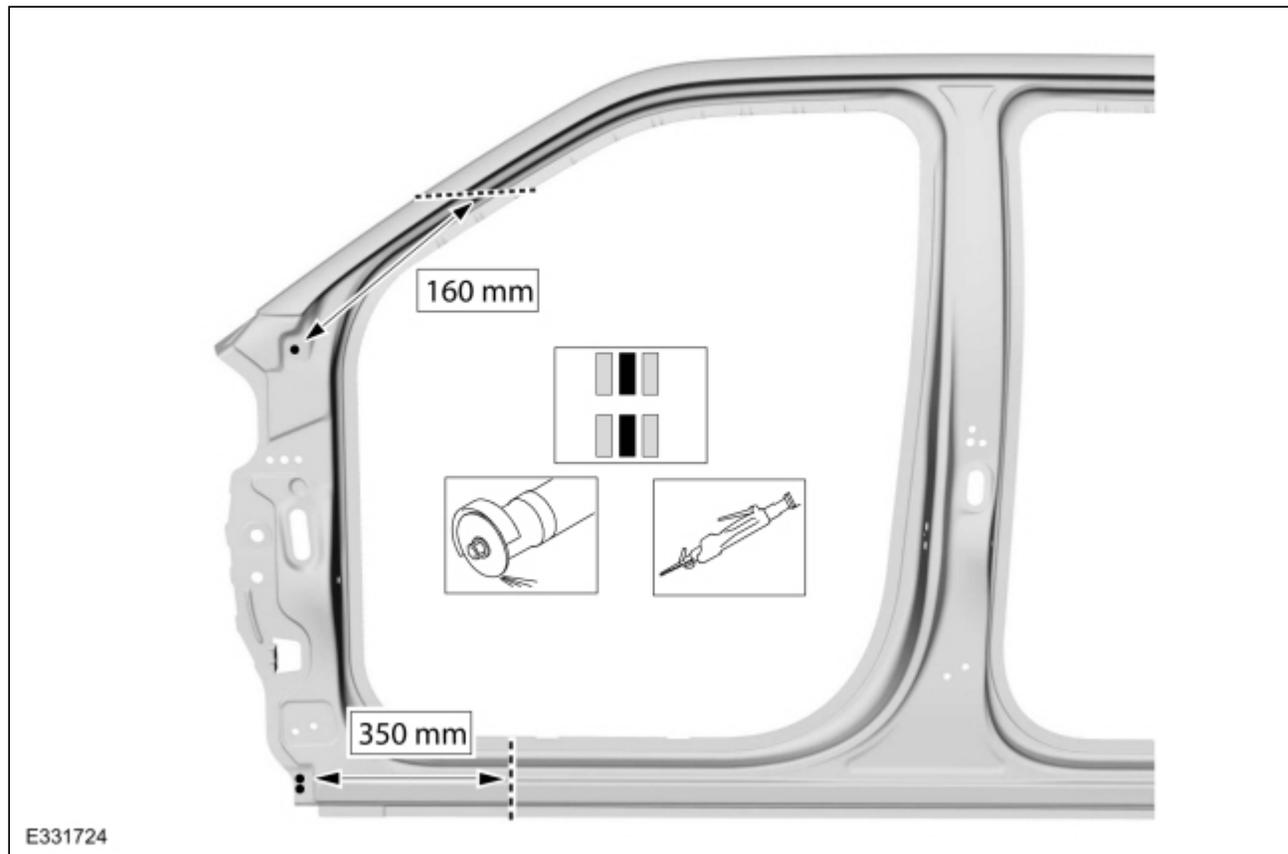
2. Sand with 80 grit sand paper to remove old adhesive from windshield opening and clean.





- 3. Cut service panel to fit repair.
Use the General Equipment: Air Body Saw
Use the General Equipment: Spherical Cutter



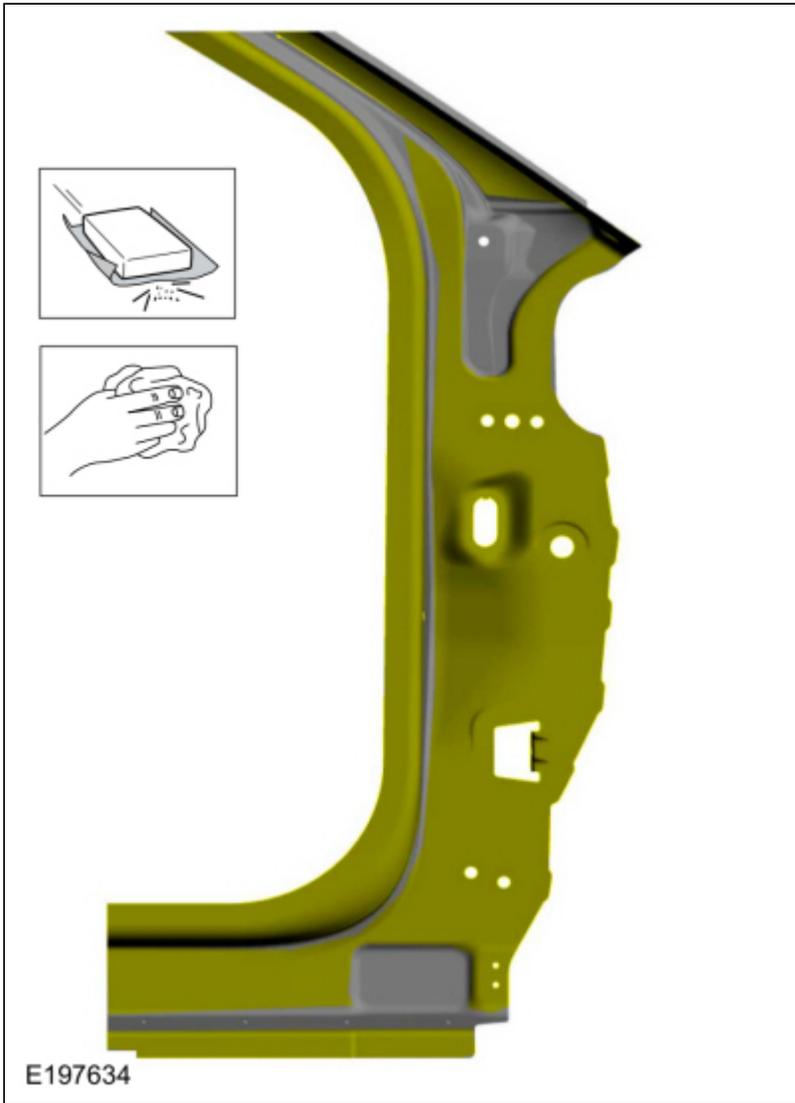


4. **NOTE:** *The use of a backer plate when creating butt weld joints will produce a stronger and more uniform repair.*

Create a backer plate from an unused portion of the old body panel or service replacement panel and install on the vehicle at each sectioning joint. Refer to: [Joining Techniques](#) (501-25 Body Repairs - General Information, General Procedures).

5. Sand using 80 grit sand paper to remove e-coat and clean as indicated.

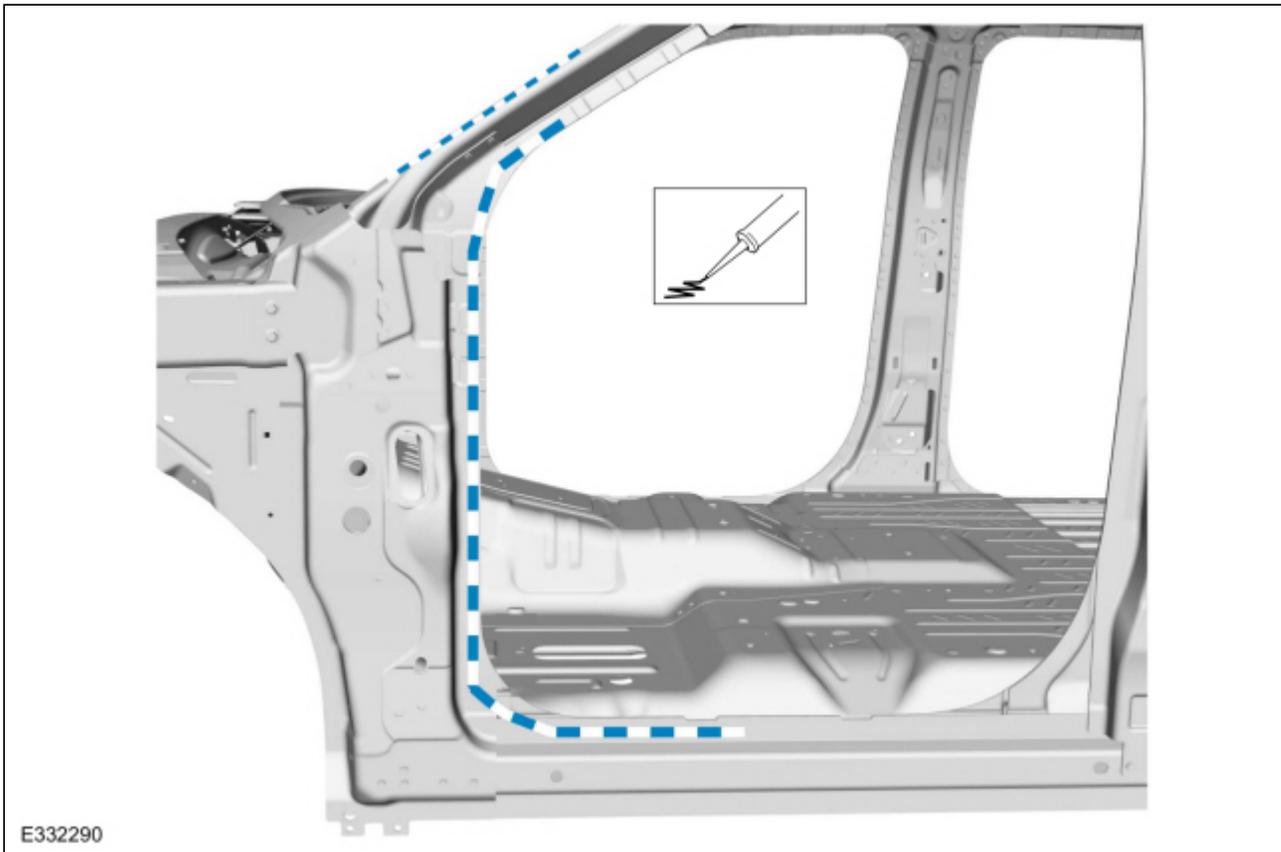




6. Apply adhesive.

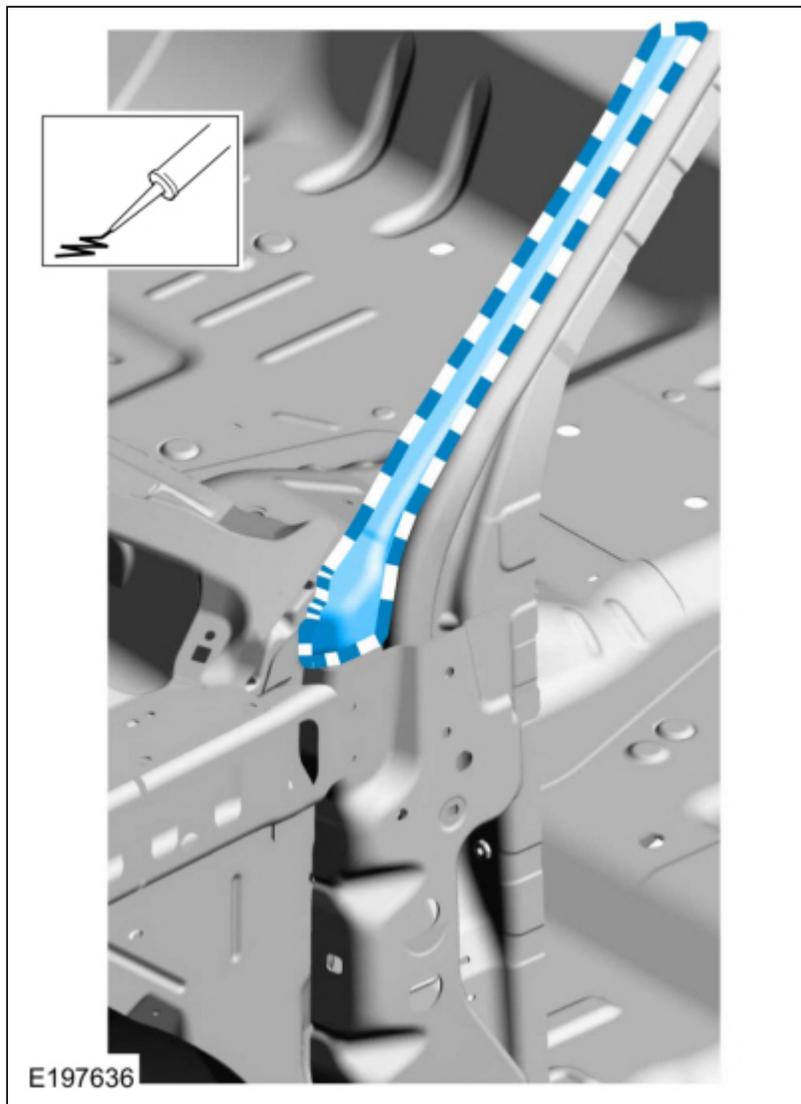
Material: Metal Bonding Adhesive / TA-1, TA-1-B, 3M™ 08115, LORD Fusor® 108B





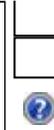
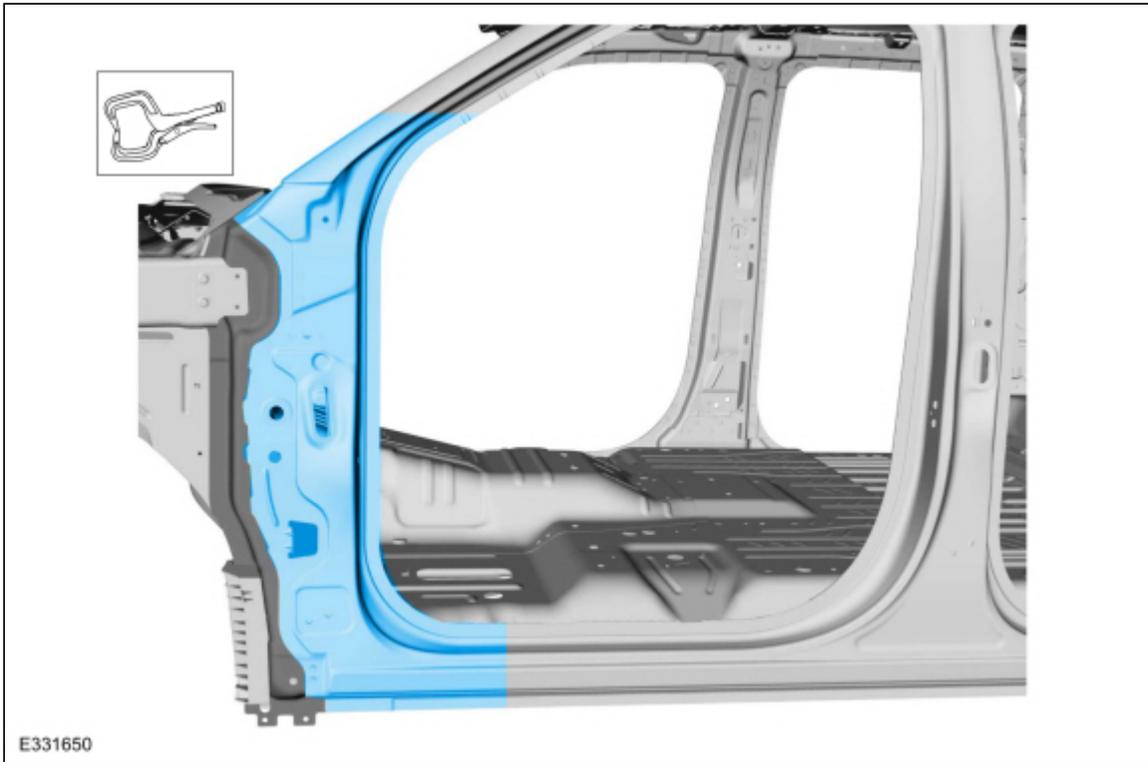
- 7. Apply adhesive to the windshield opening.
Material: Metal Bonding Adhesive / TA-1, TA-1-B, 3M™ 08115, LORD Fusor® 108B





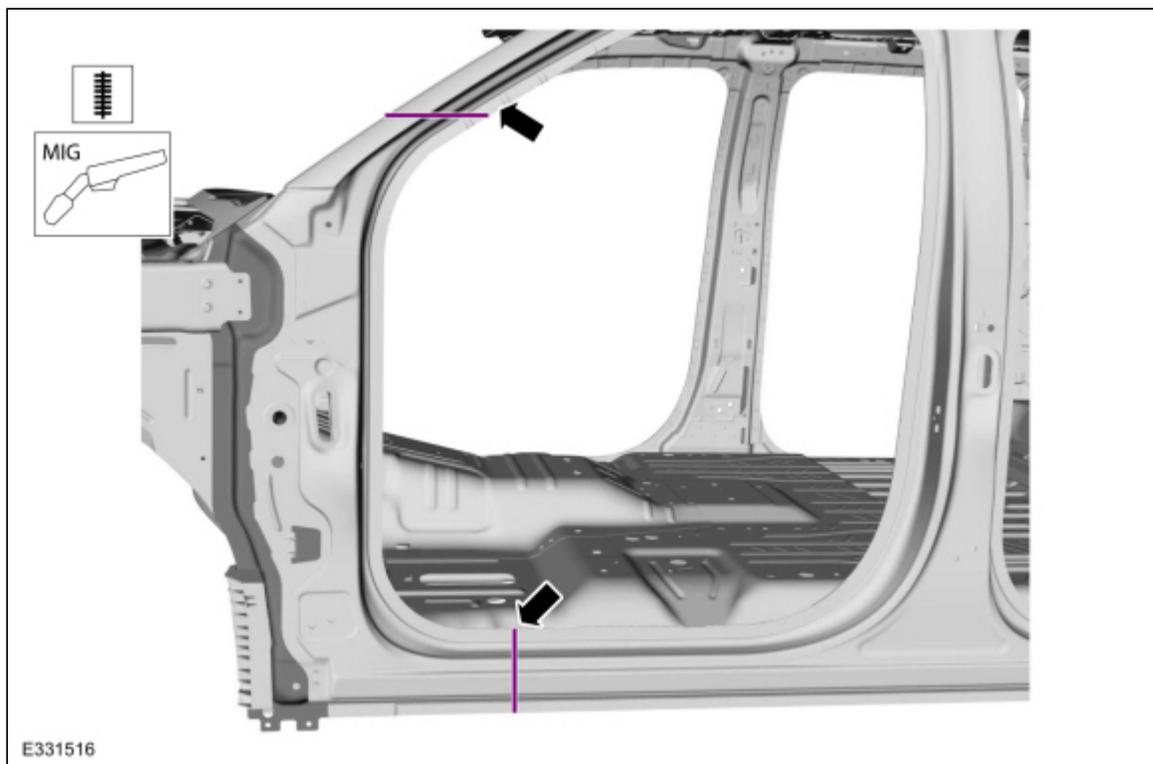
- 8. Install the service panel and clamp in position.
Use the General Equipment: Locking Pliers





9. Complete backer plate installation to replacement panel.
Refer to: [Joining Techniques](#) (501-25 Body Repairs - General Information, General Procedures).
10. Seam weld sectioning joints using a MIG welder set up for aluminum welding.
Use the General Equipment: MIG/MAG Welding Equipment





11. **NOTE:** Do not install SPR fasteners directly in old SPR fastener location. SPR fasteners must be installed adjacent to the original location matching original quantity.

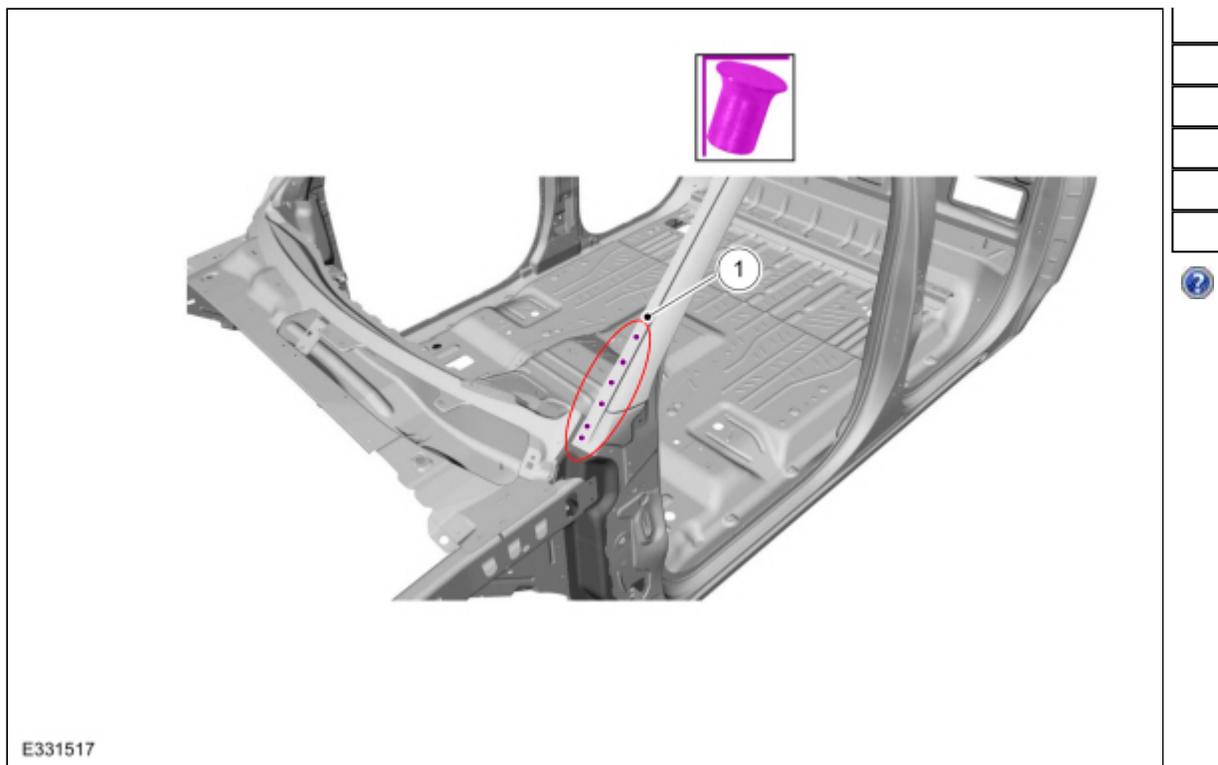
NOTE: Solid rivets or blind rivet fasteners may be used in place of SPR fasteners after enlarging existing holes to 6.5 mm.

Install fasteners in windshield opening.

Item	SPR Number	SPR Code	Henrob® Car-O- Liner®, CMO®, Chief®, Spanesi® Wielande and Schill® Mandrel	Pro-Spot® Mandrel	Blind Rivet	Solid Rivet	Rivnut®
1	W708713-S900	AS	DZ09-025/H	SA-0400-SA-0402	-	W790377-S900	-

Refer to: [Joining Techniques](#) (501-25 Body Repairs - General Information, General Procedures).
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer





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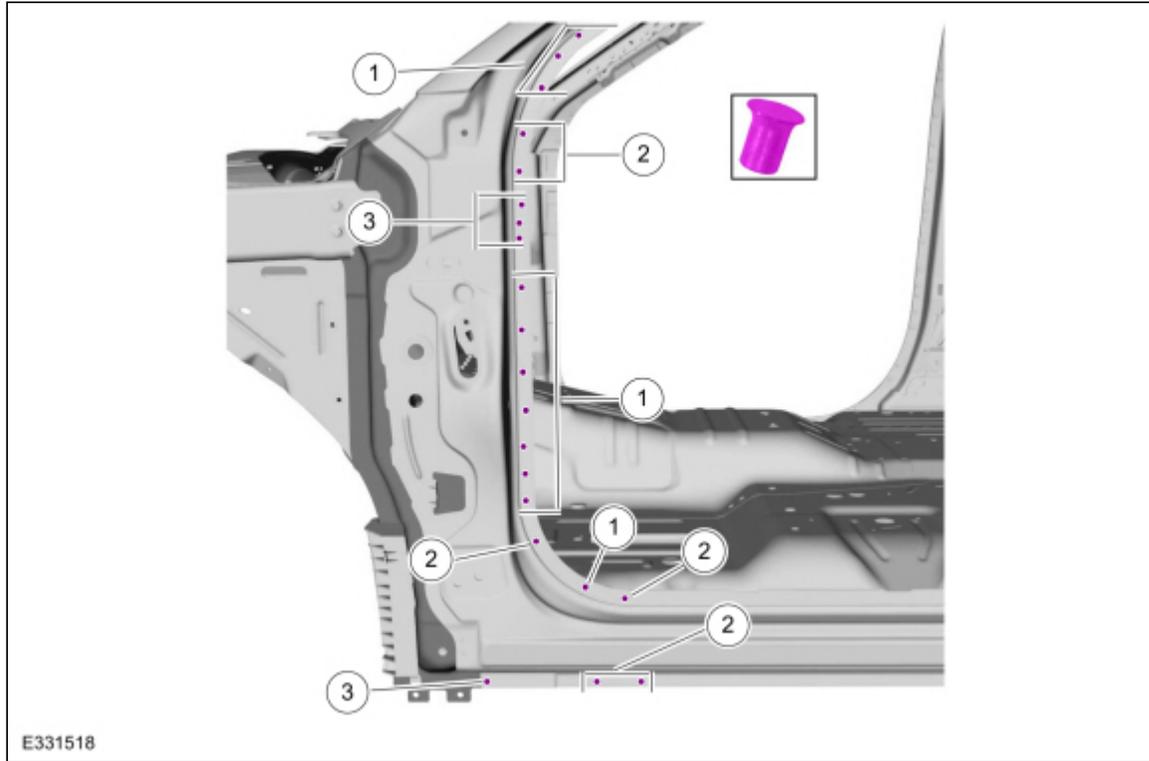
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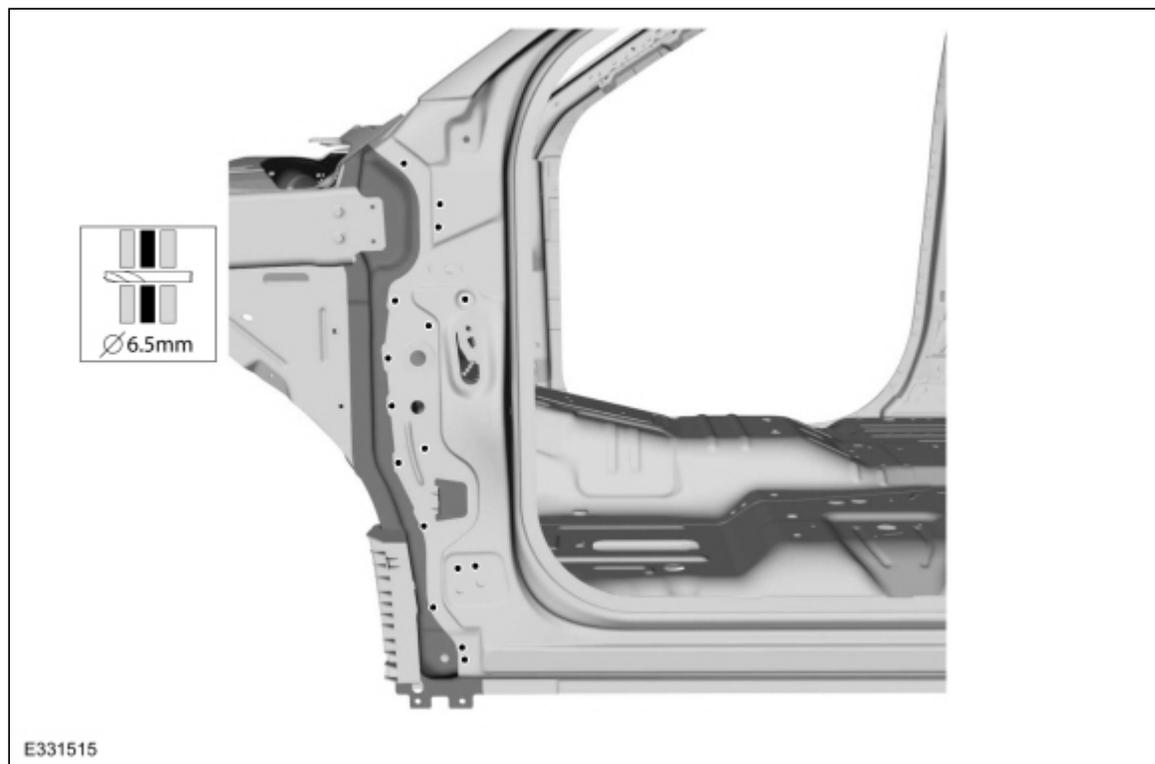
Install fasteners in body side.

Item	SPR Number	SPR Code	Henrob® Car-O- Liner®, CMO®, Chief®, Spanesi® Wielande and Schill® Mandrel	Pro-Spot® Mandrel	Blind Rivet	Solid Rivet	Rivnut®
1	W708713-S900	AS	DZ09-025/H	SA-0400/SA-0401	-	W790376-S900	-
2	W717186-S900	EN	DG11-220/H	SA-0400/SA-0401	-	W790377-S900	-
3	W710246-S900	BN	DP10-200/H	SA-0400/SA-0402	-	W790377-S900	-

Refer to: [Joining Techniques](#) (501-25 Body Repairs - General Information, General Procedures).
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer



- 13. Drill 6.5 mm holes as indicated.
Use the General Equipment: 6.5 mm Drill Bit



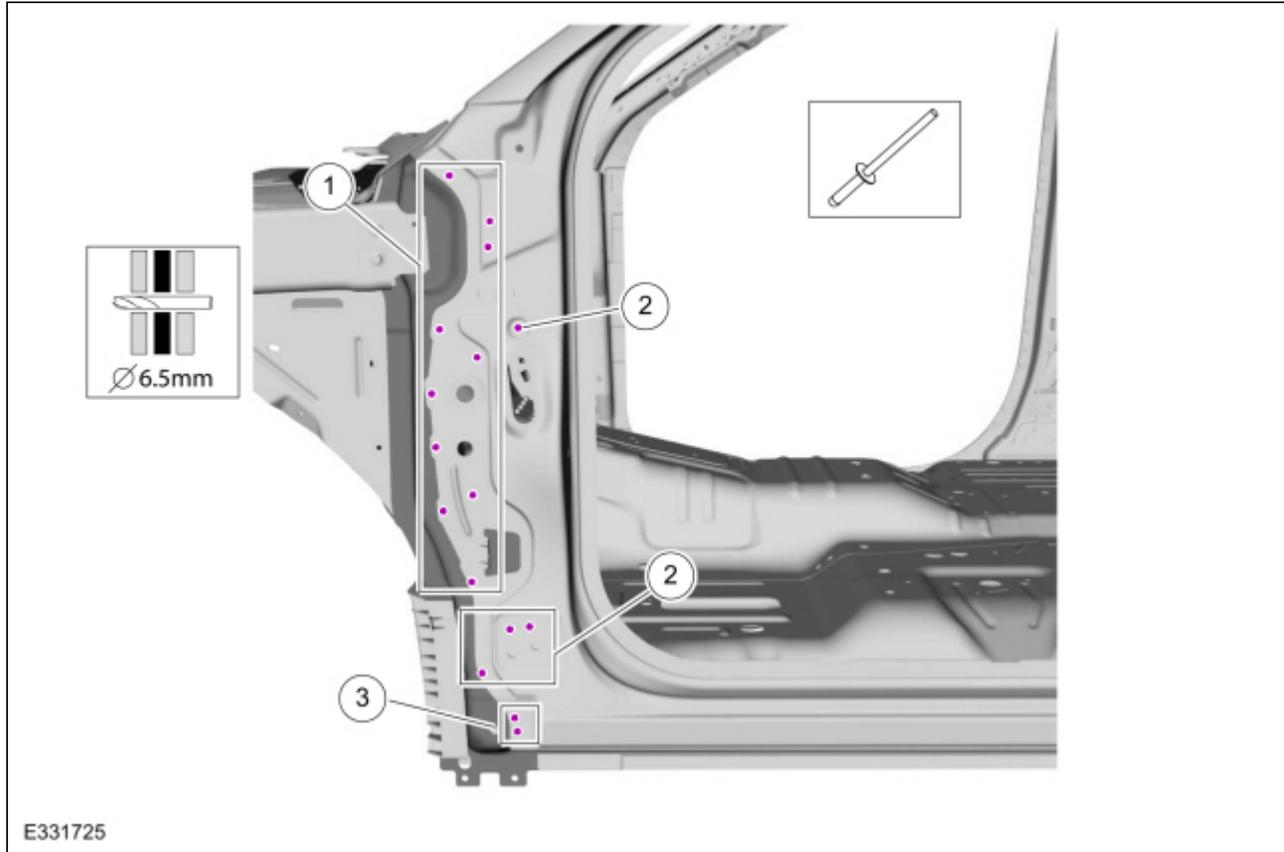
14. **NOTE:** Do not install SPR fasteners directly in old SPR fastener location. SPR fasteners must be installed adjacent to the original location matching original quantity.

NOTE: Solid rivets or blind rivet fasteners may be used in place of SPR fasteners after enlarging existing holes to 6.5 mm.

Install fasteners.

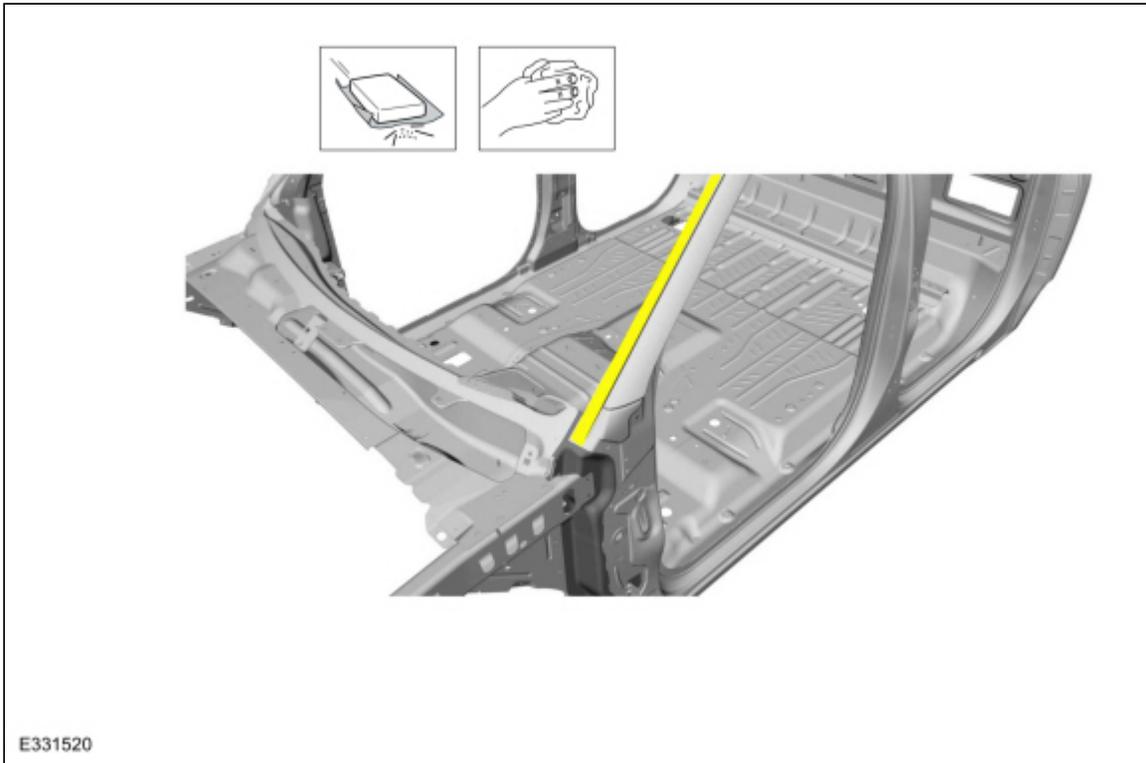
Item	SPR Number	SPR Code	Henrob® Car-O- Liner®, CMO®, Chief®, Spanesi® Wielande and Schill® Mandrel	Pro-Spot® Mandrel	Blind Rivet	Solid Rivet	Rivnut®
1	-	-	-	-	W707638-S900C	-	-
2	-	-	-	-	W708777-S900C	-	-
3	-	-	-	-	W702554-S900C	-	-

Refer to: [Joining Techniques](#) (501-25 Body Repairs - General Information, General Procedures).
Use the General Equipment: Blind Rivet Gun



- 15. Metal finish all seams using typical aluminum metal finishing techniques and a fiber-based body filler.
Refer to: [Special Repair Considerations for Aluminum Repairs](#) (501-25 Body Repairs - General Information, Description and Operation).
- 16. Sand the windshield opening channel and clean.

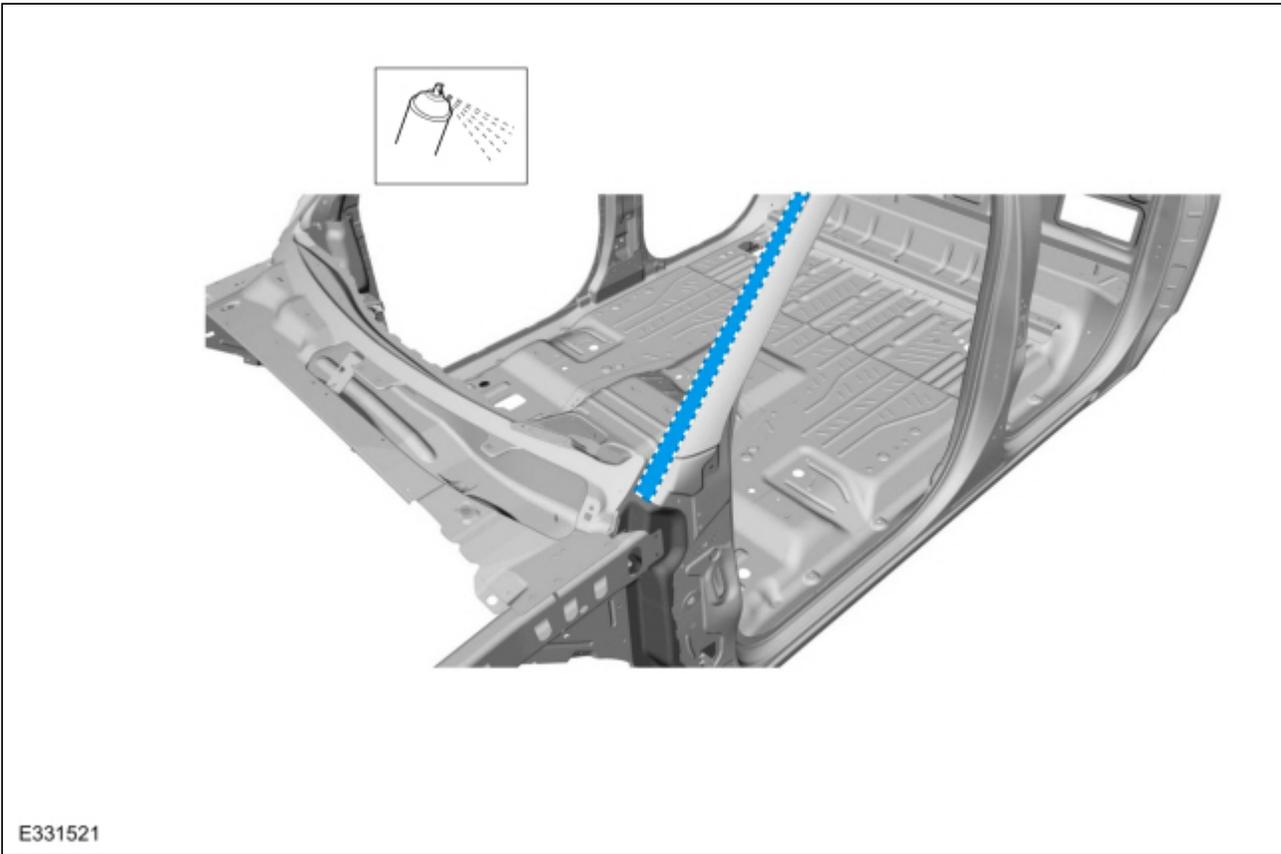




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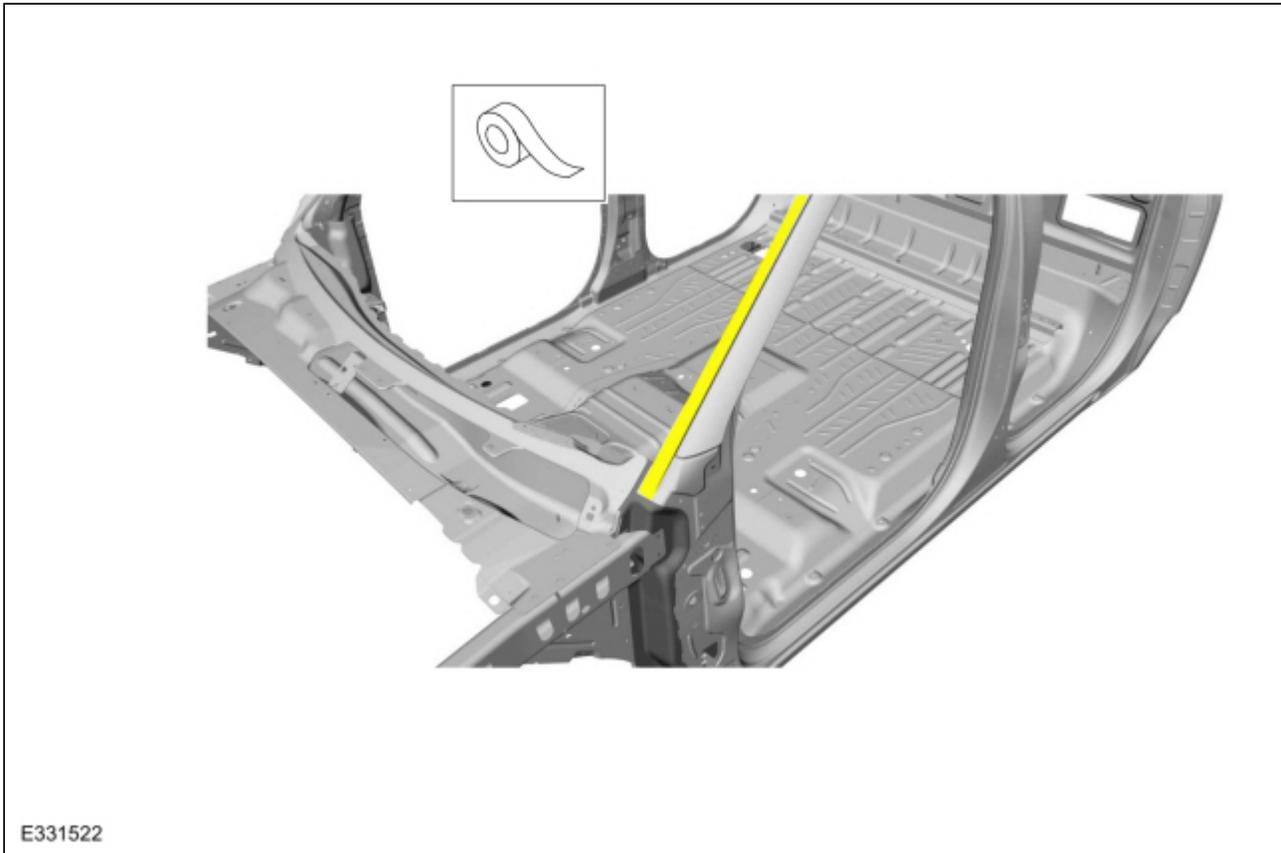
17. Prime the windshield opening channel using a Ford approved epoxy primer.





18. Mask the glass channel as indicated.



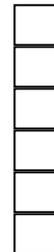


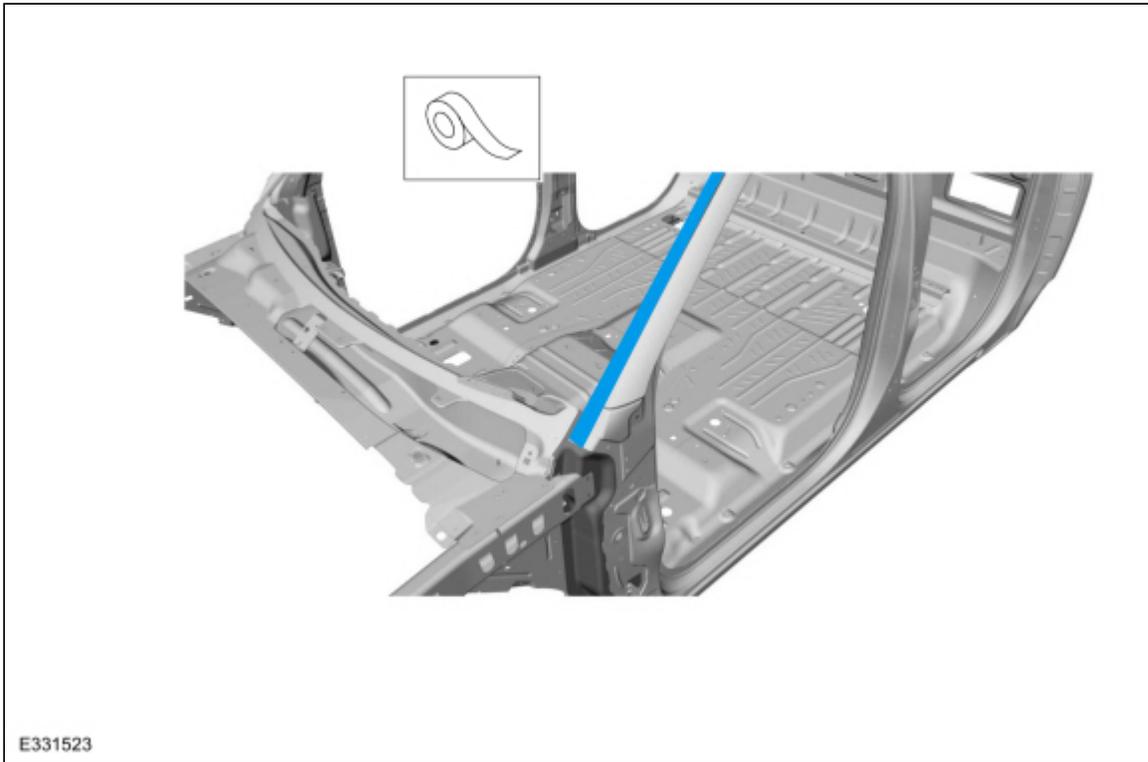
19. **NOTE:** *Apply seam sealer after priming the area.*

Sealing work: All areas must be sealed to production level.

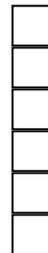
20. Prime and refinish the entire repair area using a Ford approved paint system and typical refinishing techniques.

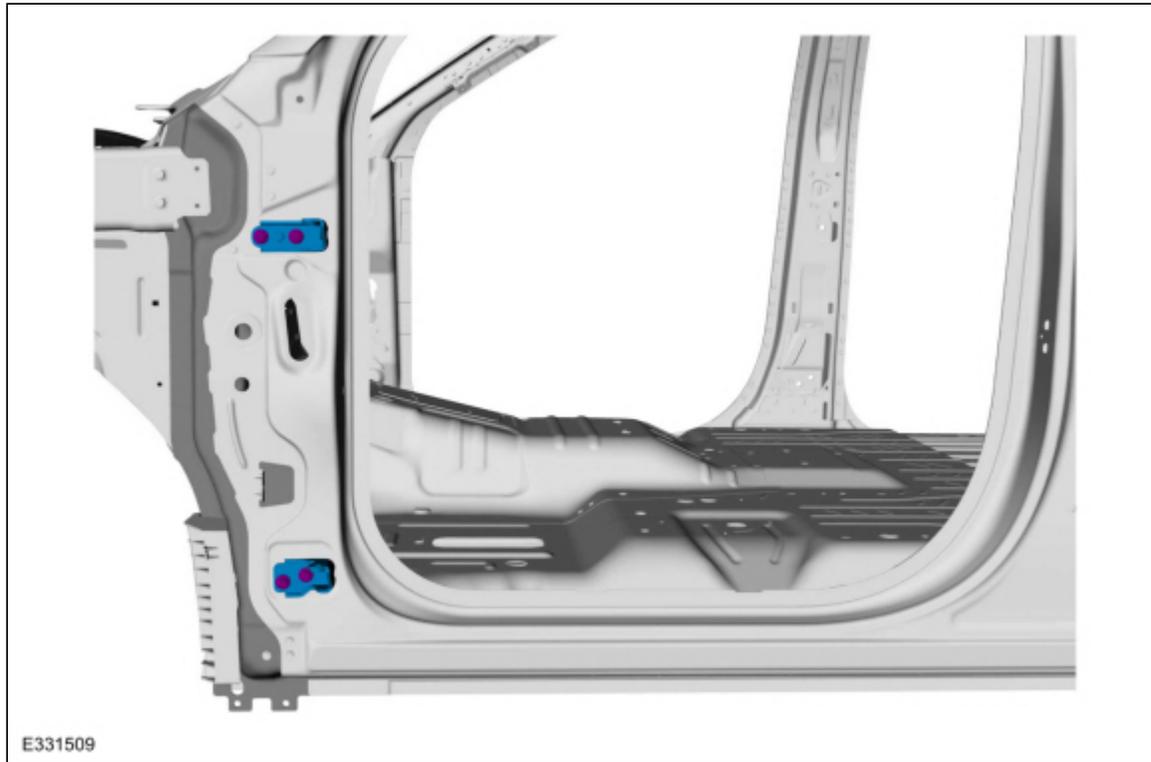
21. Remove the masking from the windshield opening channel.





22. Install the windshield.
Refer to: [Fixed Glass](#) (501-11 Glass, Frames and Mechanisms, General Procedures).
23. Install the front door hinges to the body.
Torque: 20 lb.ft (27 Nm)





24. Install the front door.
Refer to: [Front Door - Regular Cab/SuperCrew](#) (501-03 Body Closures, Removal and Installation).
Refer to: [Front Door - SuperCab](#) (501-03 Body Closures, Removal and Installation).
25. Install the front fender.
Refer to: [Fender](#) (501-02 Front End Body Panels, Removal and Installation).
26. Align the front door.
Refer to: [Front Door Alignment - Regular Cab/SuperCrew](#) (501-03 Body Closures, General Procedures).
Refer to: [Front Door Alignment - SuperCab](#) (501-03 Body Closures, General Procedures).
27. Repower the **SRS**
Refer to: [Supplemental Restraint System \(SRS\) Repowering](#) (501-20B Supplemental Restraint System, General Procedures).

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