

501-29 Side Panel Sheet Metal Repairs
Removal and Installation

2021 F-150

Procedure revision date: 10/23/2020

Side Panel - SuperCab

Special Tool(s) / General Equipment

6.5 mm Drill Bit
Scraper for Straight Edges
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	-
Seam Sealer TA-2-B, 3M™ 08308, LORD Fusor® 803DTM	-
Sika® SikaTack® MACH 60 / Sika® SikaTack® MACH 30 / Dow® BETASEAL™ Express	-
Roof Ditch Sealer 3M™ 08307, LORD Fusor® 129	-
Flexible Foam Repair 3M™ 08463, LORD Fusor® 121	-

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.

1.  **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).

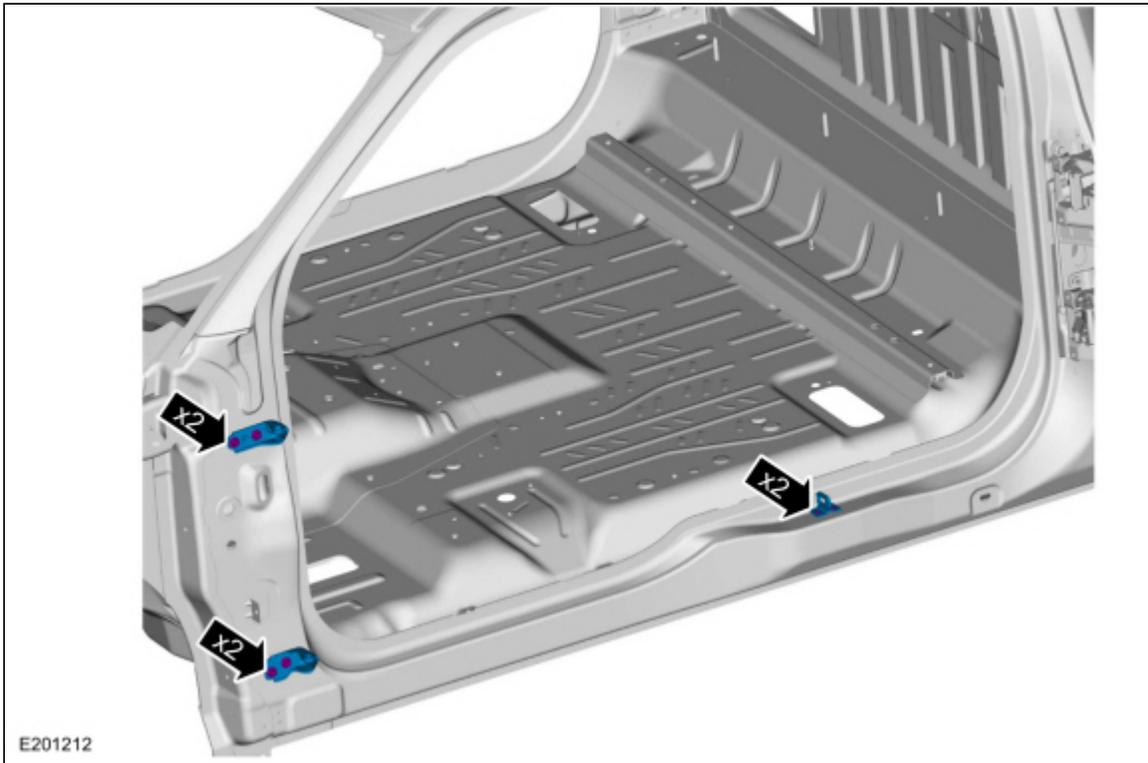
Refer to: [High Voltage System Health and Safety Precautions - Overview](#) (100-00 General Information, Description and Operation).

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

NOTE: Partial outer panel replacement is possible and reasonable depending on damage. The following procedure assumes full outer panel replacement. Removal and installation steps may be adjusted according to damage as necessary.

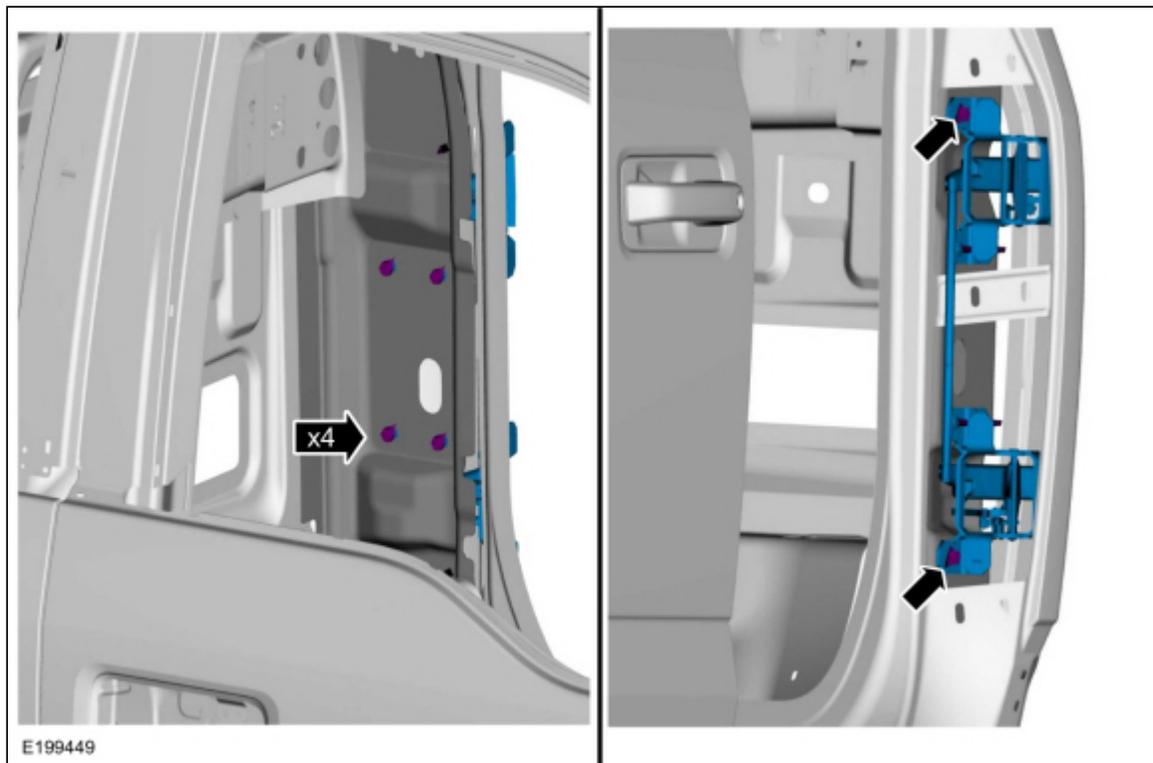
2. Depower the SRS.
Refer to: [Supplemental Restraint System \(SRS\) Depowering](#) (501-20B Supplemental Restraint System, General Procedures).
3. Remove the front fender.
Refer to: [Fender](#) (501-02 Front End Body Panels, Removal and Installation).
4. Remove the front and rear doors.
Refer to: [Front Door - SuperCab](#) (501-03 Body Closures, Removal and Installation).
Refer to: [Rear Door - SuperCab](#) (501-03 Body Closures, Removal and Installation).
5. Remove the pickup box.
Refer to: [Pickup Bed](#) (501-04 Pickup Bed and Platform Body, Removal and Installation).
6. Remove the A and C-pillar trim panels.
Refer to: [A-Pillar Trim Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).
Refer to: [C-Pillar Trim Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).
7. Remove the front door hinges and rear door striker.



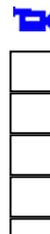


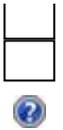
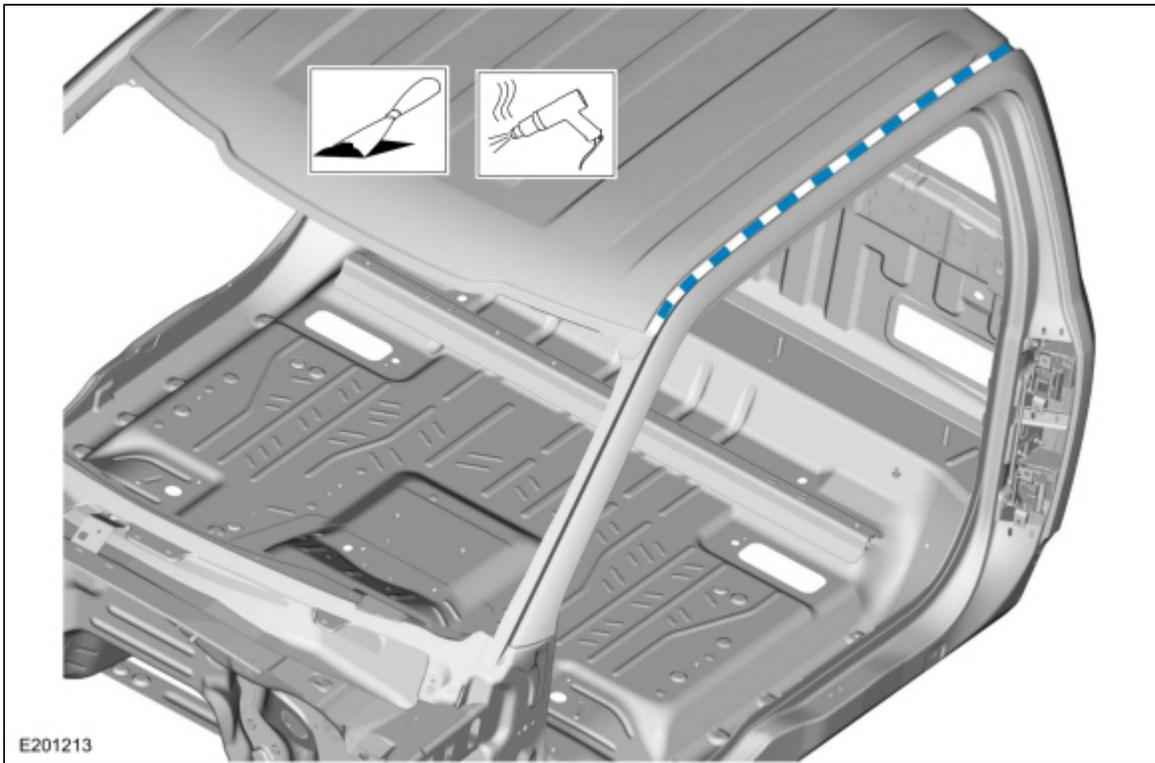
8. Remove the rear door hinge.





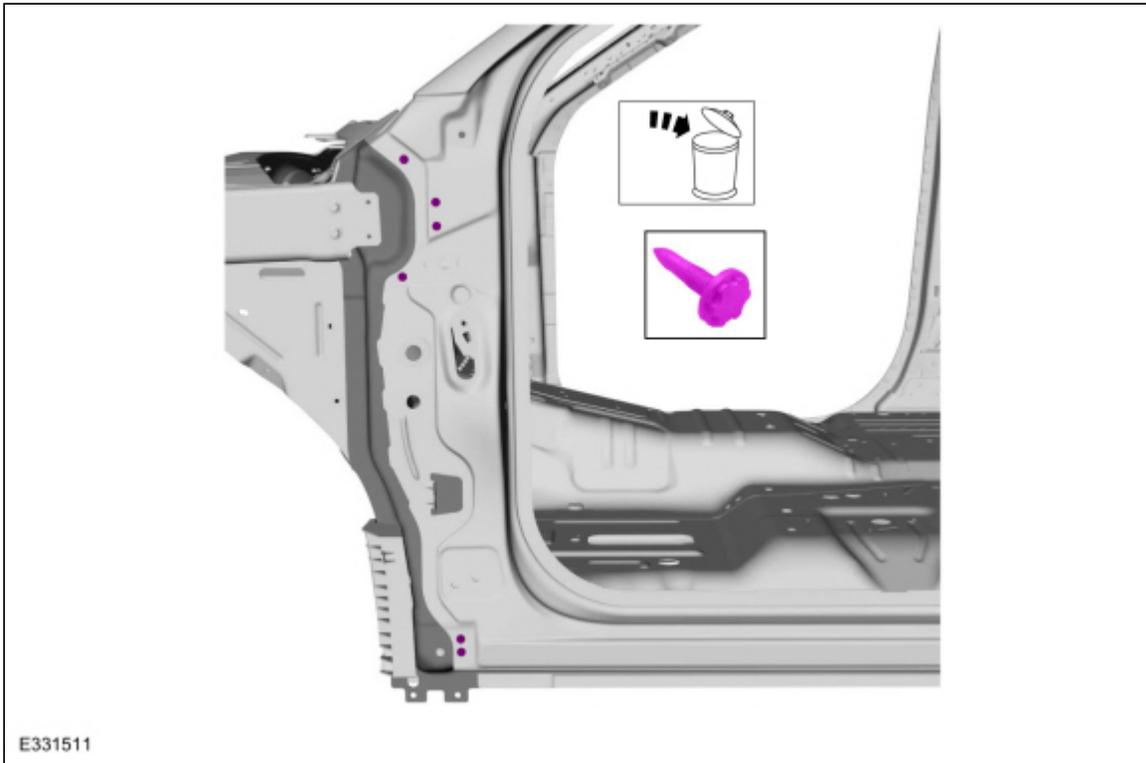
9. Remove the windshield and rear window glass.
Refer to: [Fixed Glass](#) (501-11 Glass, Frames and Mechanisms, General Procedures).
10. Remove the roof and cab corner mouldings.
Refer to: [Roof Moulding](#) (501-08 Exterior Trim and Ornamentation, Removal and Installation).
11. Remove the front and rear door opening scuff plates and weather strips.
12. Remove the side curtain air bag.
Refer to: [Side Curtain Airbag - SuperCab](#) (501-20B Supplemental Restraint System, Removal and Installation).
13. Remove the roof ditch sealer.
Use the General Equipment: Scraper for Straight Edges
Use the General Equipment: Hot Air Gun





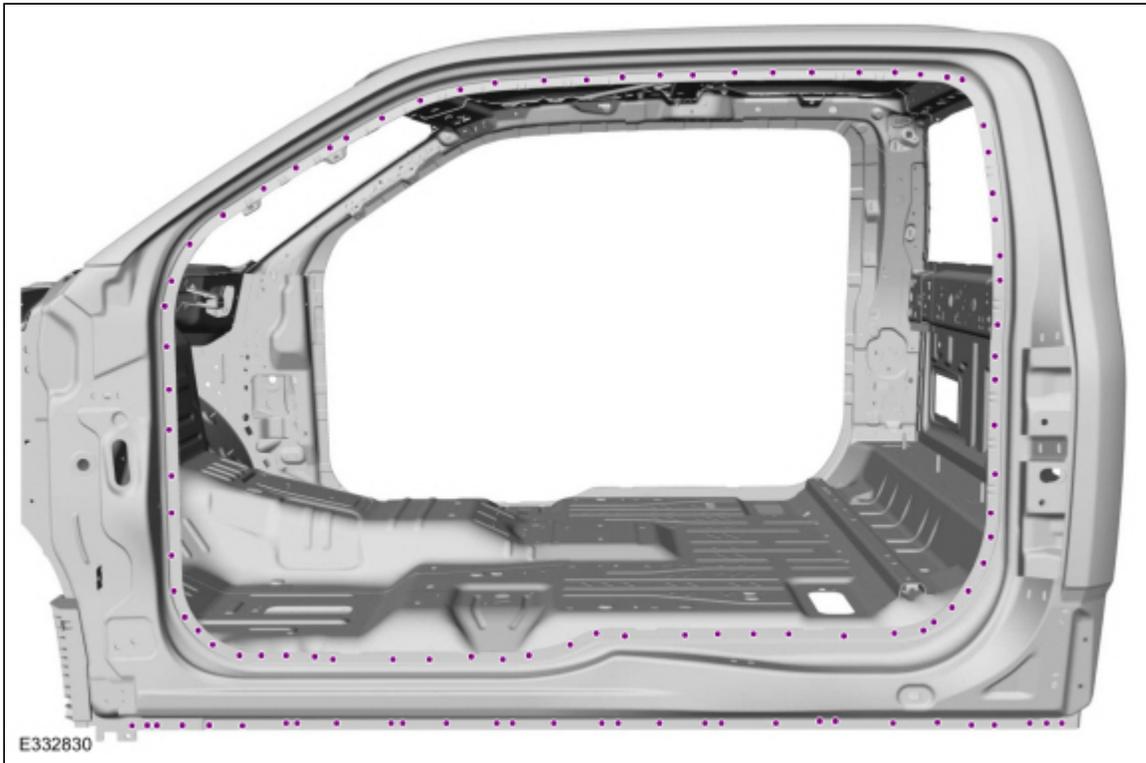
- 14. Remove and discard the FDS fasteners.
Use the General Equipment: Polydrive Bit Socket





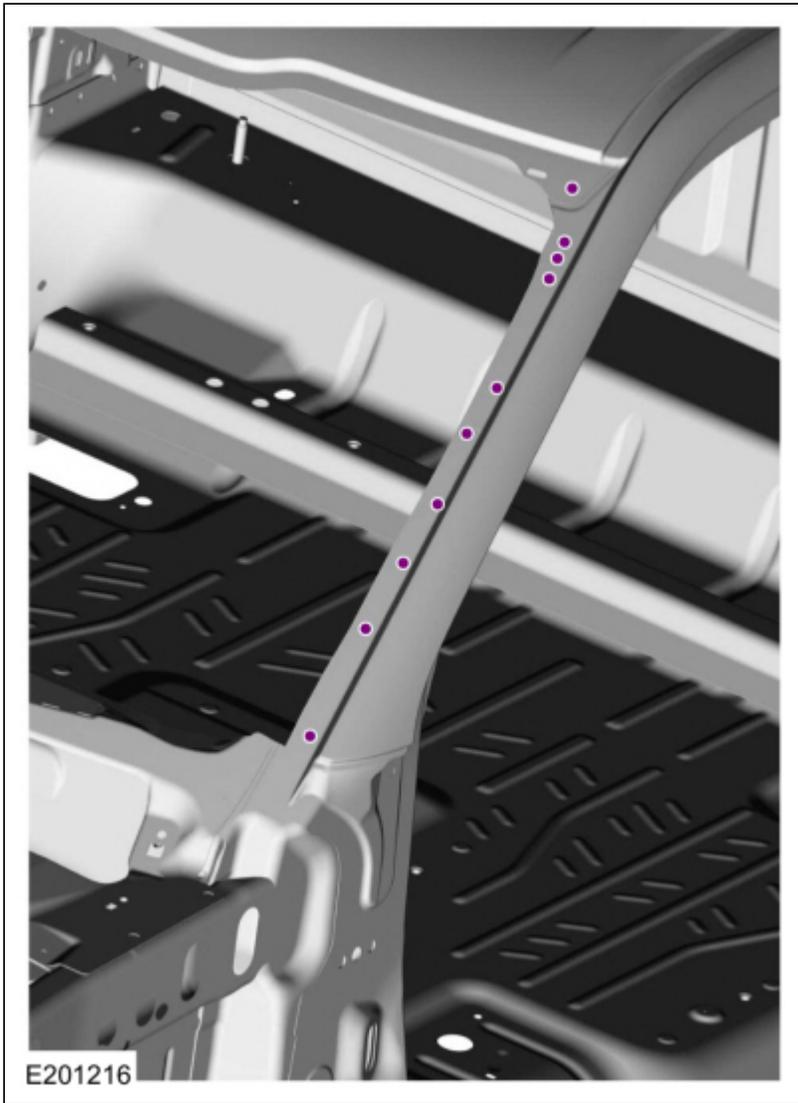
- 15. Remove the SPR fasteners in the repair area.
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer
Use the General Equipment: Belt Sander





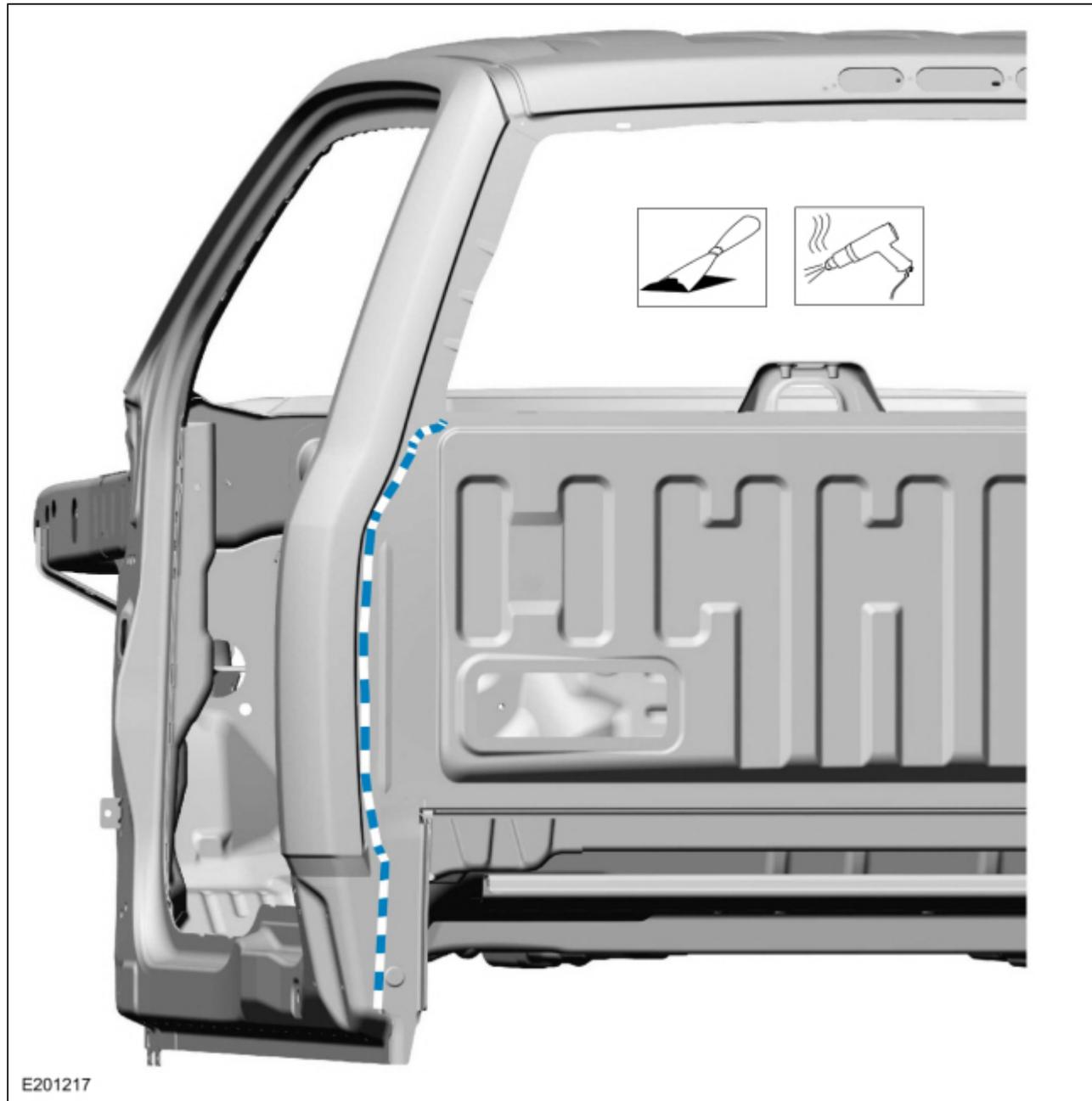
- 16. Remove the windshield channel SPR fasteners.
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer
Use the General Equipment: Belt Sander



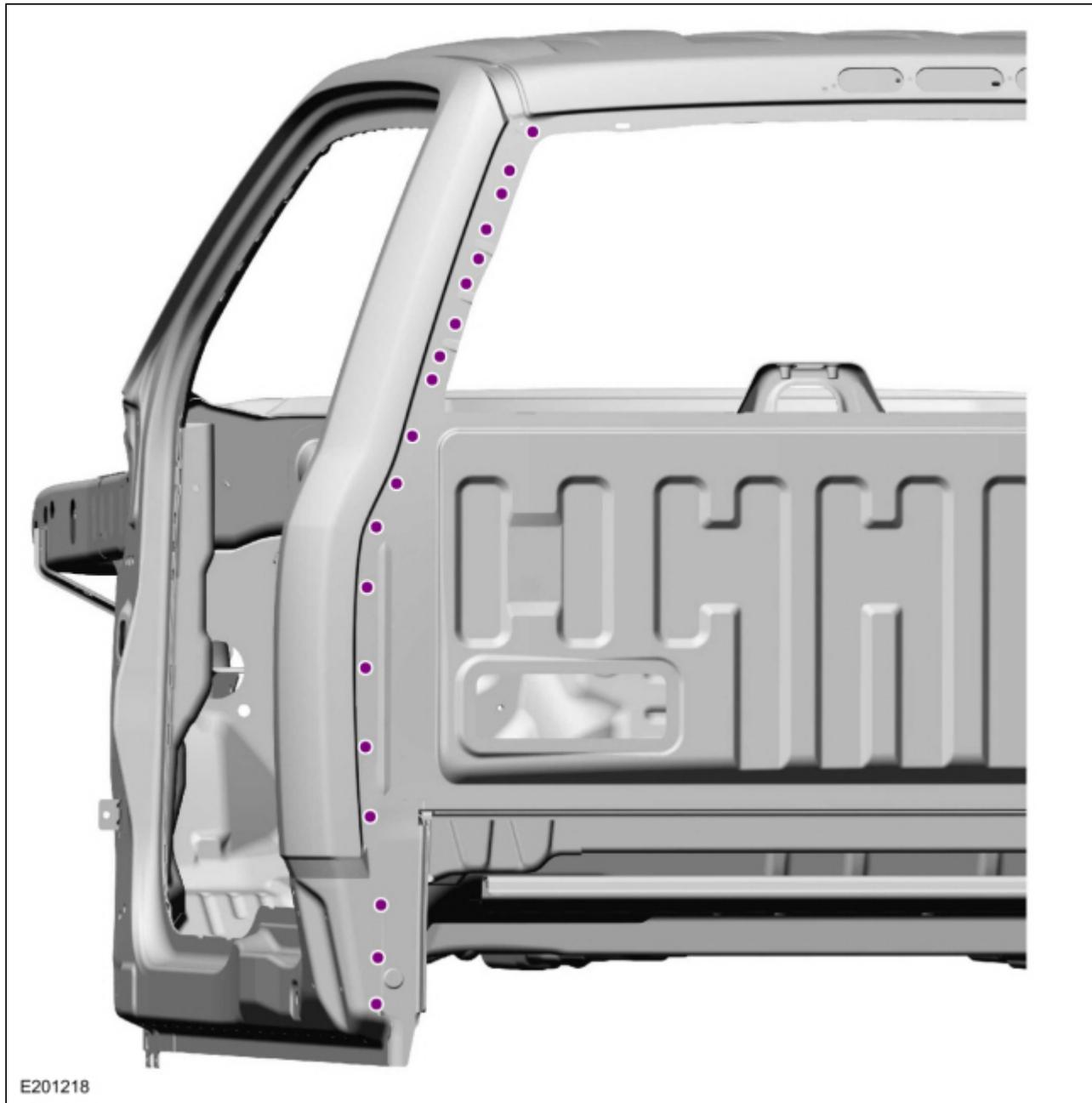


- 17. Remove the cab back seam sealer.
Use the General Equipment: Scraper for Straight Edges
Use the General Equipment: Hot Air Gun

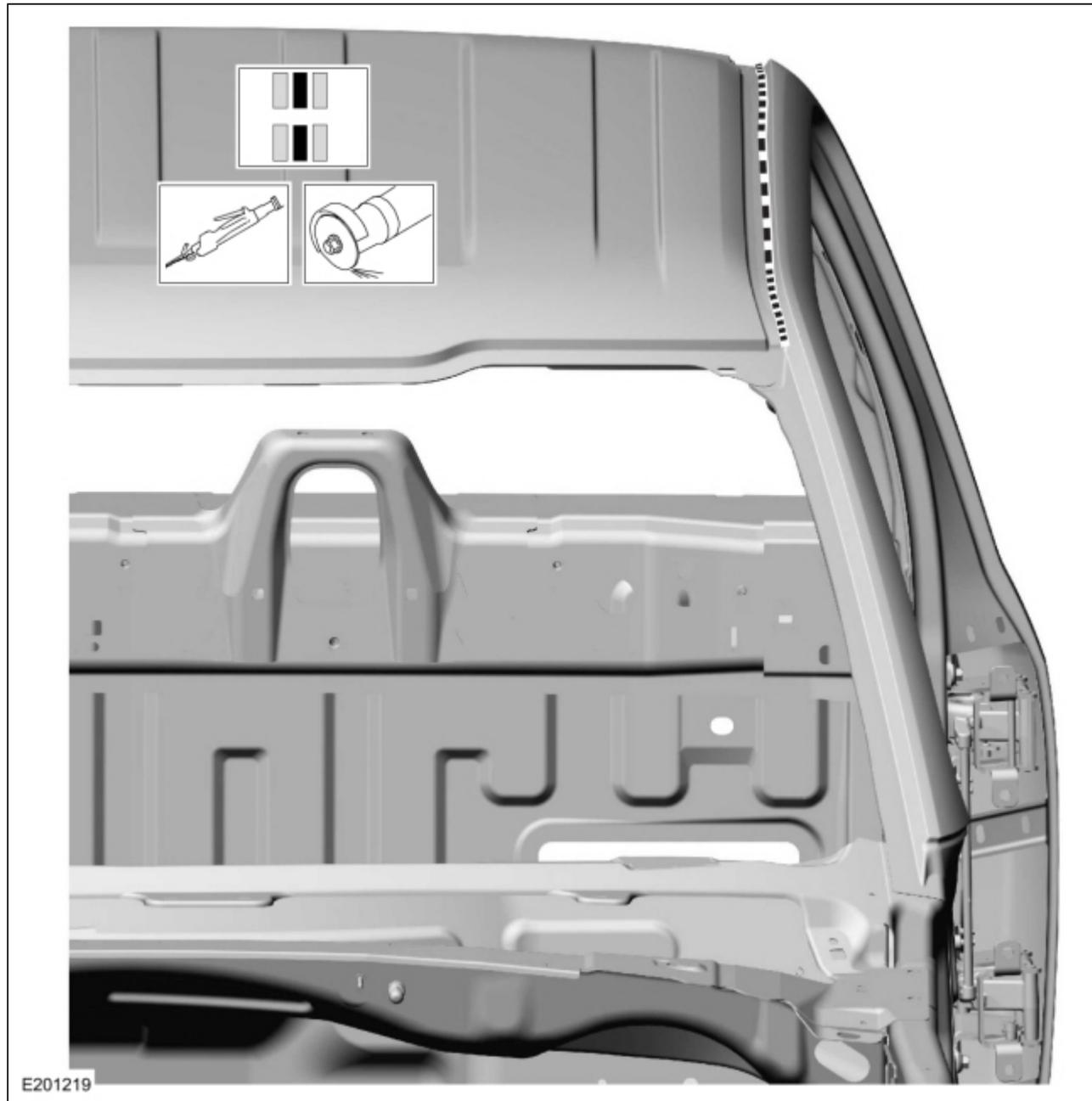




18. Remove the cab back SPR fasteners.
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer
Use the General Equipment: Belt Sander



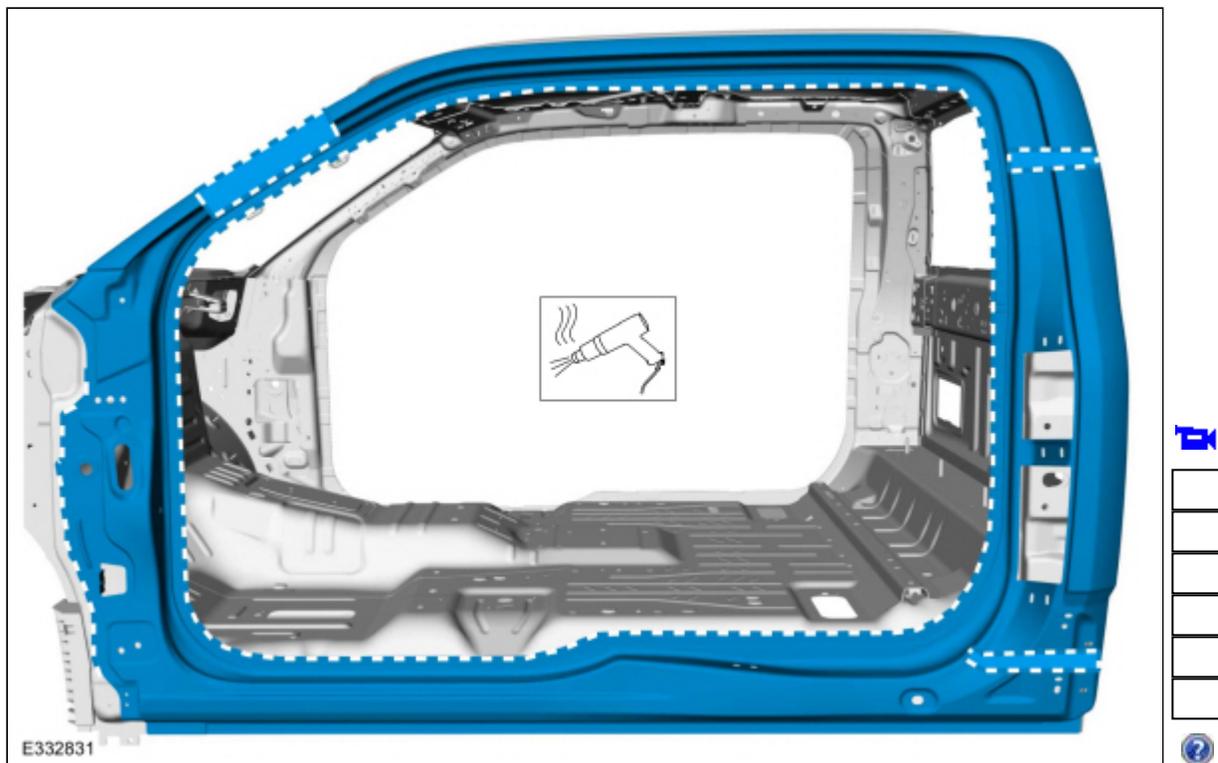
19. Carefully cut the **outer panel only** in the effected area.
Use the General Equipment: Air Body Saw
Use the General Equipment: Spherical Cutter



20. **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: Pay particular attention to NVH baffle and foam locations to aid in assembly.

Break the adhesive bond and remove the body side panel.
Use the General Equipment: Hot Air Gun



Installation

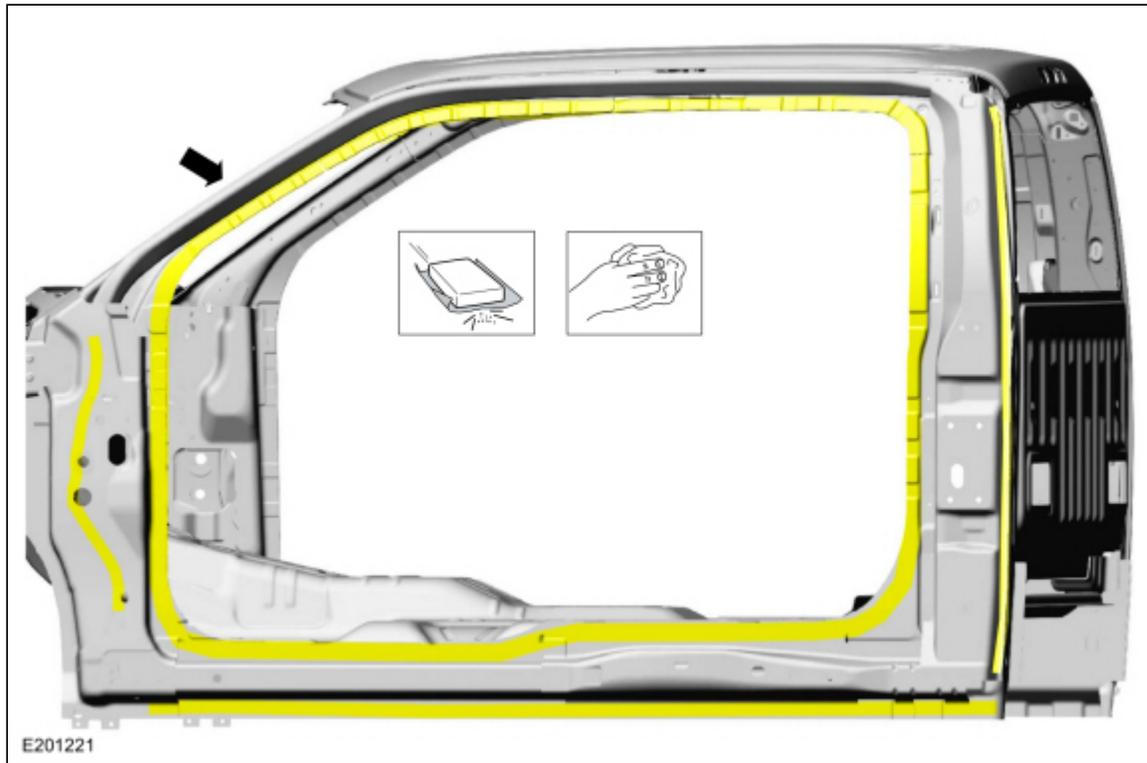
NOTICE: Body side sectioning is prohibited within 50 mm of door hinge, door striker and restraints anchoring points.

NOTE: SPR fasteners may not be placed directly over original SPR location. They must be placed adjacent to original location matching original quantity.

NOTE: Blind or solid rivet fasteners may be used in place of SPR fasteners after enlarging holes to 6.5 mm.

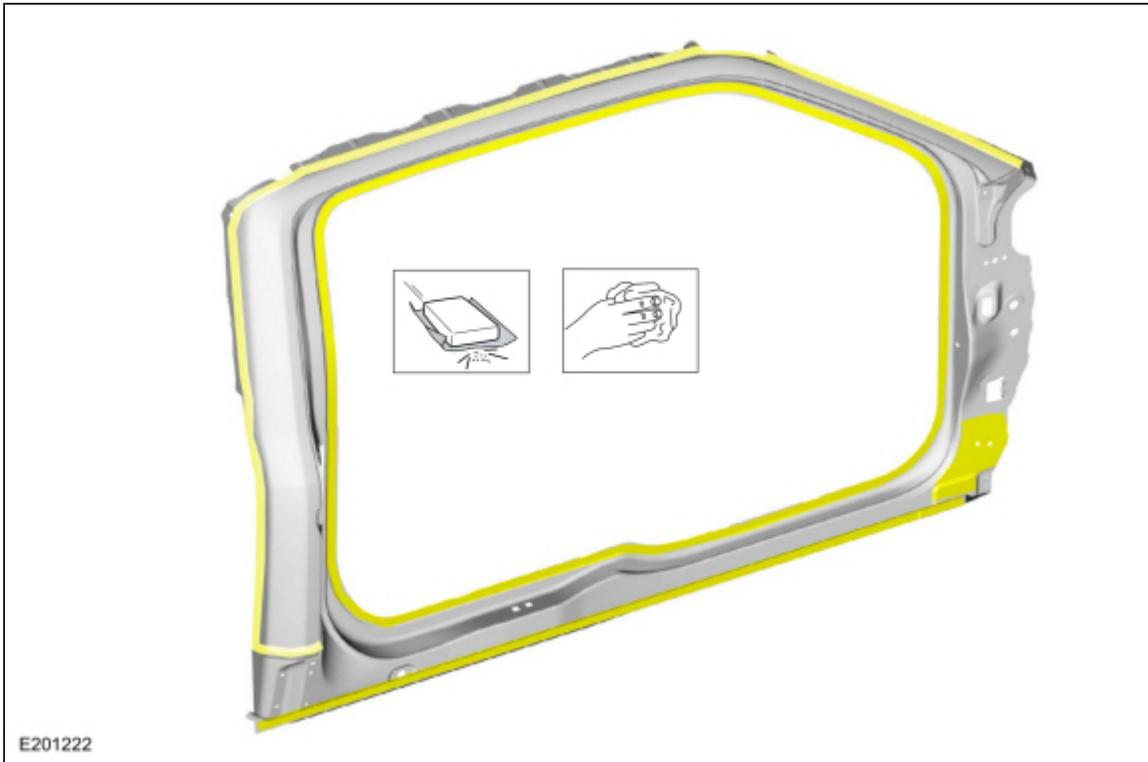
NOTE: The use of a backer panel when creating butt welds will produce a stronger and more uniform repair.

1. 80-120 grit sand paper.
Sand to remove old adhesive and clean.



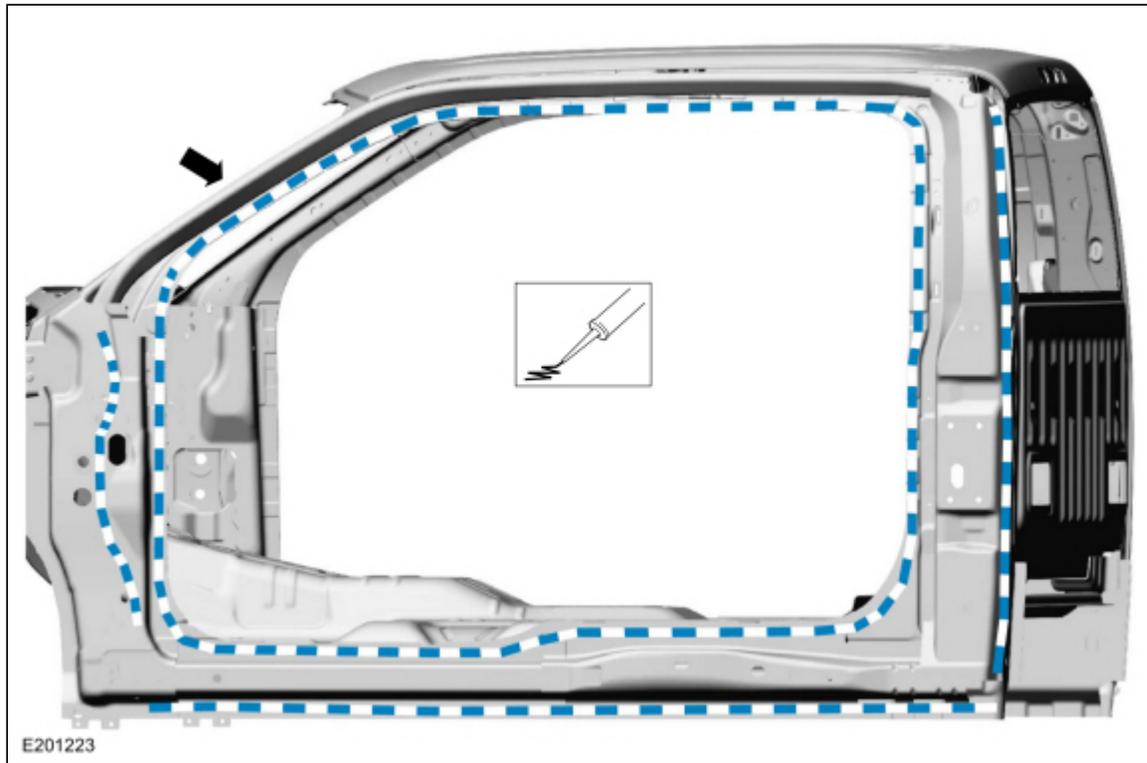
2. **NOTE:** Trim service panel to fit repair area first.

80-120 grit sand paper.
Sand to remove e-coat and clean.



3. Install NVH baffles noted during removal.
4. Create backer plates for all butt-weld/sectioning areas and attached to existing body side.
Refer to: [Joining Techniques](#) (501-25 Body Repairs - General Information, General Procedures).
5. Apply adhesive.
Material: Metal Bonding Adhesive / TA-1, TA-1-B, 3M™ 08115, LORD Fusor® 108B



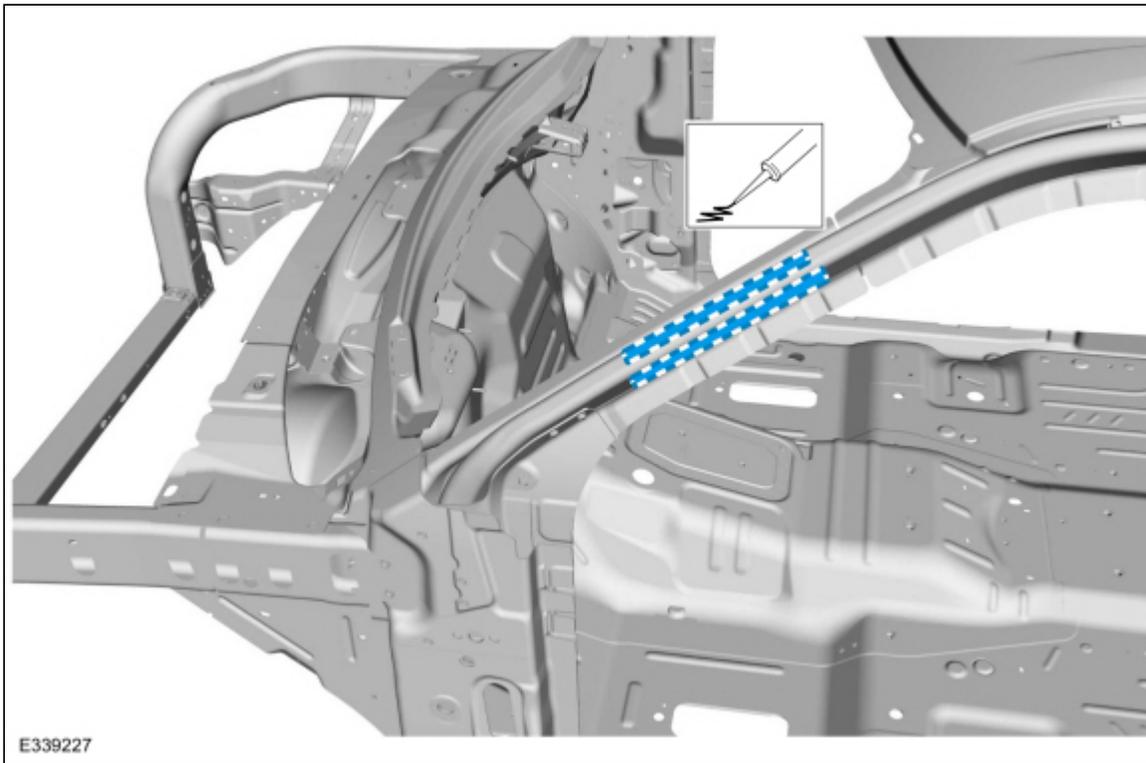


6. Apply flexible foam sealant and urethane adhesive.

Material: Flexible Foam Repair / 3M™ 08463, LORD Fusor® 121

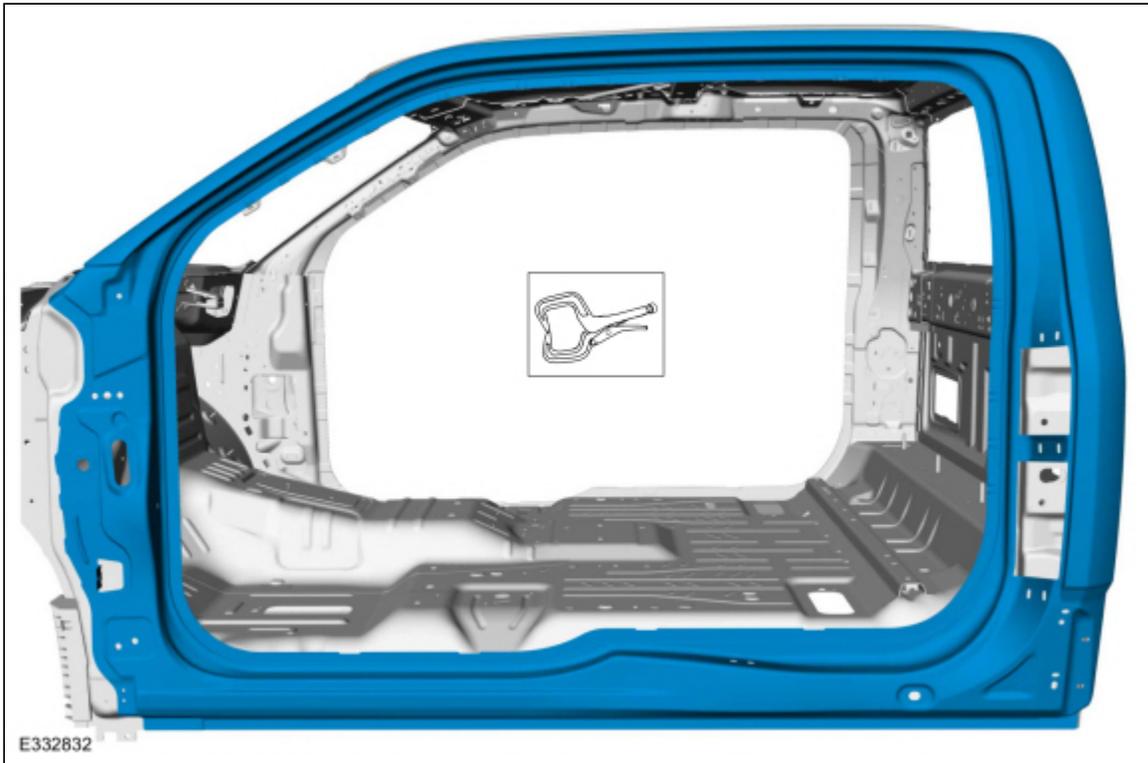
Material: Sika® SikaTack® MACH 60 / Sika® SikaTack® MACH 30 / Dow® BETASEAL™ Express



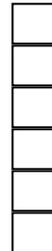


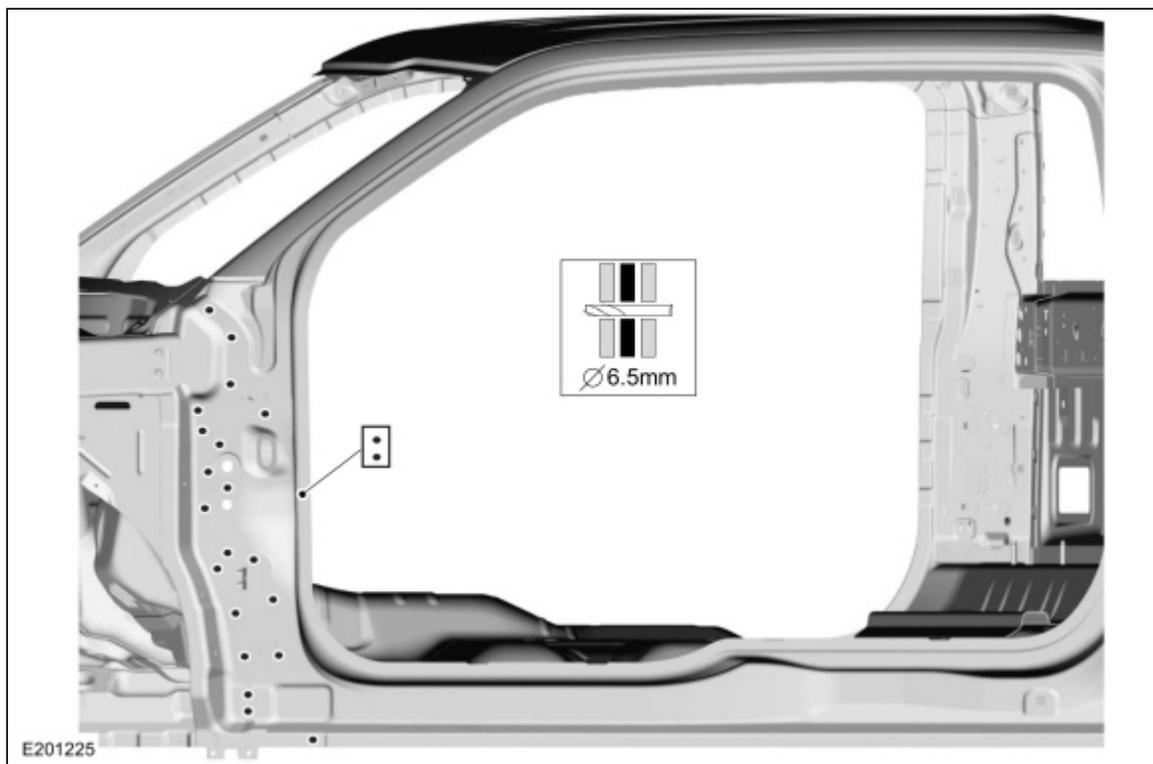
- 7. Install the body side service panel and clamp in position.
Use the General Equipment: Locking Pliers





8. Complete joining of backer plate to service panel and weld the sectioning seams using a MIG welder set up for aluminum repair.
Use the General Equipment: MIG/MAG Welding Equipment
9. Drill 6.5 mm holes for blind rivet fastener installation.
Use the General Equipment: 6.5 mm Drill Bit



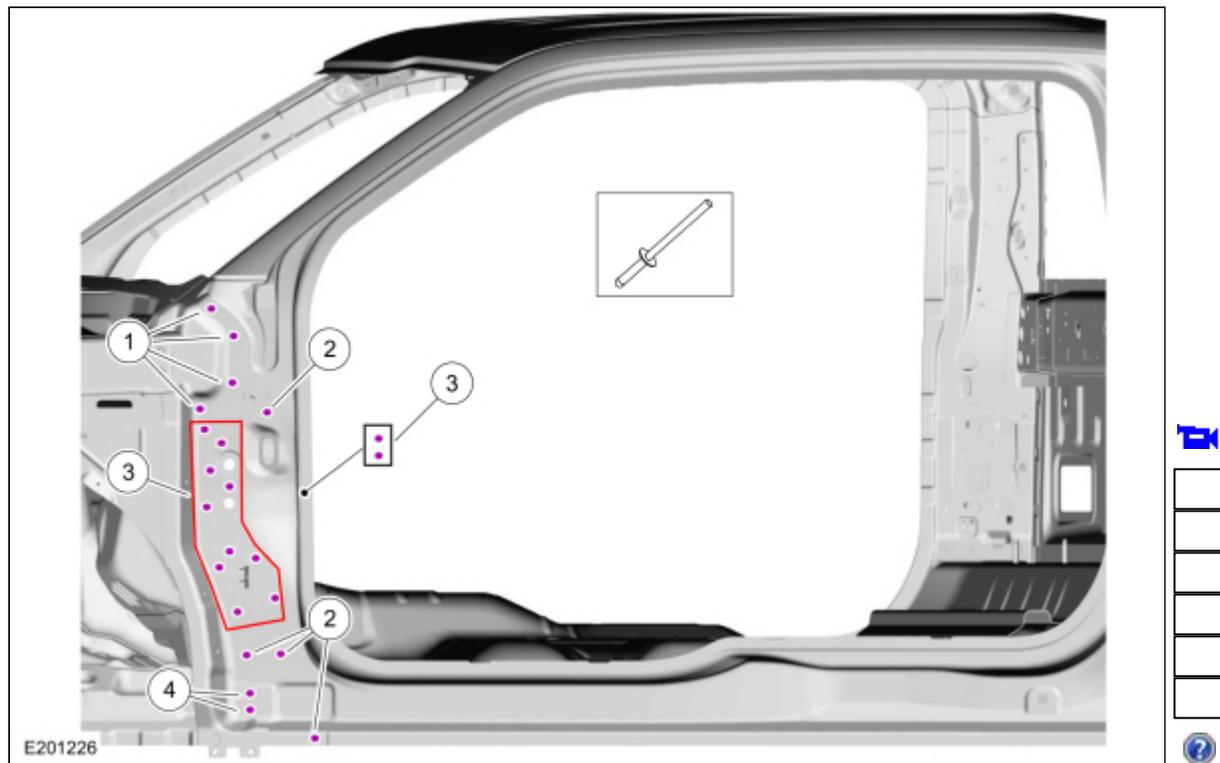


10. **NOTE:** Blind or solid rivet fasteners may be used in place of SPR fasteners after enlarging holes to 6.5 mm.

Install blind rivet 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	-	-	-	-	W702512-S900C	-	-
4	-	-	-	-	W702554-S900C	-	-

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



11. **NOTE:** SPR fasteners may not be placed directly over original SPR location. They must be adjacent to original location matching original quantity.

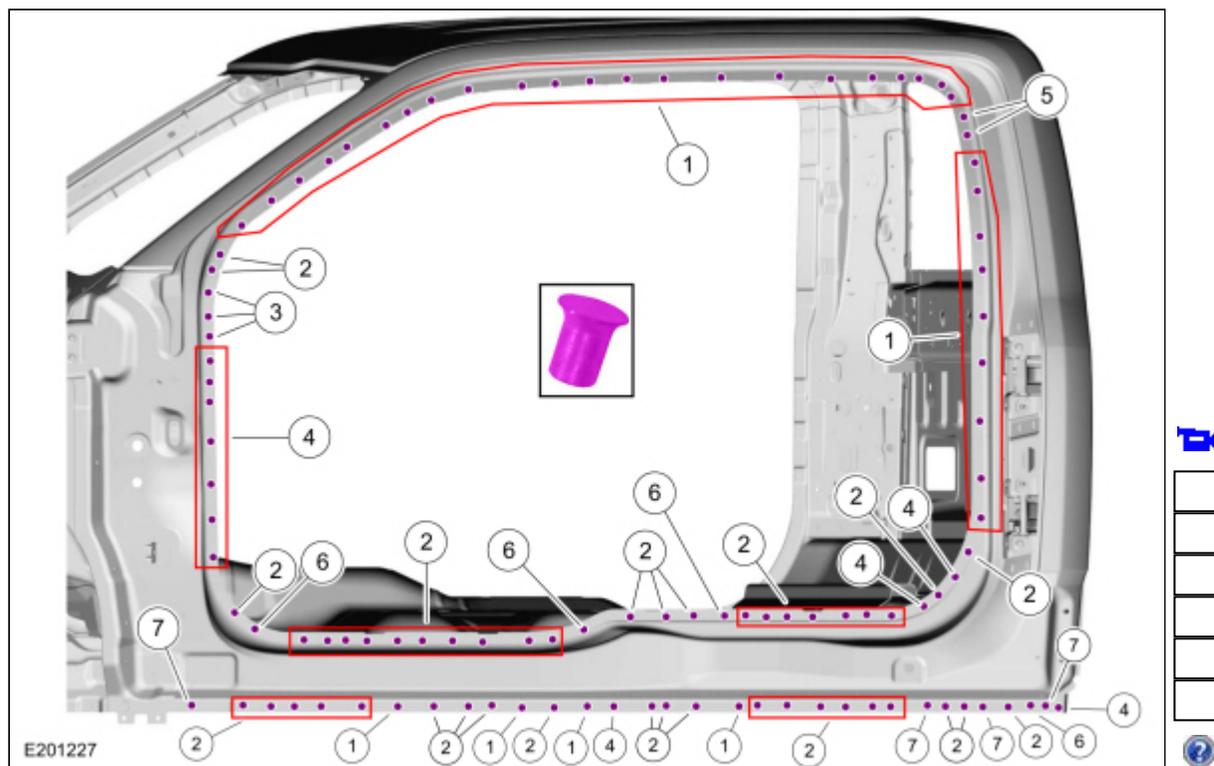
NOTE: Blind or solid rivet fasteners may be used in place of SPR fasteners after enlarging holes to 6.5 mm.

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	W708713-S900	AS	DZ09-025/H	SA-0400/SA-0401	-	W790376-S900	-
2	W717186-S900	EN	DG11-220/H	SA-0400/SA-0402	-	W790377-S900	-
3	W717185-S900	EL	DG11-220/H	SA-0400/SA-0402	-	W790377-S900	-
4	W708717-	AW	DP11-200/H	SA-0400/SA-	-	W790377-	-

	S900			0402		S900	
5	W708717-S900	AW	DG10-220/H	SA-040/SA-0402	-	W790377-S900	-
6	W708713-S900	AS	DZ09-025/H	SA-0400/SA-0402	-	W790377-S900	-
7	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

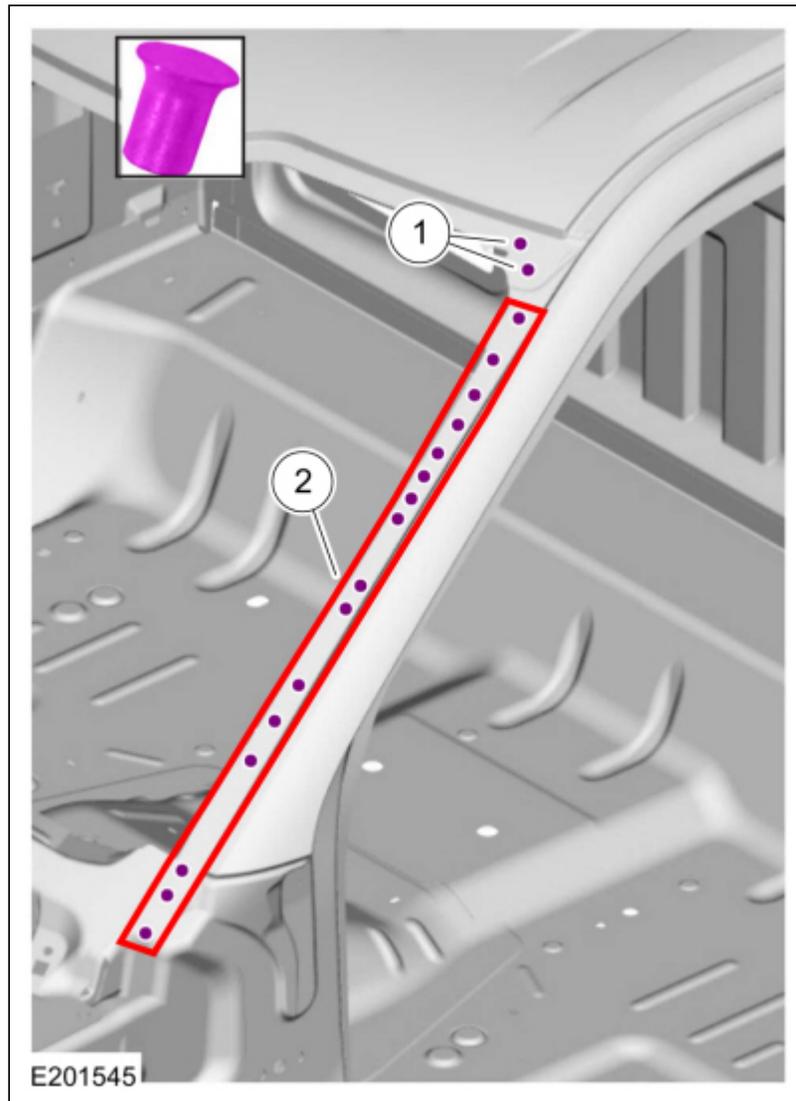


12. Install fasteners.

Item	SPR Number	SPR Code	Henrob® Car-O- Liner®, CMO®, Chief®, Spanesi® Wielande and Schill® Mandrel	Pro-Spot® Mandrel	Blind Rivet	Solid Rivet	Rivnut®

	W717186-S900	EN	DP11-200/H	SA-0400/SA-0402	-	W790377-S900	-
	W708713-S900	AS	DZ09-025/H	SA-0400/SA-0402	-	W790377-S900	-

Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer



13. Drill for fasteners.

Use the General Equipment: 6.5 mm Drill Bit



14. **NOTE:** SPR fasteners may not be placed directly over original SPR location. They must be adjacent to original location matching original quantity.

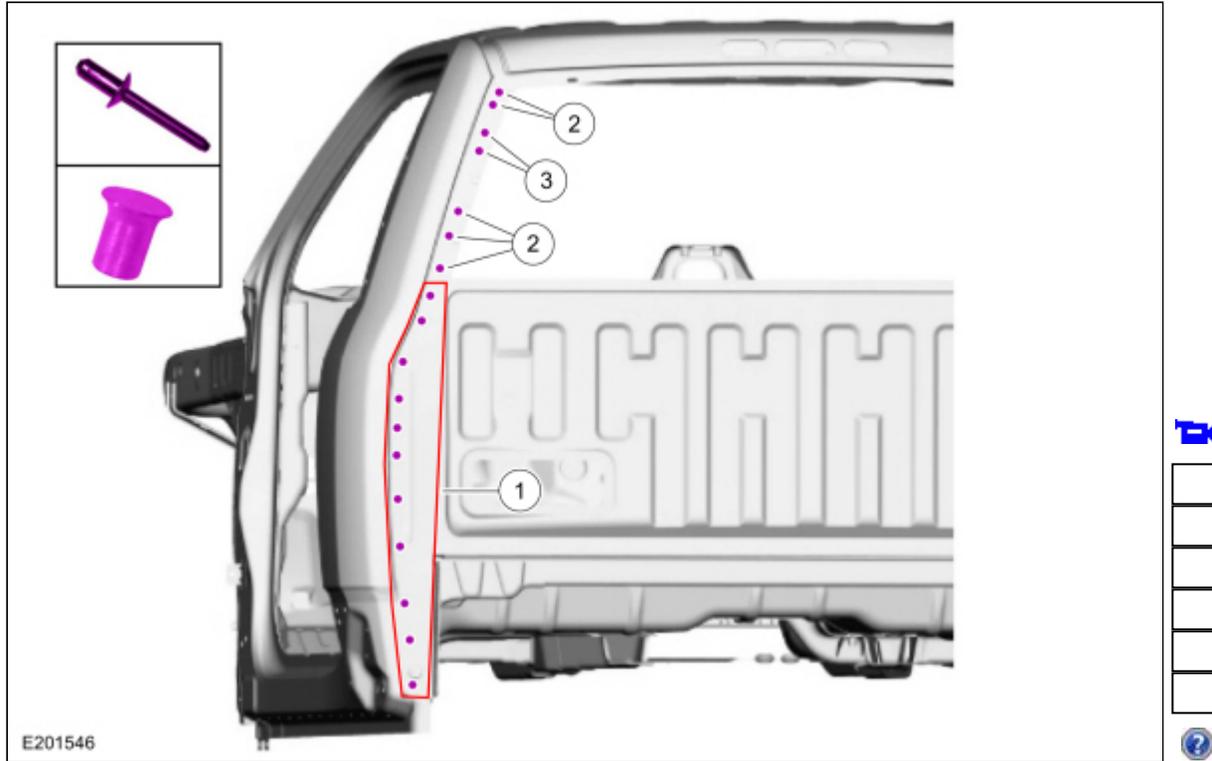
NOTE: Blind or solid rivet fasteners may be used in place of SPR fasteners after enlarging holes to 6.5 mm.

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	-	-	-	-	W708777-S900C	-	-
2	W708713-S900	AS	DZ09-025/H	SA-0400/Sa-0402	-	W790377-S900	-
3	W708717-S900	AW	DZ09-220/H	Sa-0400/SA-0402	-	W790377-S900	-

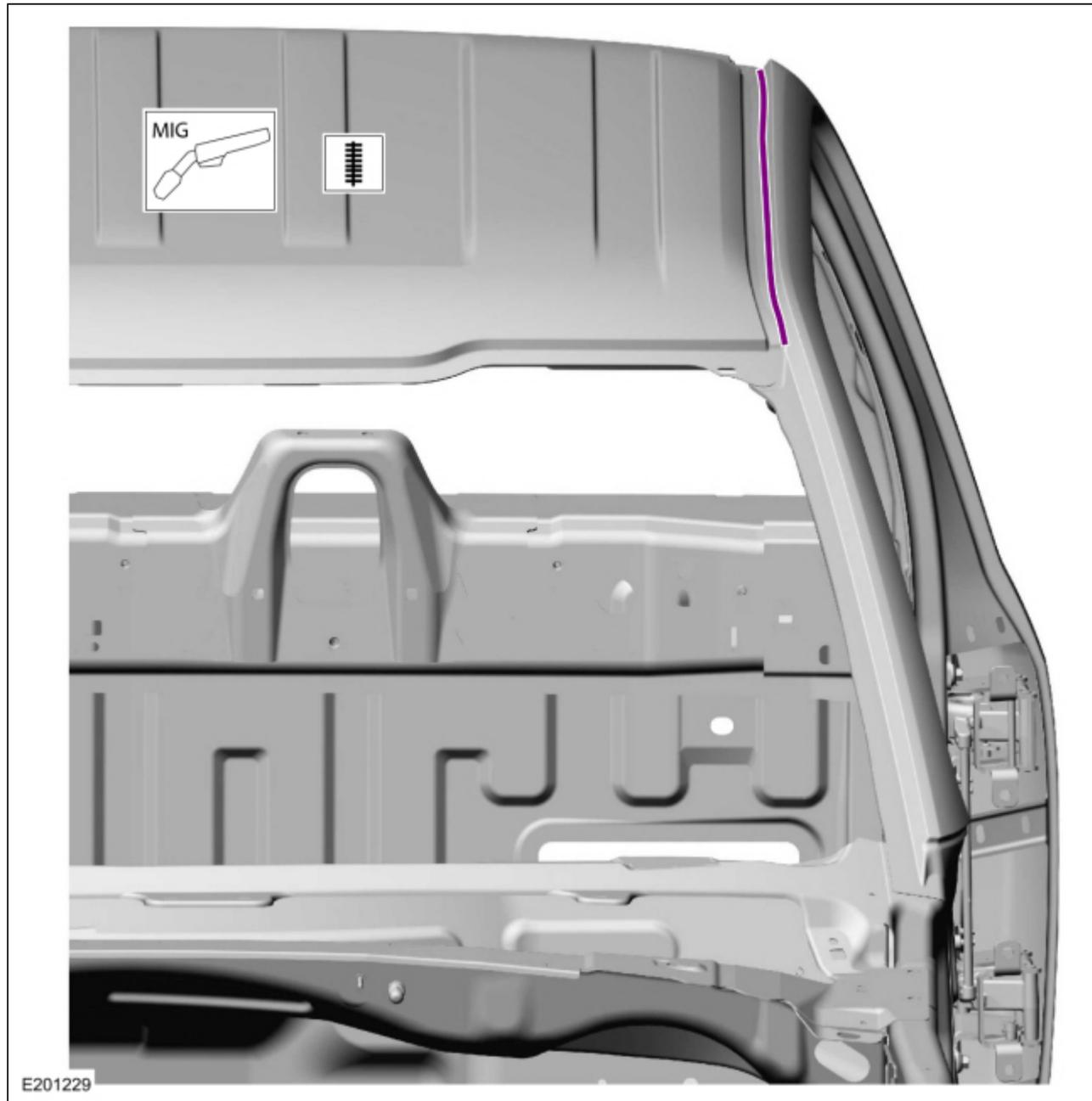
Refer to: [Joining Techniques](#) (501-25 Body Repairs - General Information, General Procedures).

Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer
Use the General Equipment: Blind Rivet Gun



15. Seam weld the roof to body side seam using a MIG welder set up for aluminum repair.
Use the General Equipment: MIG/MAG Welding Equipment



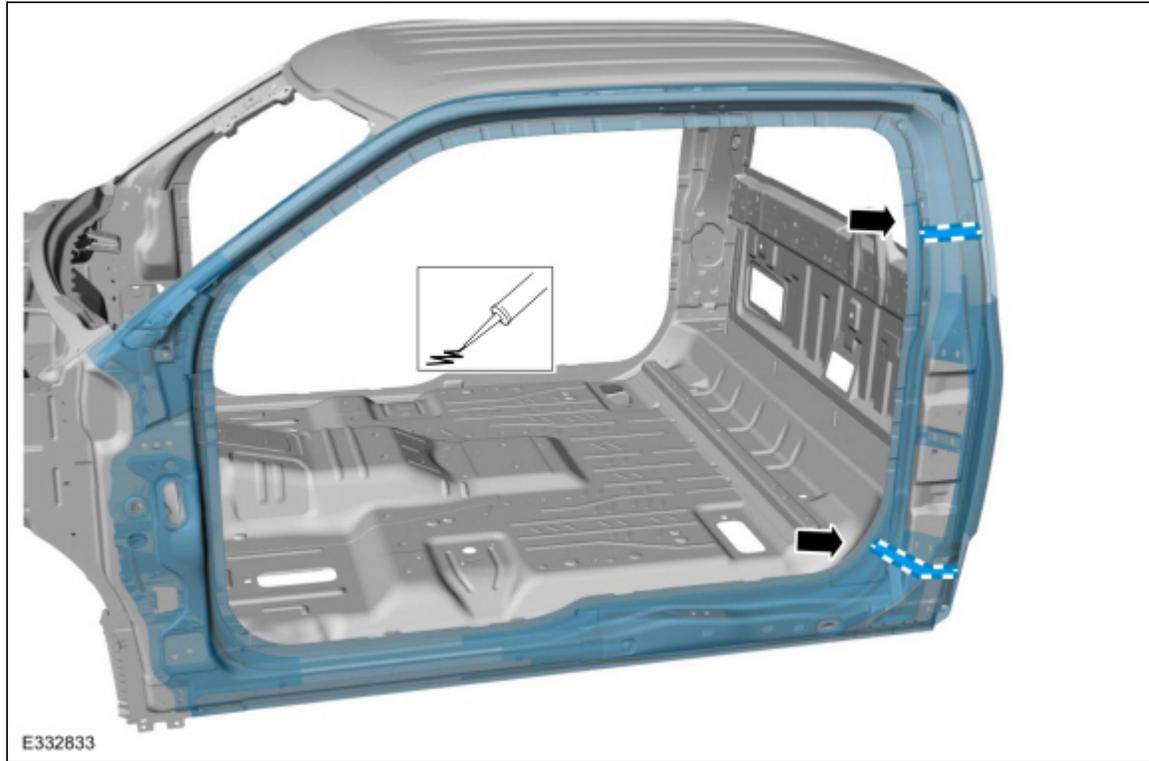


16. Metal finishing:

Finish all seams using typical aluminum metal finishing techniques and a fiber-based body filler.

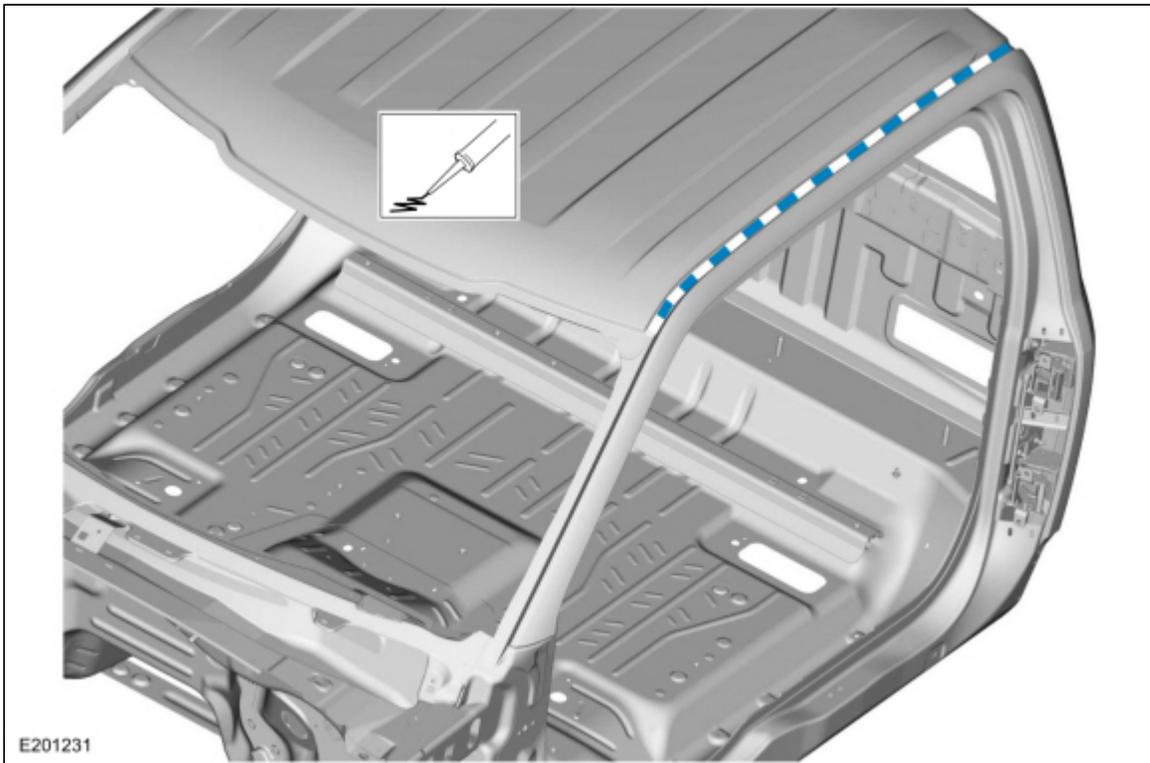
Refer to: [Special Repair Considerations for Aluminum Repairs](#) (501-25 Body Repairs - General Information, Description and Operation).

- 17. Apply NVH foam to all locations noted during removal to assure complete sealing.
Material: Flexible Foam Repair / 3M™ 08463, LORD Fusor® 121



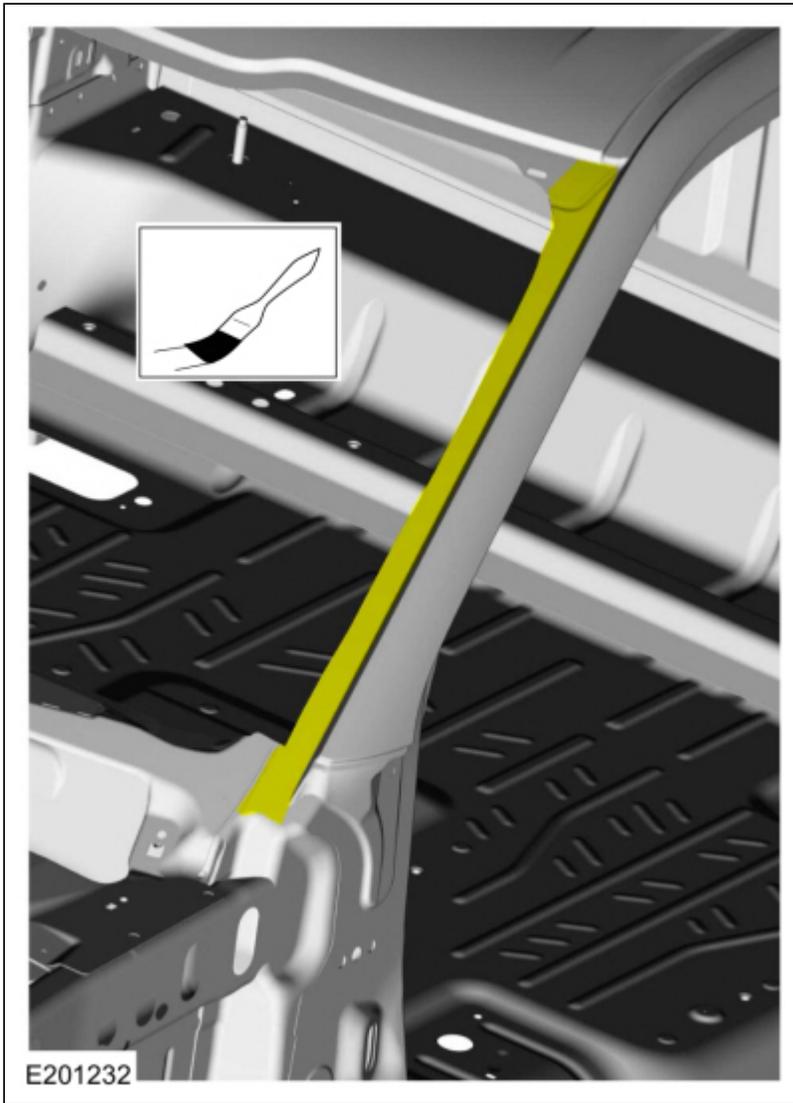
- 18. Apply roof ditch sealer.
Material: Roof Ditch Sealer / 3M™ 08307, LORD Fusor® 129





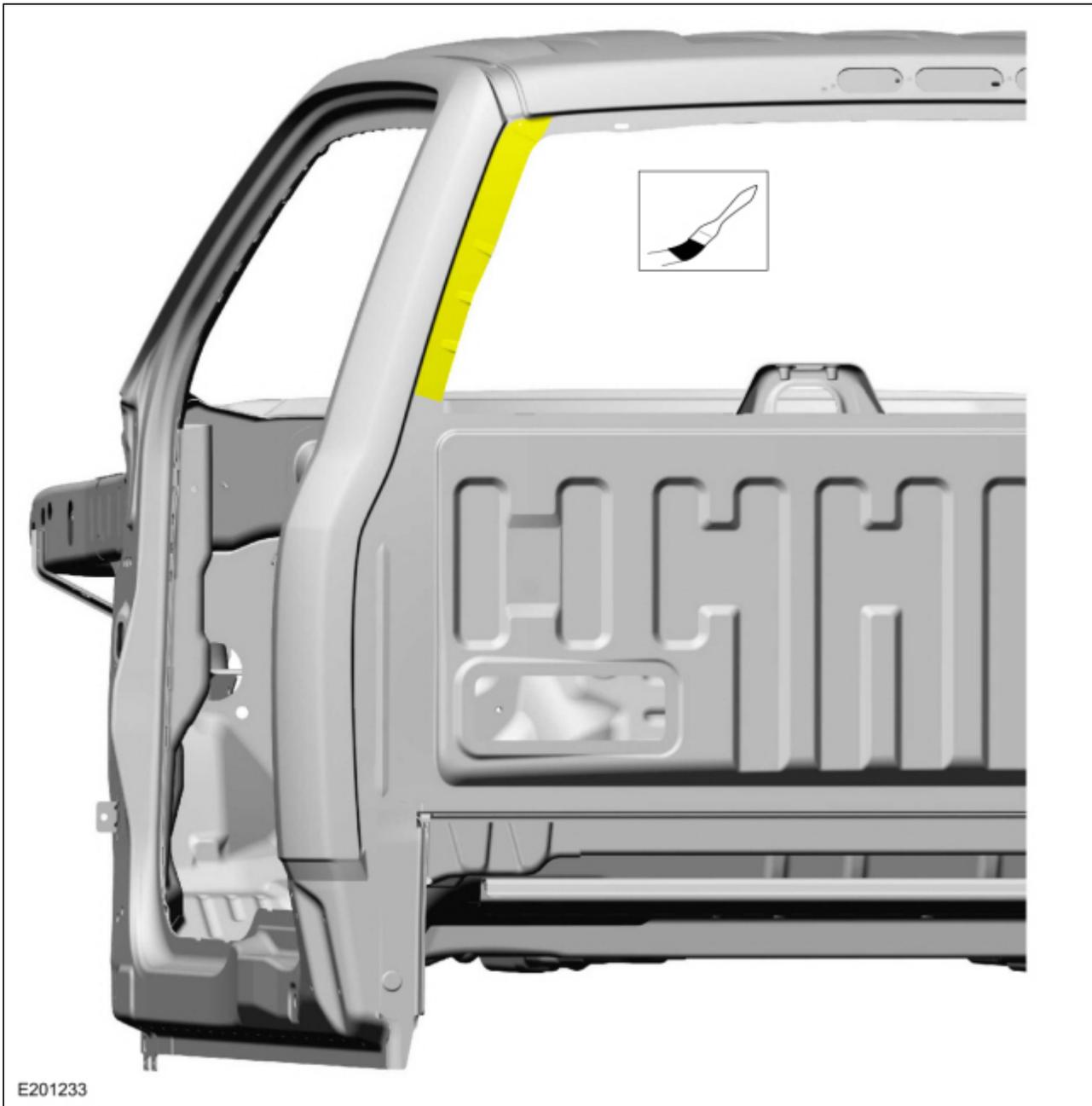
- 19. Epoxy prime.
Prime the windshield opening channel using an Ford approved epoxy-based primer.



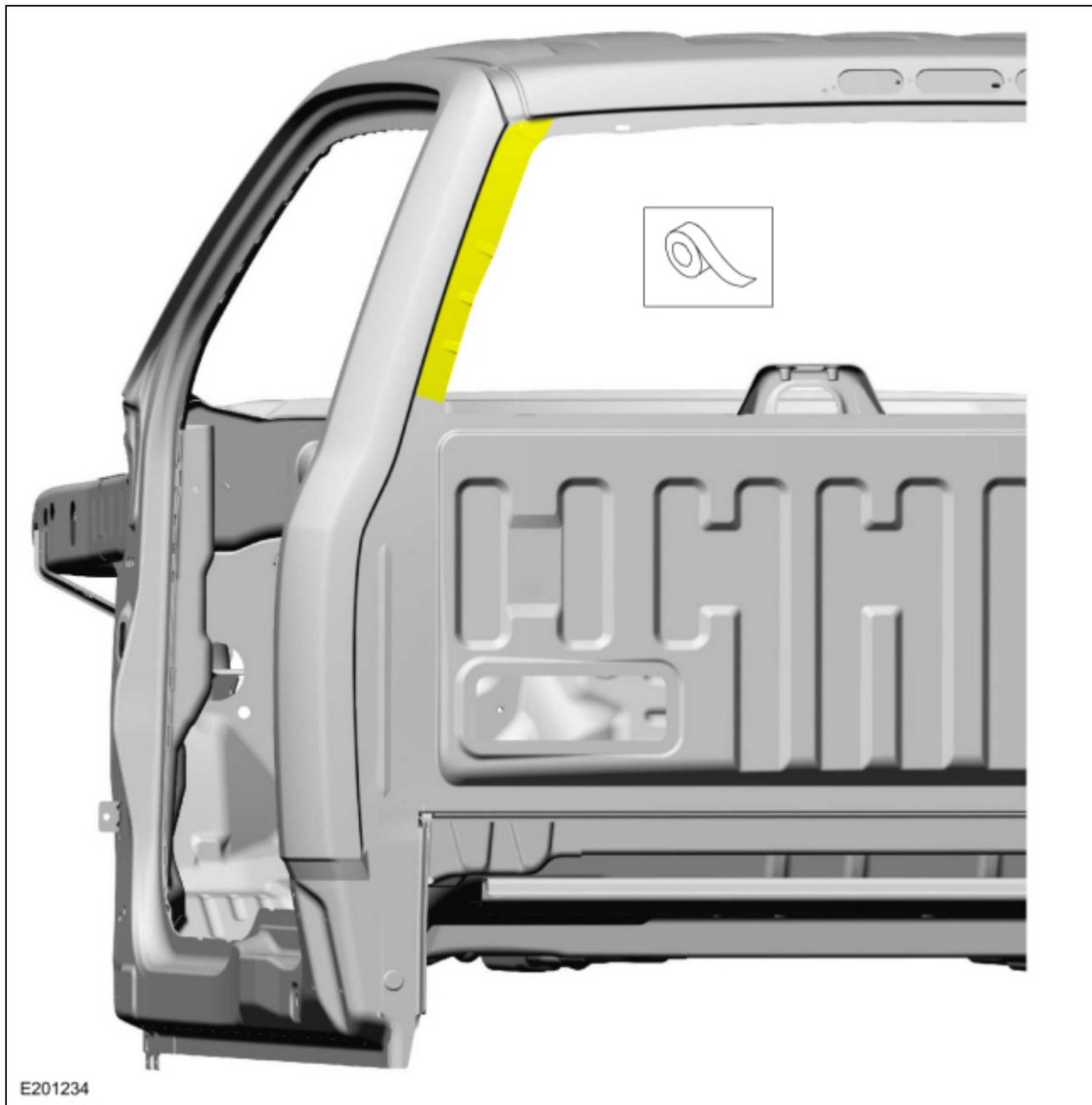


- 20. Epoxy prime.
Prime the rear window glass opening channel using an Ford approved epoxy-based primer.



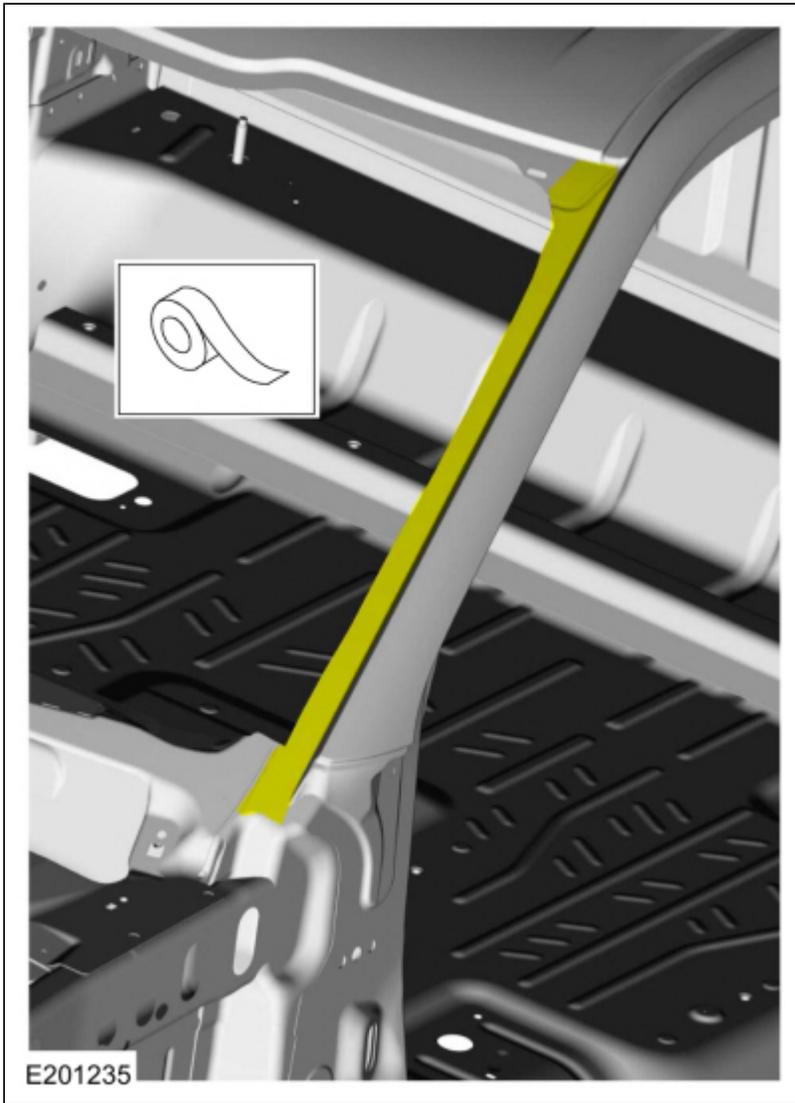


21. Mask the rear window opening channel.



22. Mask the windshield opening channel.



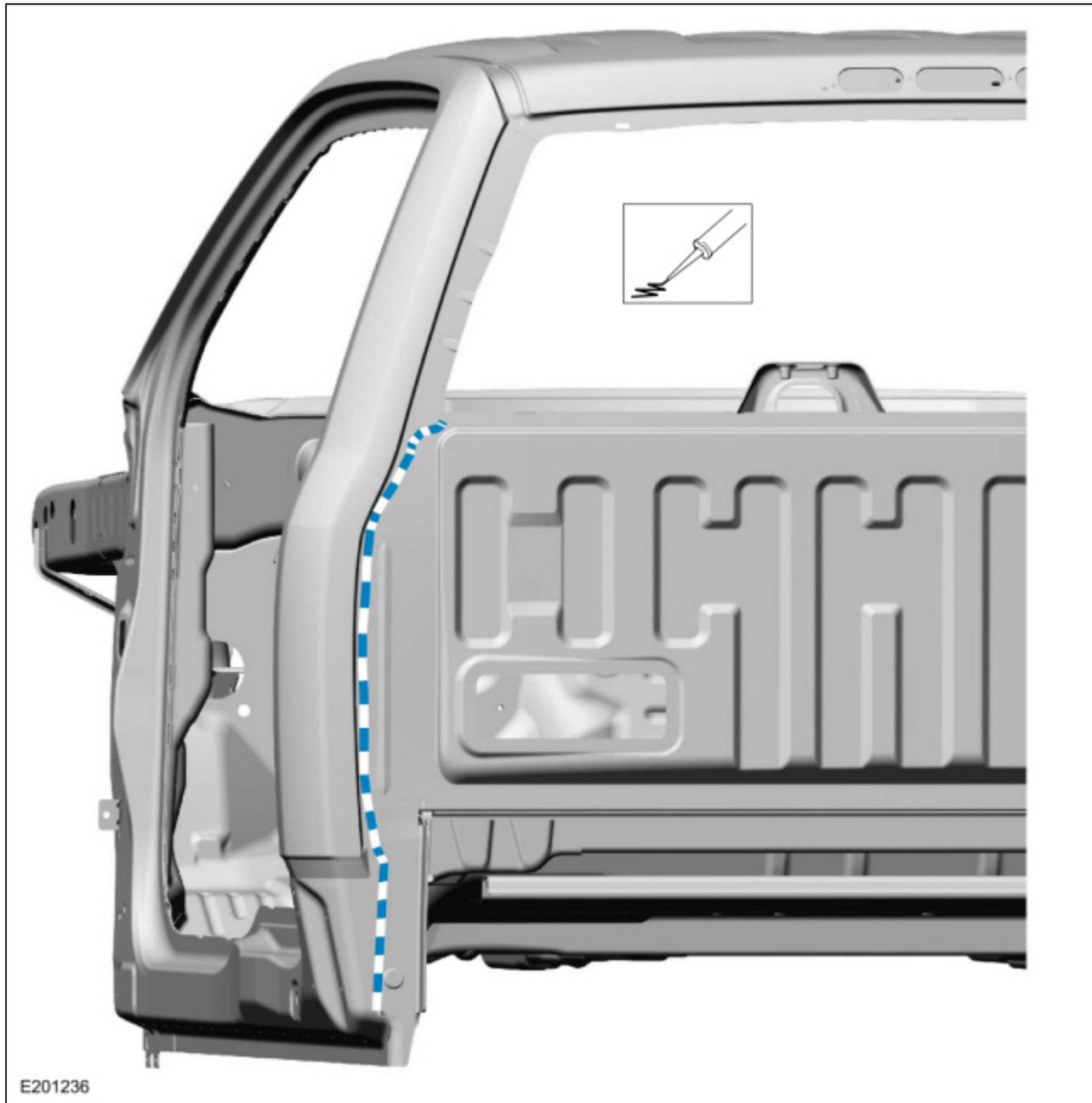


23. Seam Sealing:

All seams must be sealed to production level.

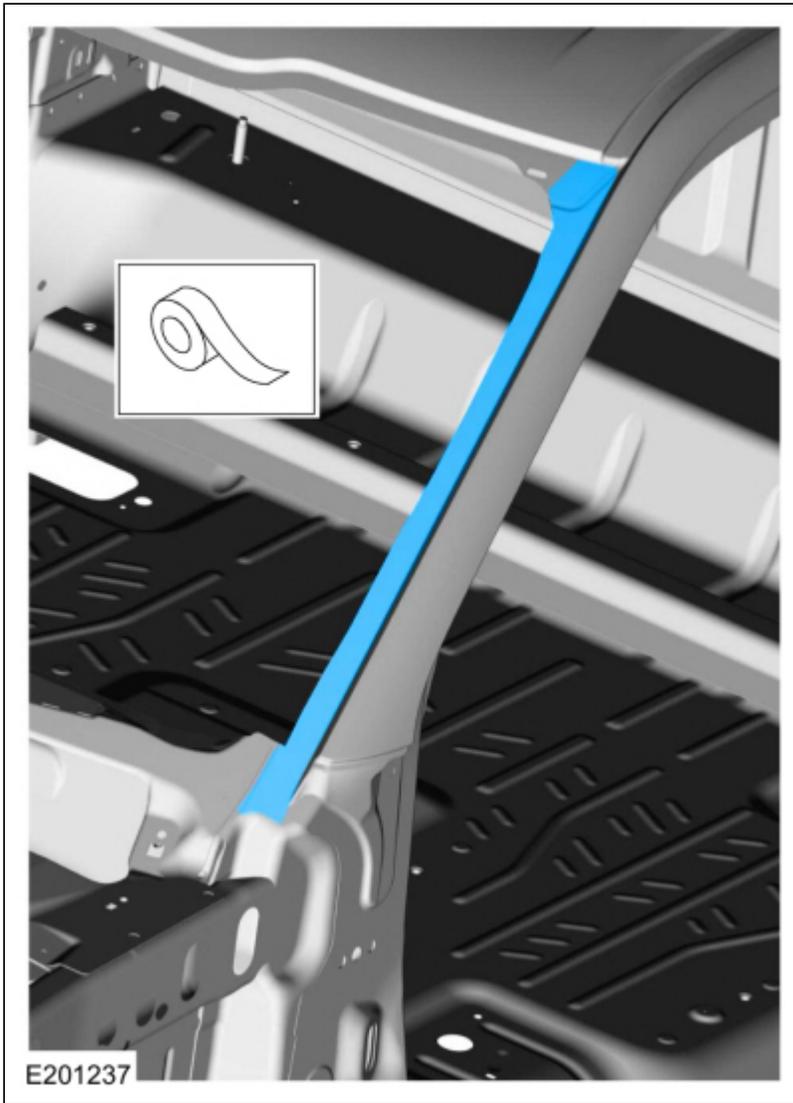
Material: Seam Sealer / TA-2-B, 3M™ 08308, LORD Fusor® 803DTM





24. Refinish the entire repair area using a Ford approved paint system and typical refinishing techniques.

25. Unmask the windshield opening channel.



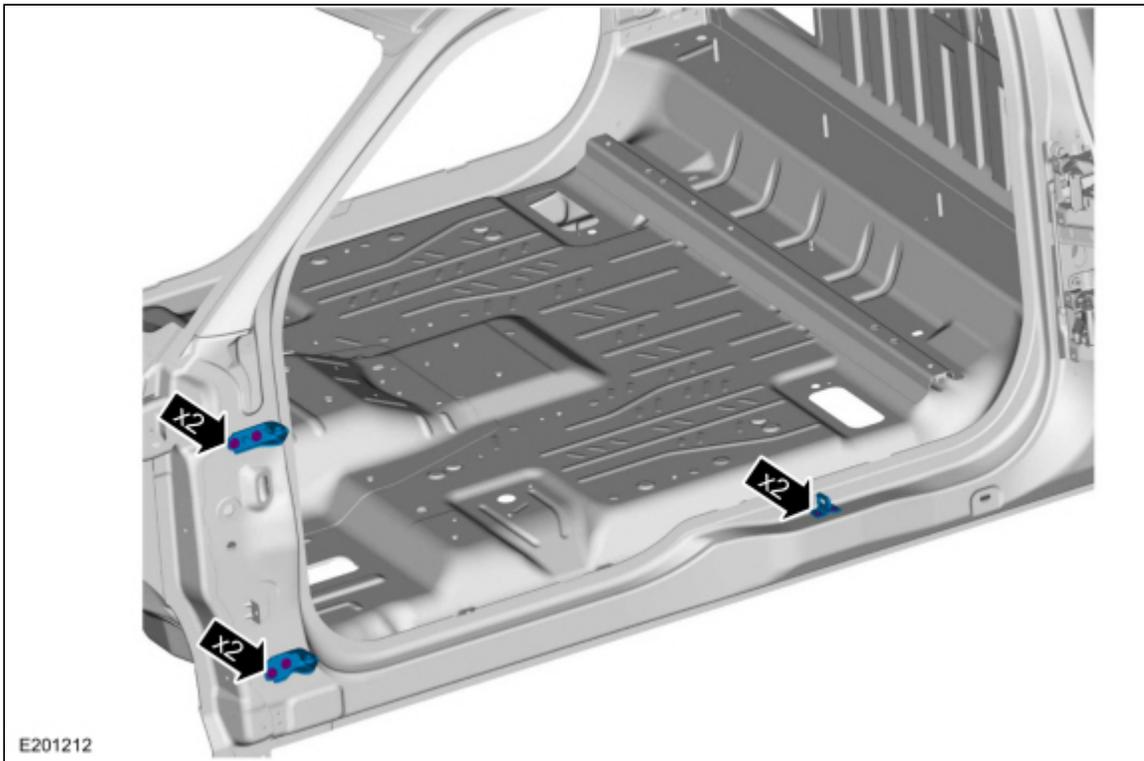
26. Unmask the rear window glass opening channel.



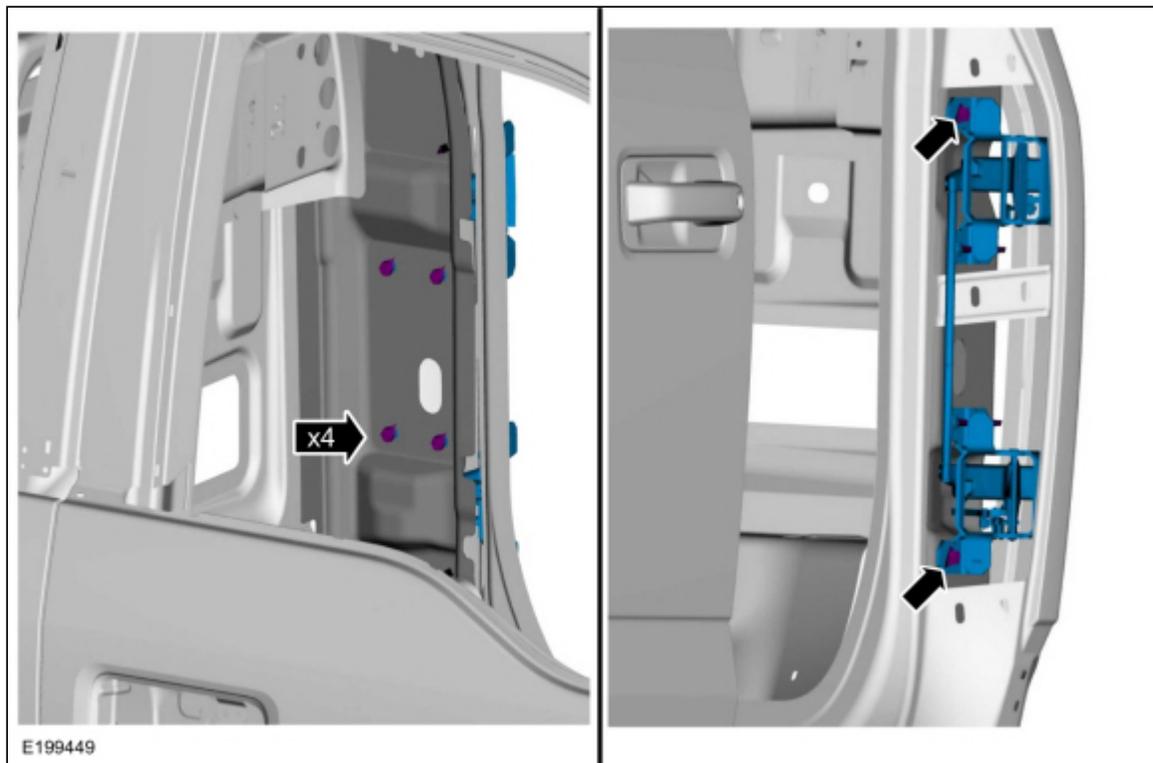


27. Install the side curtain air bag.
Refer to: [Side Curtain Airbag - SuperCab](#) (501-20B Supplemental Restraint System, Removal and Installation).
28. Install the front and rear door opening weather strips and scuff plates.

29. Install the windshield and rear window glass.
Refer to: [Fixed Glass](#) (501-11 Glass, Frames and Mechanisms, General Procedures).
30. Install the cab corner trim and roof mouldings.
Refer to: [Bodyside Moulding](#) (501-08 Exterior Trim and Ornamentation, Removal and Installation).
Refer to: [Roof Moulding](#) (501-08 Exterior Trim and Ornamentation, Removal and Installation).
31.
Install the front door hinges and rear door striker.
- Front door hinges:
Torque: 21 lb.ft (28 Nm)
 - Rear door striker:
Torque: 159 lb.in (18 Nm)



32. Install the rear door hinge.
Torque: 21 lb.ft (28 Nm)



33. Install the A and C-pillar trim panels.
Refer to: [A-Pillar Trim Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).
Refer to: [C-Pillar Trim Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).
34. Install the front fender.
Refer to: [Fender](#) (501-02 Front End Body Panels, Removal and Installation).
35. Install and align the front and rear doors.
Refer to: [Front Door Alignment - SuperCab](#) (501-03 Body Closures, General Procedures).
Refer to: [Rear Door Alignment - SuperCab](#) (501-03 Body Closures, General Procedures).
Refer to: [Front Door - SuperCab](#) (501-03 Body Closures, Removal and Installation).
Refer to: [Rear Door - SuperCab](#) (501-03 Body Closures, Removal and Installation).
36. Install the pickup box.
Refer to: [Pickup Bed](#) (501-04 Pickup Bed and Platform Body, Removal and Installation).
37. Repower the **SRS**.
Refer to: [Supplemental Restraint System \(SRS\) Repowering](#) (501-20B Supplemental Restraint System, General Procedures).

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