

501-29 Side Panel Sheet Metal Repairs  
Removal and Installation

2021 F-150

Procedure revision date: 10/23/2020

### Side Panel - SuperCrew

#### Special Tool(s) / General Equipment

6.5 mm Drill Bit
Scraper for Straight Edges
Spherical Cutter
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 Tack ASAP Urethane Adhesive	-
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. Possible sectioning points.

Refer to: [Complete Panel Replacement/Partial Replacement](#) (501-25 Body Repairs - General Information, Description and Operation).

Refer to: [Body Panel Sectioning](#) (501-26 Body Repairs - Vehicle Specific Information and Tolerance Checks, General Procedures).

3. Depower the SRS.

Refer to: [Supplemental Restraint System \(SRS\) Depowering](#) (501-20B Supplemental Restraint System, General Procedures).

4. Remove the front fender.

Refer to: [Fender](#) (501-02 Front End Body Panels, Removal and Installation).

5. Remove the front and rear doors.

Refer to: [Front Door - Regular Cab/SuperCrew](#) (501-03 Body Closures, Removal and Installation).

Refer to: [Rear Door - SuperCrew](#) (501-03 Body Closures, Removal and Installation).

6. Remove the pickup bed.

Refer to: [Pickup Bed](#) (501-04 Pickup Bed and Platform Body, Removal and Installation).

7. Remove the front and rear door scuff plates.

8. Remove the door opening weatherstrips.

9. Remove the A-pillar, B-pillar and C-pillar trim panels.

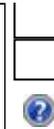
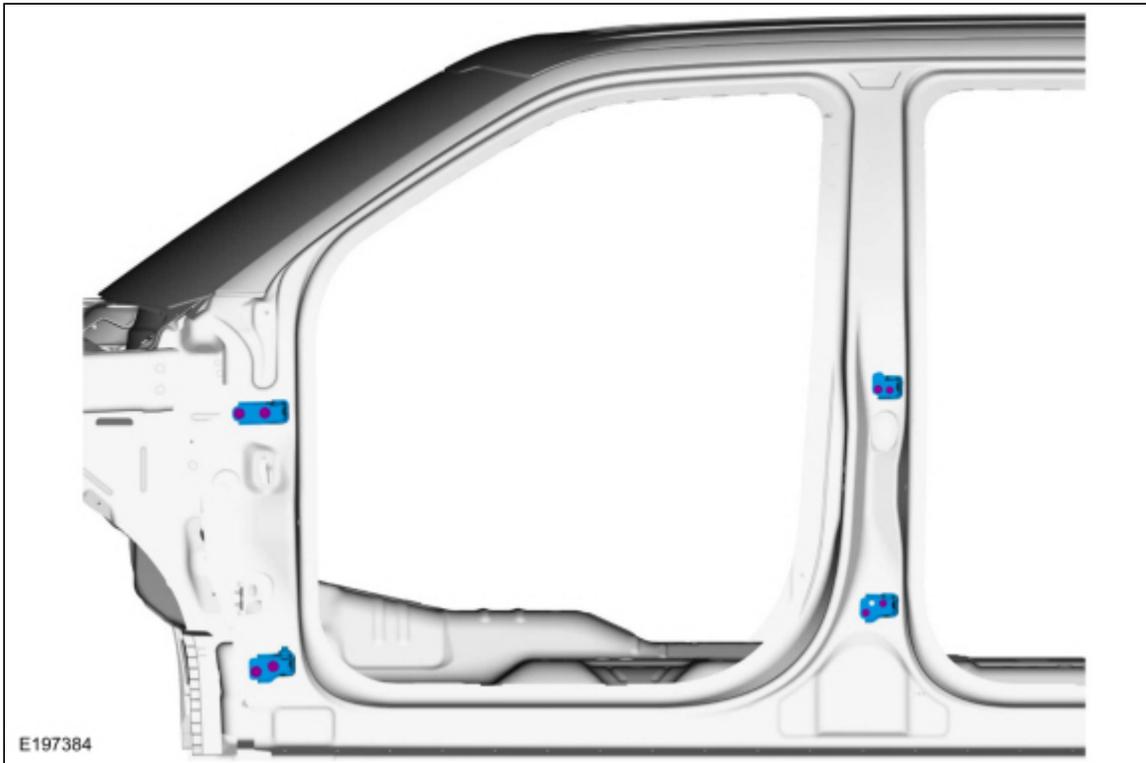
Refer to: [A-Pillar Trim Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

Refer to: [B-Pillar Trim Panel - SuperCrew](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

Refer to: [C-Pillar Trim Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

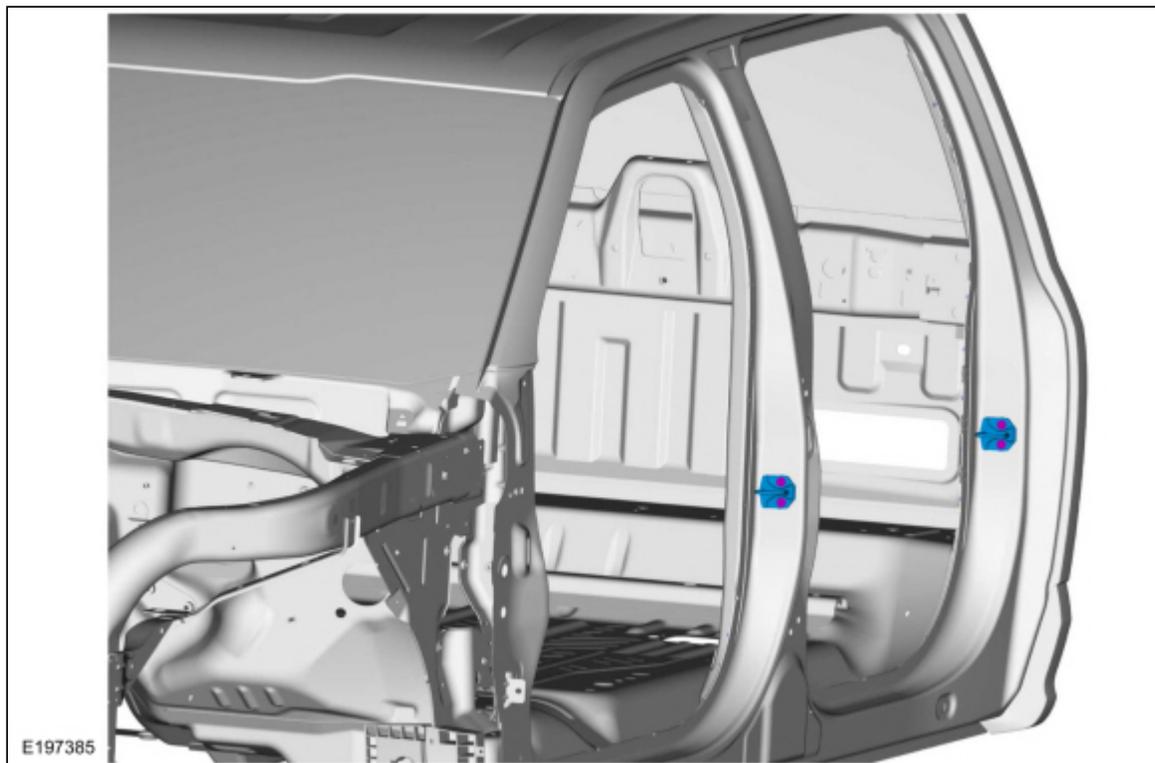
10. Remove the front and rear door hinges at the body.





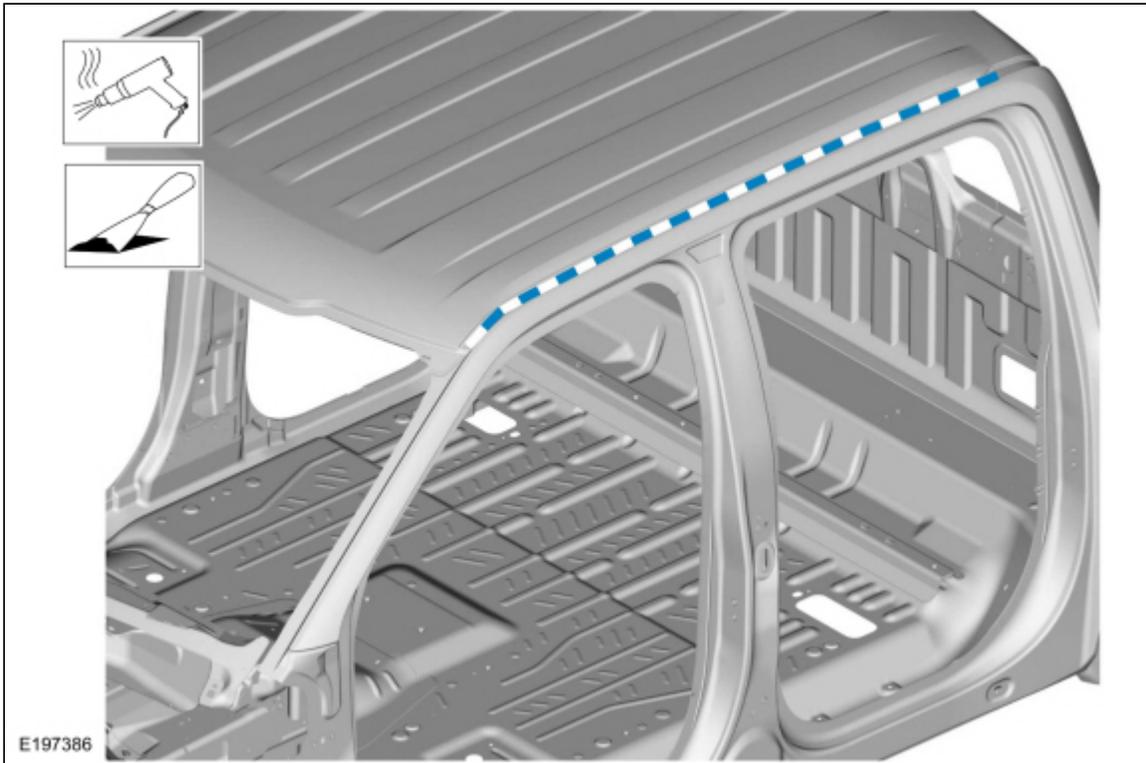
11. Remove the front and rear door strikers.





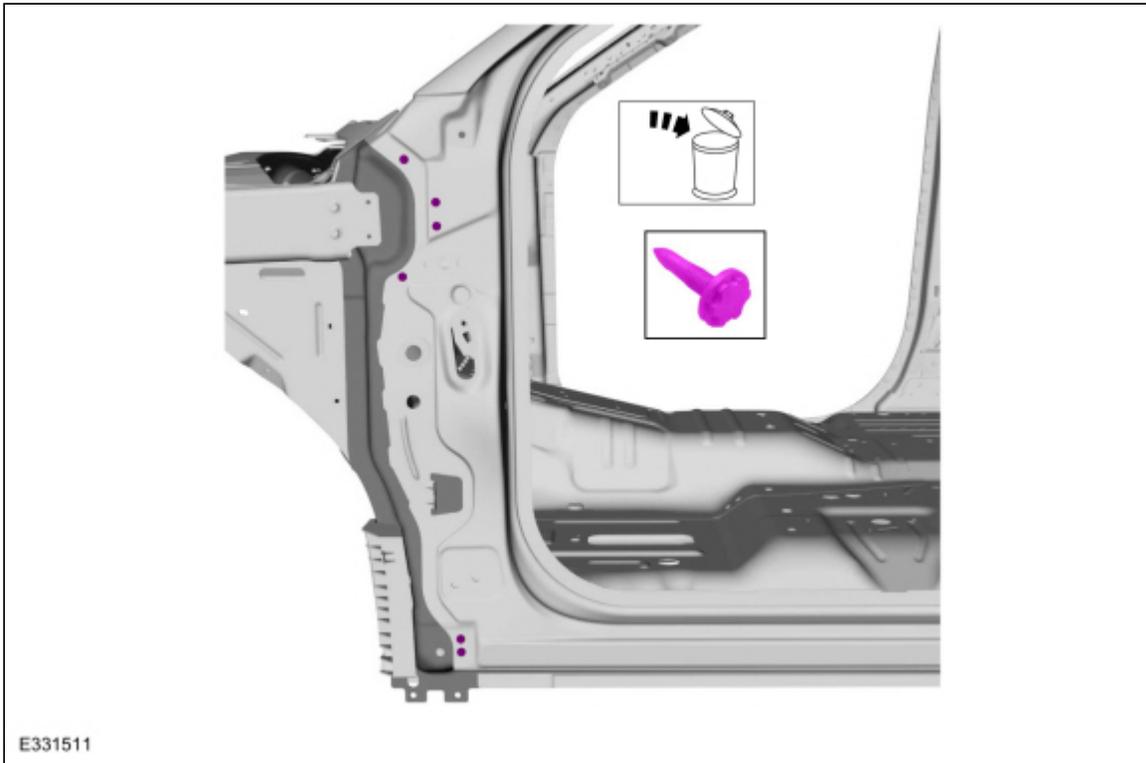
12. Remove the cab corner moulding and roof trim moulding.  
Refer to: [Roof Moulding](#) (501-08 Exterior Trim and Ornamentation, Removal and Installation).  
Refer to: [Bodyside Moulding](#) (501-08 Exterior Trim and Ornamentation, Removal and Installation).
13. Remove the windshield and rear window.  
Refer to: [Fixed Glass](#) (501-11 Glass, Frames and Mechanisms, General Procedures).
14. Remove the side curtain air bag.  
Refer to: [Side Curtain Airbag - SuperCrew](#) (501-20B Supplemental Restraint System, Removal and Installation).
15. Remove the roof ditch sealer.  
Use the General Equipment: Hot Air Gun  
Use the General Equipment: Scraper for Straight Edges



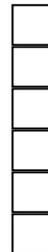


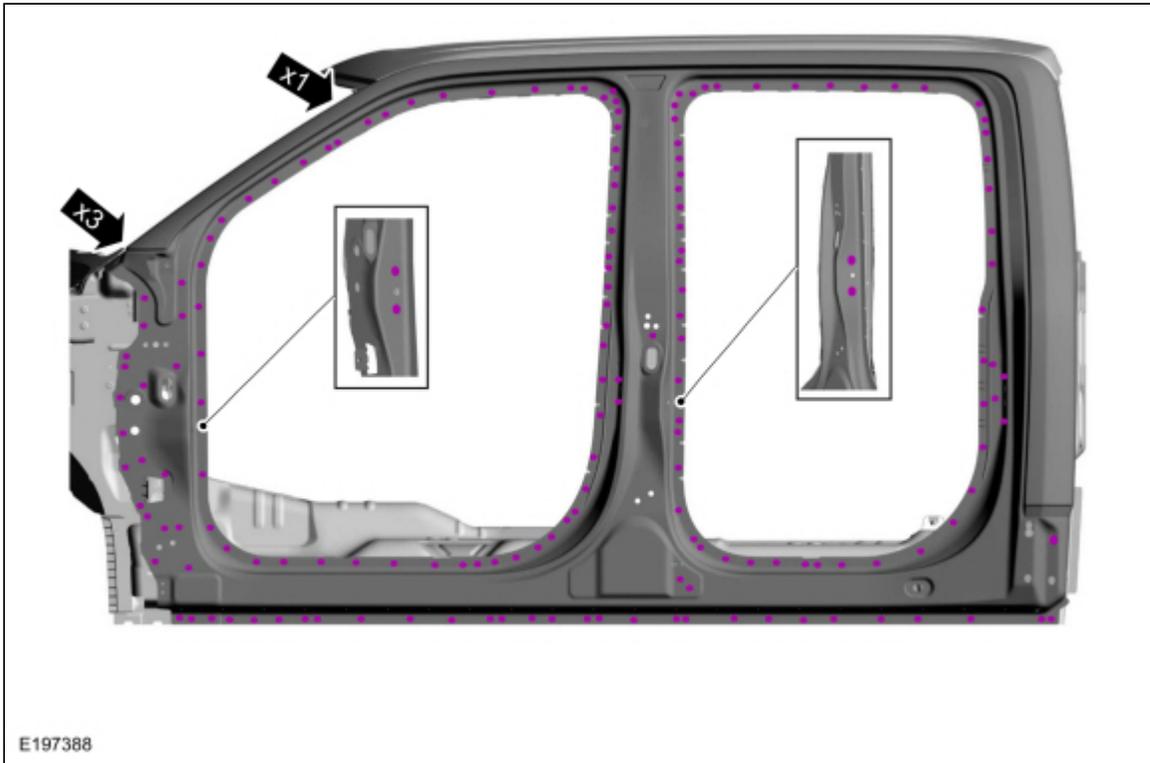
16. Remove and discard the FDS fasteners.





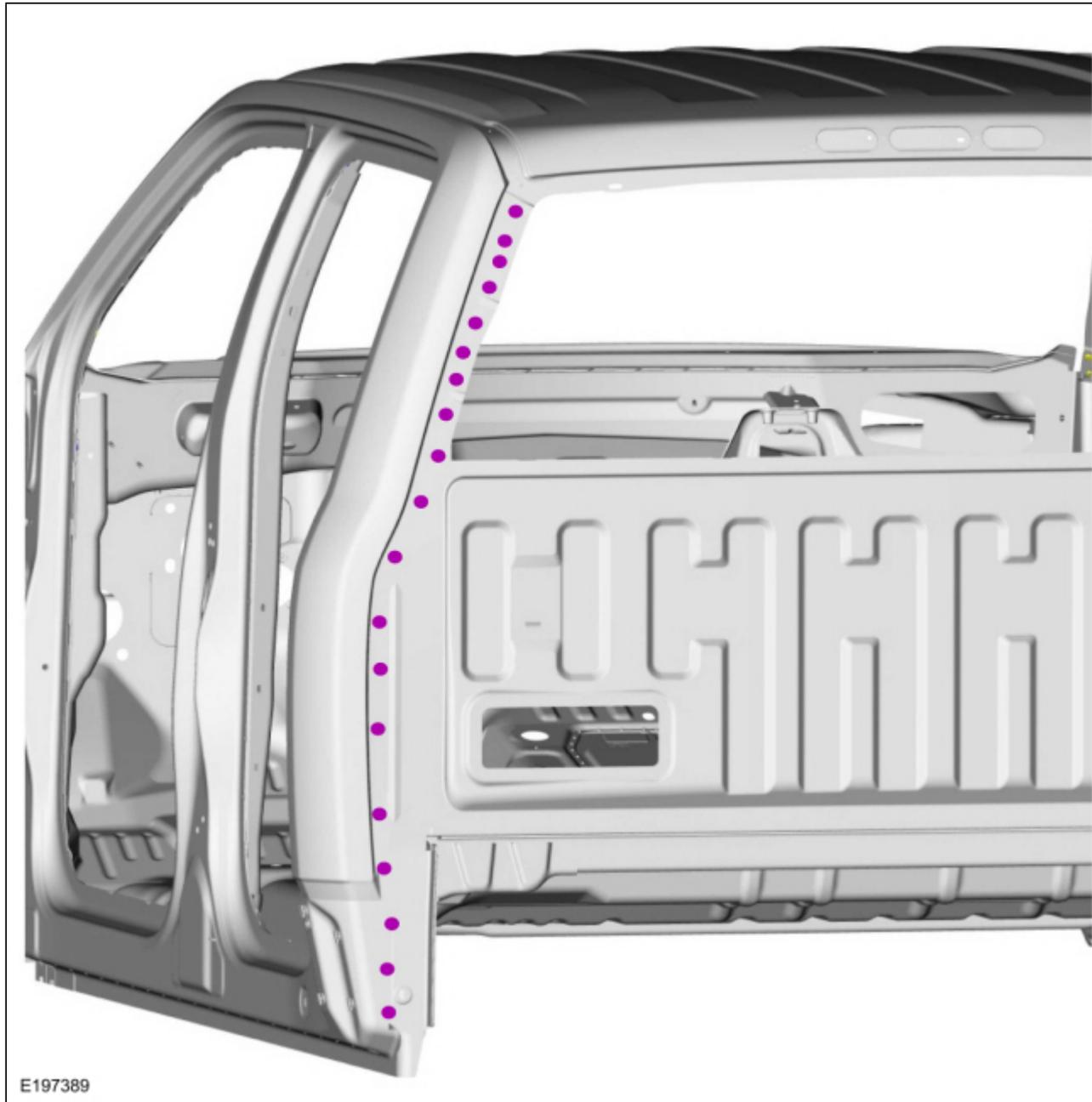
- 17. Remove the SPR fasteners.  
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer  
Use the General Equipment: Belt Sander



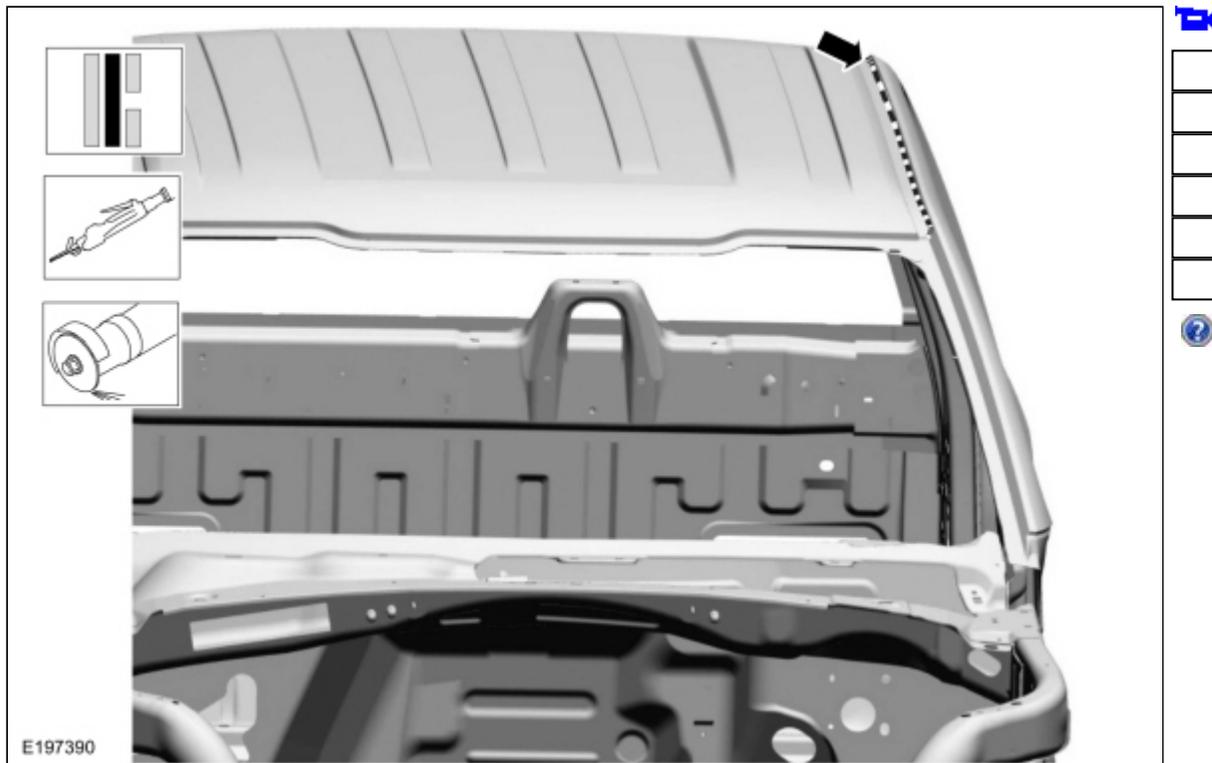


- 18. Remove the SPR fasteners.  
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer  
Use the General Equipment: Belt Sander



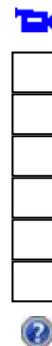


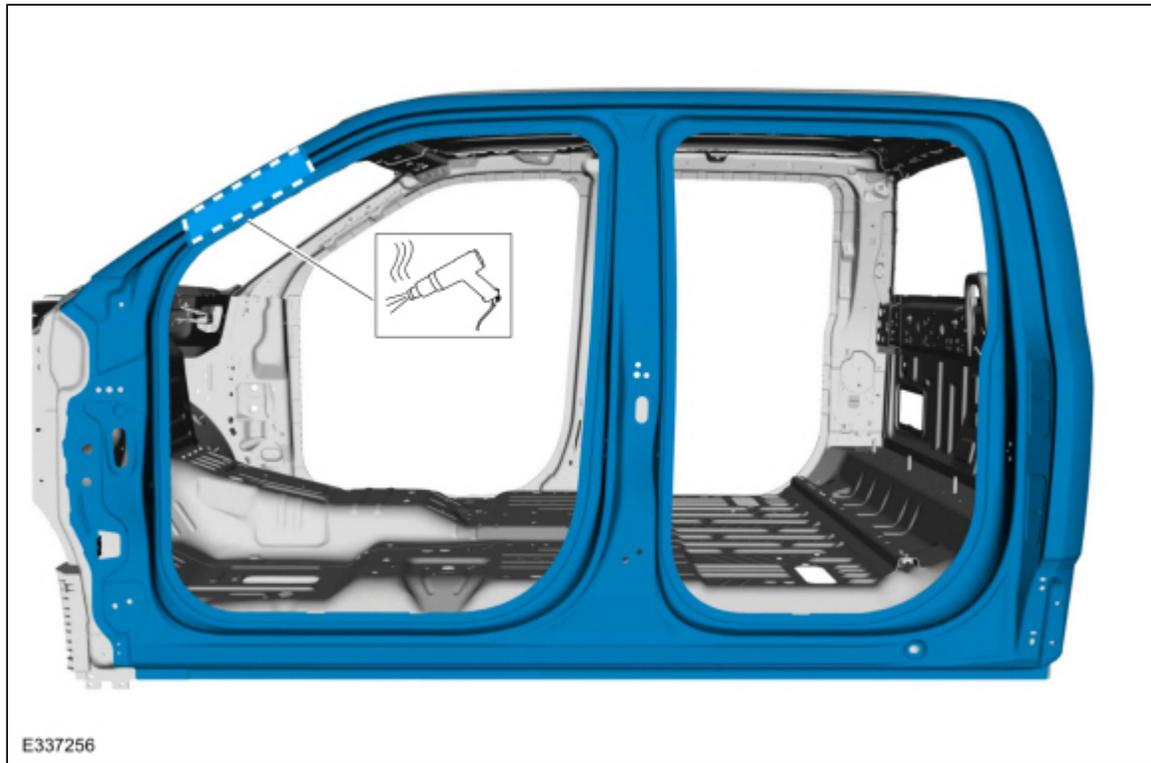
19. Carefully cut the **outer panel only** in the roof ditch as indicated.  
Use the General Equipment: Air Body Saw  
Use the General Equipment: Spherical Cutter



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.

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

### Partial panel replacement:

- Determine repair and trim service panel accordingly.
- In butt weld area(s) create a backer plate from unused portion(s) of service panel.

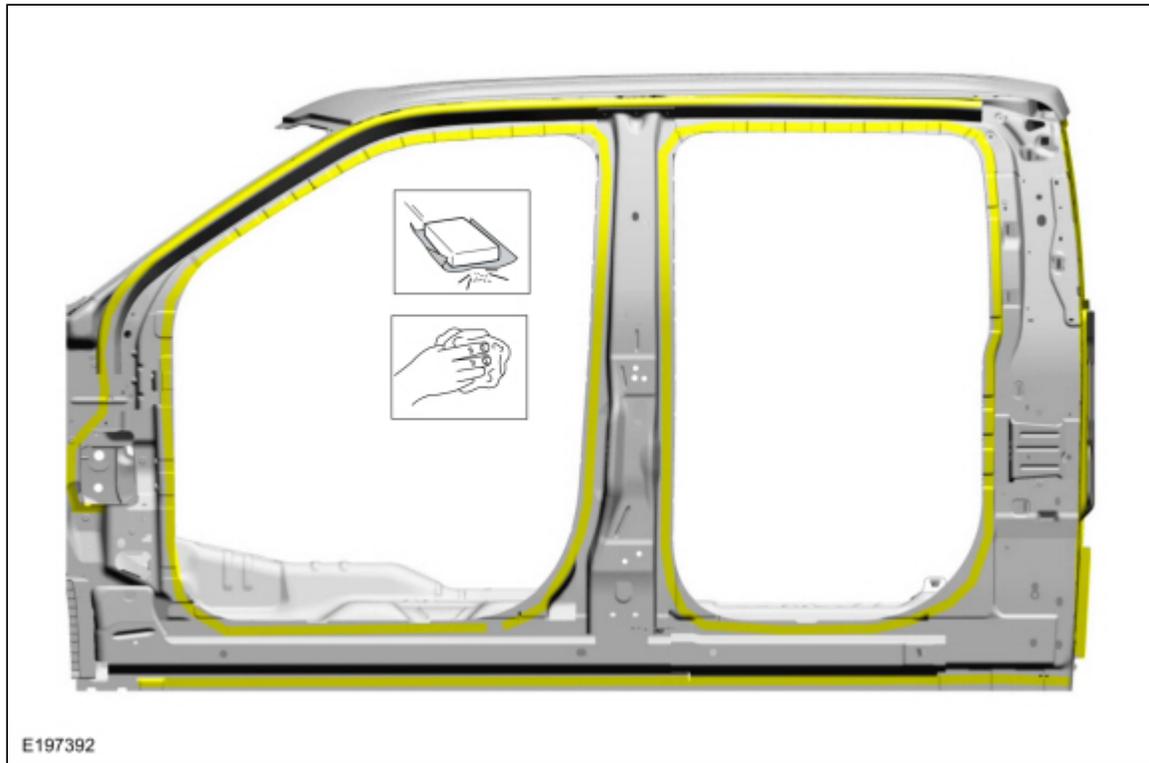
Refer to: [Joining Techniques](#) (501-25 Body Repairs - General Information, General Procedures).

- Install backer plate to existing vehicle body panel.

2. **NOTE:** Pay particular attention to areas where NVH foam was applied in assembly.

80-120 grit sand paper.

Sand to remove old adhesive from all mating surfaces and clean.



- 3. 80-120 grit sand paper.  
Sand to remove old adhesive from all mating surfaces and clean.

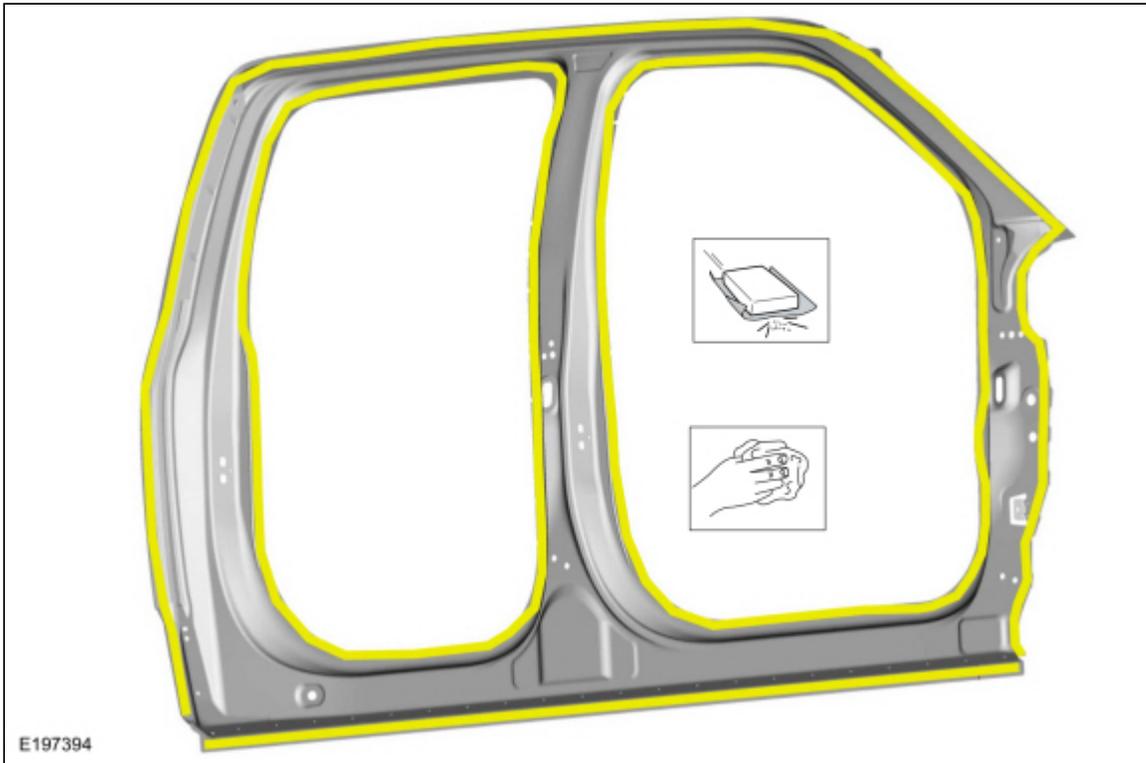




- 4. 80-120 grit sand paper.  
Sand to remove e-coat from all mating surfaces and clean.

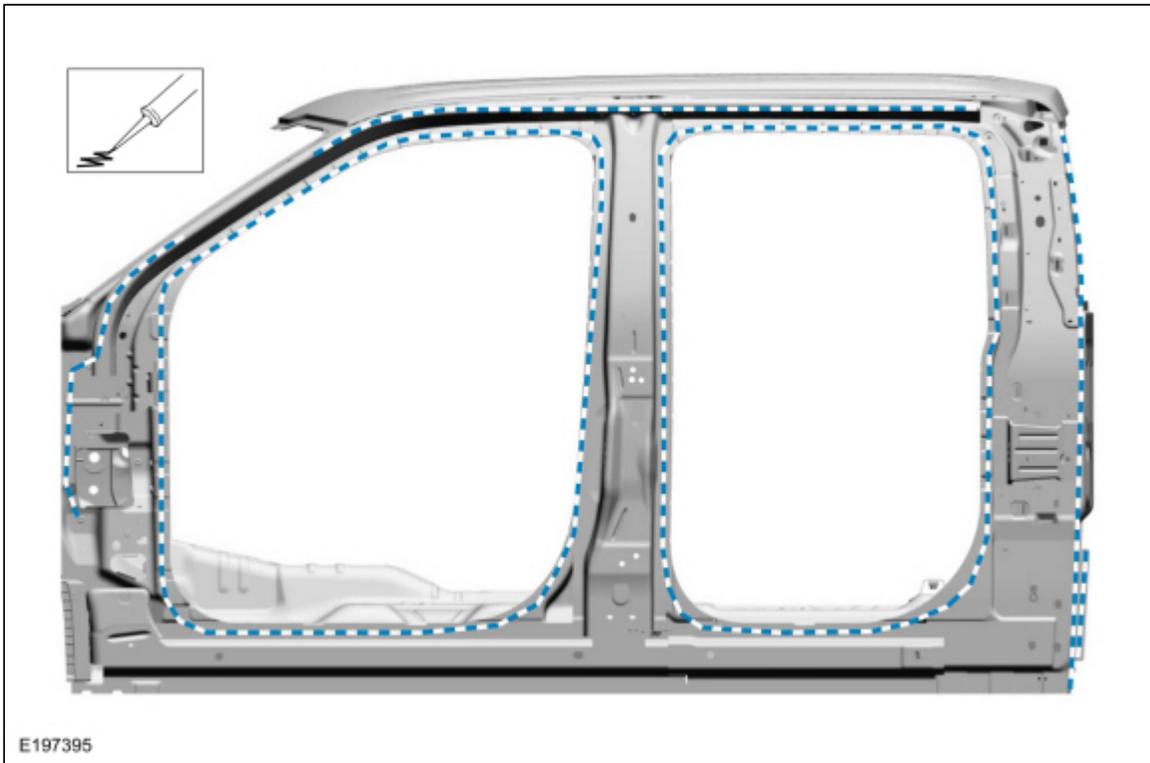




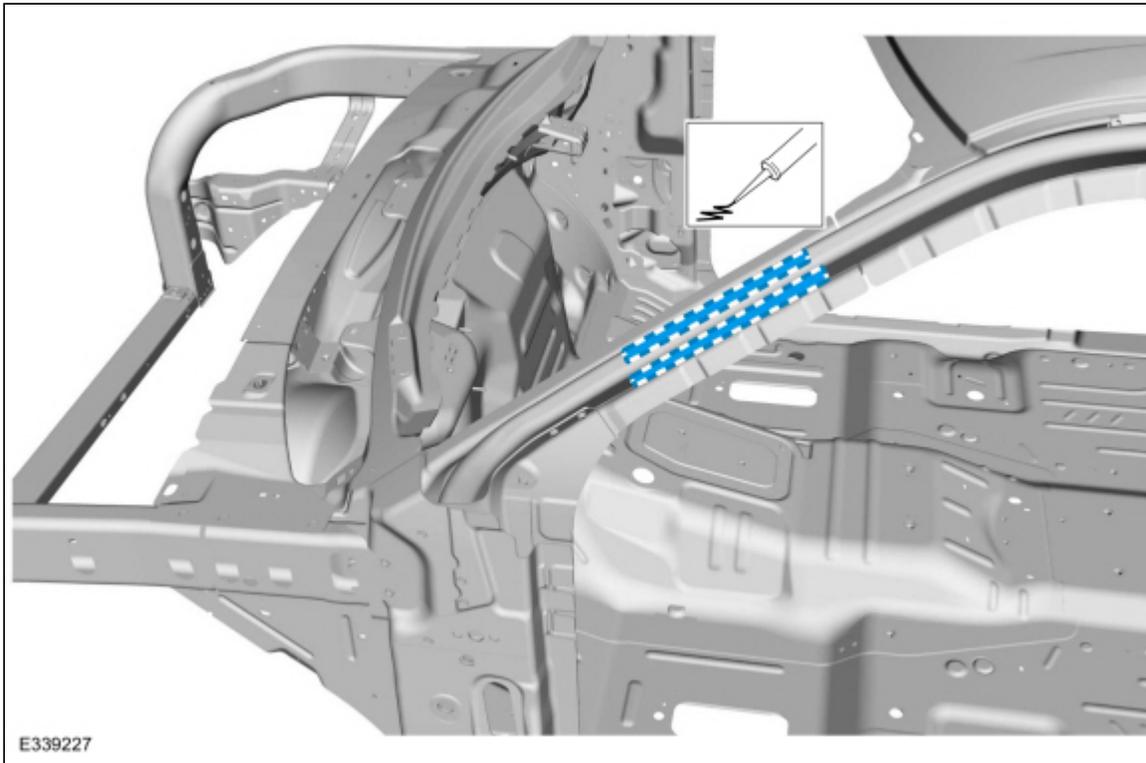
5. Apply structural adhesive as indicated.  
*Material:* Metal Bonding Adhesive / TA-1, TA-1-B, 3M™ 08115, LORD Fusor® 108B





- 6. Apply urethane adhesive and flexible foam.  
*Material:* Flexible Foam Repair / 3M™ 08463, LORD Fusor® 121  
*Material:* Sika Tack ASAP Urethane Adhesive





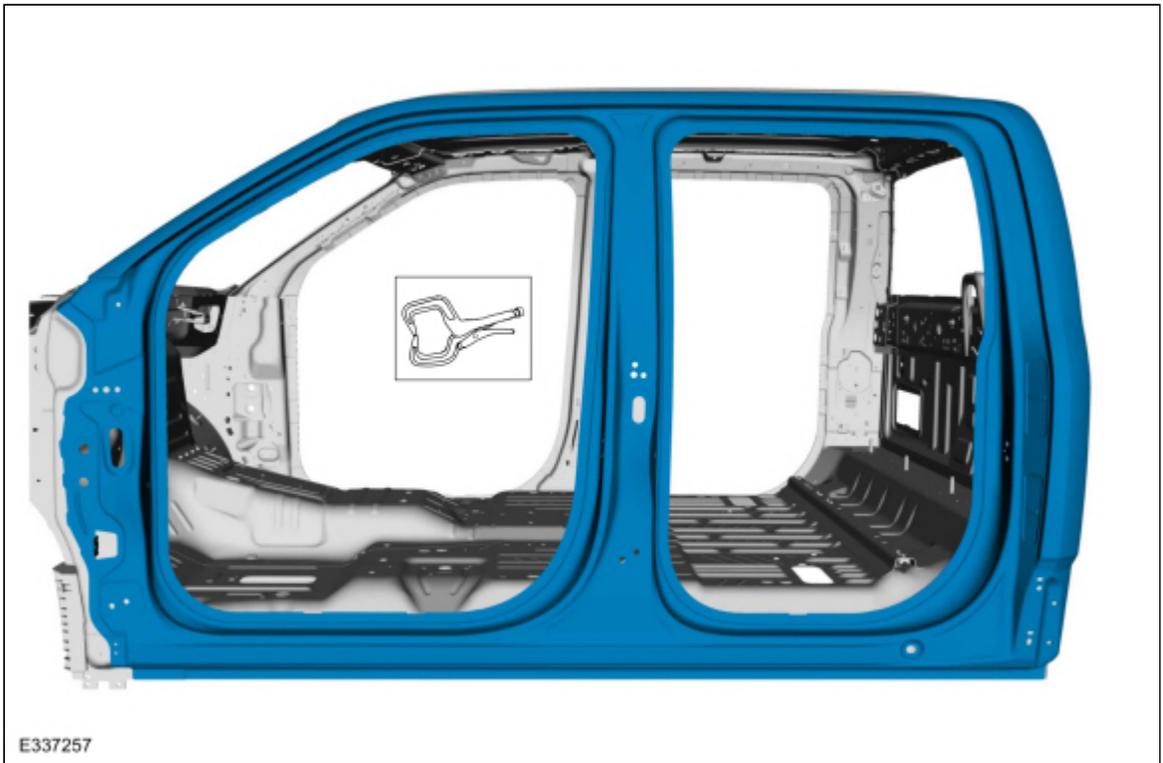
- 7. Apply structural adhesive as indicated.  
*Material:* Metal Bonding Adhesive / TA-1, TA-1-B, 3M™ 08115, LORD Fusor® 108B





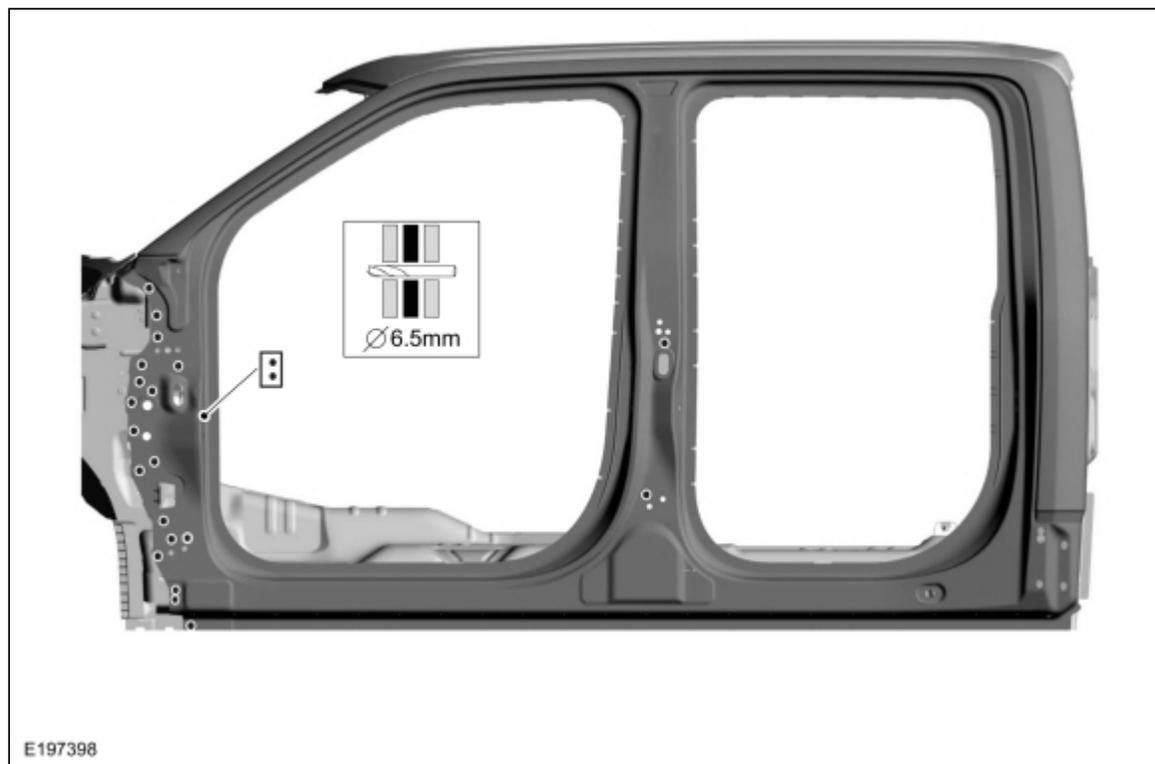
- 8. Install, align and clamp the service panel.  
Use the General Equipment: Locking Pliers





- 9. **Partial panel replacement:** Complete joining of service panel to backer plate and weld the sectioning seam using a MIG welder set up for aluminum.  
Use the General Equipment: MIG/MAG Welding Equipment
- 10. Drill 6.5 mm holes as indicated.  
Use the General Equipment: 6.5 mm Drill Bit





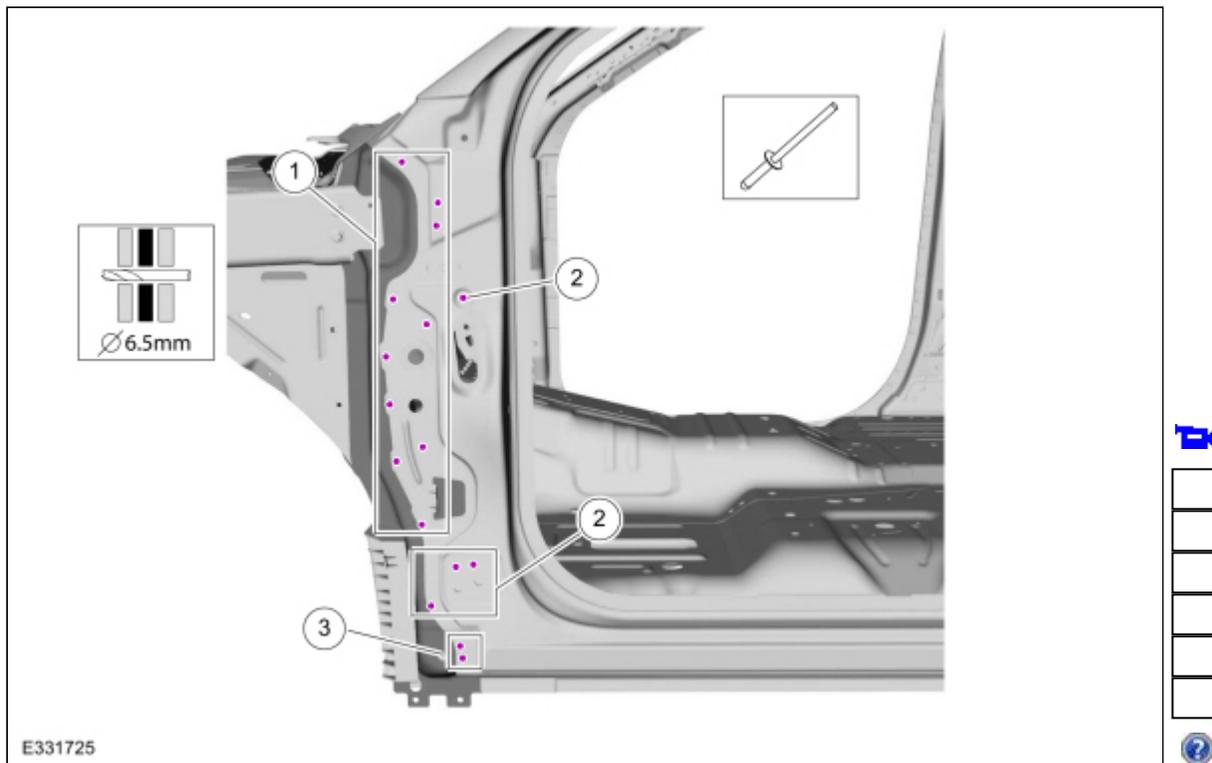
11. **NOTE:** Do not install SPR fasteners directly in old SPR fastener location. SPR fasteners must be installed adjacent to the original location matching original quantity.

**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.

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



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

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	DP11-220/H	SA-0400/SA-0401	-	W790376-S900	-
3	W717185-S900	EL	DG11-220/H	SA-0400/SA-0402	-	W790377-S900	-
4	W708717-S900	AW	DP11-200/H	SA-0400/SA-0402	-	W790377-S900	-

5	W717186-S900	EN	DP11-200/H	SA-0400/SA-0402	-	W790377-S900	-
6	W717184-S900	QA	DP10-200/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

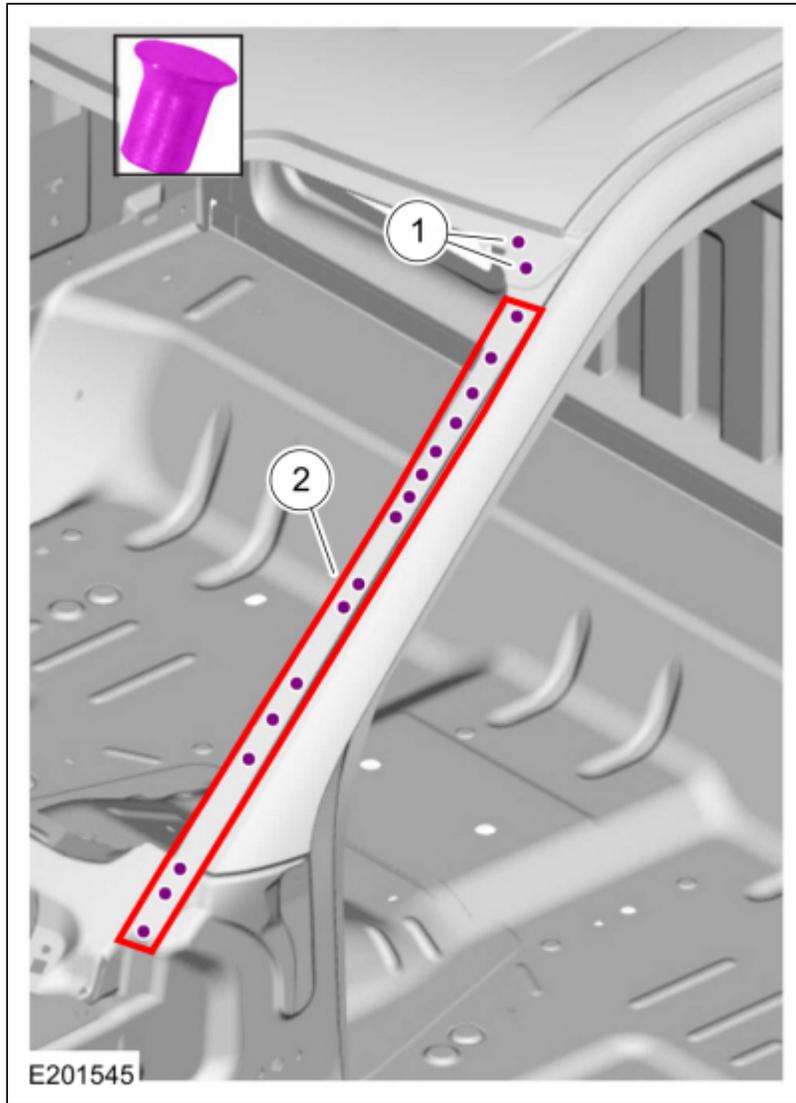


### 13. Install fasteners.

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

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





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	-	-	-	-	W708777-S900C	-	-
2	W708713-S900	AS	DZ09-025/H	SA-0400/SA-0402	-	W790377-S900	-
3	W708717-S900	AW	DG10-220/H	SA-0400/SA-0402		W790377-S900	

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

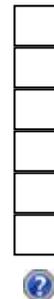
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer

Use the General Equipment: Blind Rivet Gun

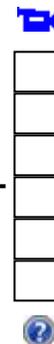




15. Using a MIG welder set up for aluminum, weld the roof seam.  
Use the General Equipment: MIG/MAG Welding Equipment



16. Metal finishing:  
Metal finish all seams using typical aluminum metal finishing techniques.  
Refer to: [Special Repair Considerations for Aluminum Repairs](#) (501-25 Body Repairs - General Information, Description and Operation).
17. Sand and prime the entire repair using a Ford approved paint system.
18. Apply **NVH** foam.  
*Material:* Flexible Foam Repair / 3M™ 08463, LORD Fusor® 121
19. **Seam Sealing:** All seams must be sealed to production level.  
*Material:* Seam Sealer / TA-2-B, 3M™ 08308, LORD Fusor® 803DTM
20. Seal the roof joint.  
*Material:* Roof Ditch Sealer / 3M™ 08307, LORD Fusor® 129



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21. Refinish the entire repair area using a Ford approved paint system and typical refinishing techniques.
  22. Install the side curtain air bag.  
Refer to: [Side Curtain Airbag - SuperCrew](#) (501-20B Supplemental Restraint System, Removal and Installation).
  23. Install the windshield and rear window.  
Refer to: [Fixed Glass](#) (501-11 Glass, Frames and Mechanisms, General Procedures).
  24. Install the roof moulding and cab corner trim.  
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).

25. Install the door opening weatherstrips.

26. Install the A-pillar, B-pillar and C-pillar trim panels.

Refer to: [A-Pillar Trim Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

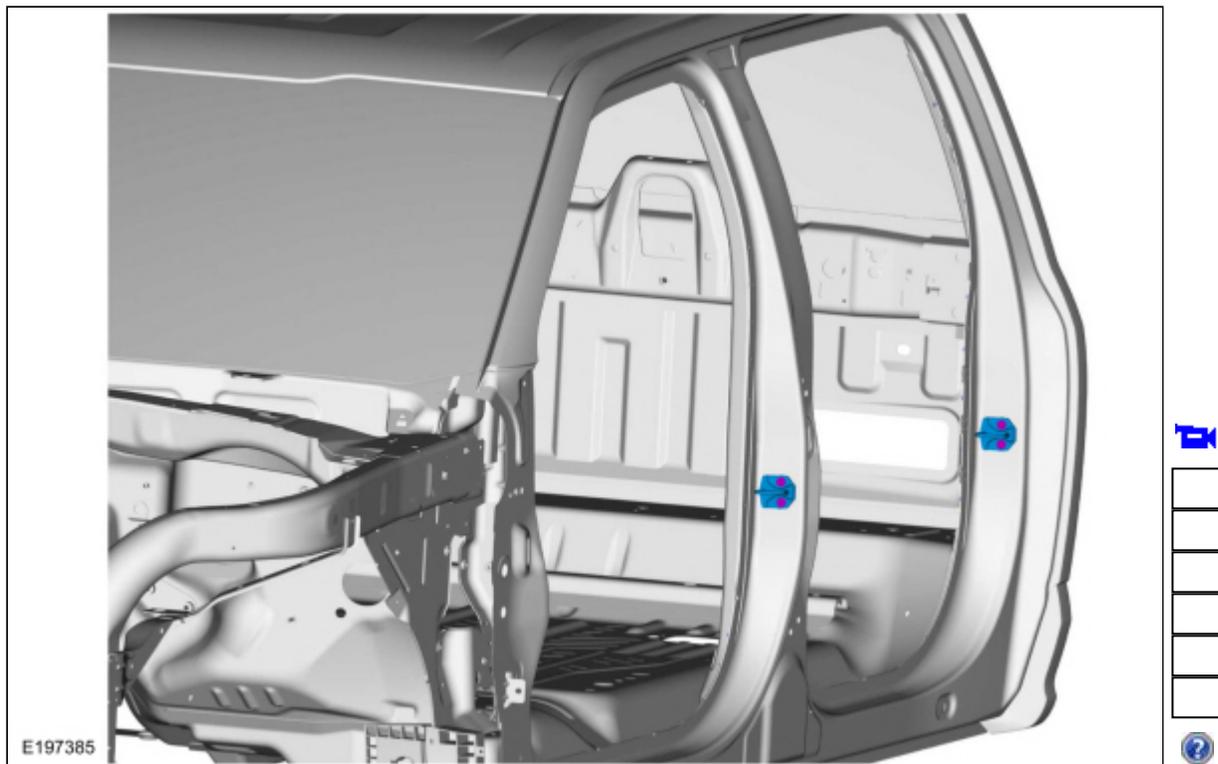
Refer to: [B-Pillar Trim Panel - SuperCrew](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

Refer to: [C-Pillar Trim Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

27. Install the front and rear door scuff plates.

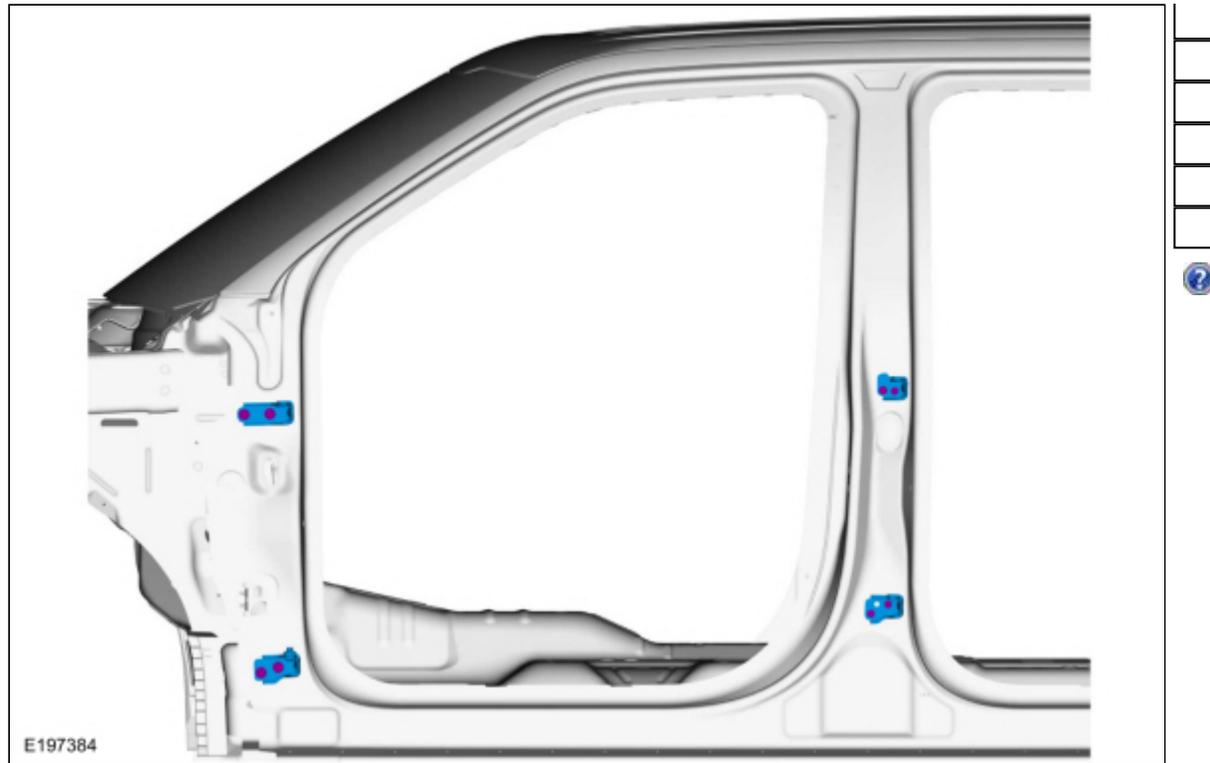
28. Install the front and rear door strikers.

*Torque: 18 lb.ft (25 Nm)*



29. Install the front and rear door hinges to the body.

- Front door.  
*Torque: 20 lb.ft (27 Nm)*
- Rear door.  
*Torque: 22 lb.ft (30 Nm)*



30. Install the front fender.  
Refer to: [Fender](#) (501-02 Front End Body Panels, Removal and Installation).
31. Align the doors.  
Refer to: [Front Door Alignment - Regular Cab/SuperCrew](#) (501-03 Body Closures, General Procedures).  
Refer to: [Rear Door Alignment - SuperCrew](#) (501-03 Body Closures, General Procedures).
32. Install the pickup bed.  
Refer to: [Pickup Bed](#) (501-04 Pickup Bed and Platform Body, Removal and Installation).
33. Repower the SRS.  
Refer to: [Supplemental Restraint System \(SRS\) Repowering](#) (501-20B Supplemental Restraint System, General Procedures).

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