

501-29 Side Panel Sheet Metal Repairs  
Removal and Installation

2021 F-150

Procedure revision date: 10/23/2020

### Rocker Panel - SuperCrew

#### 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	-
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).

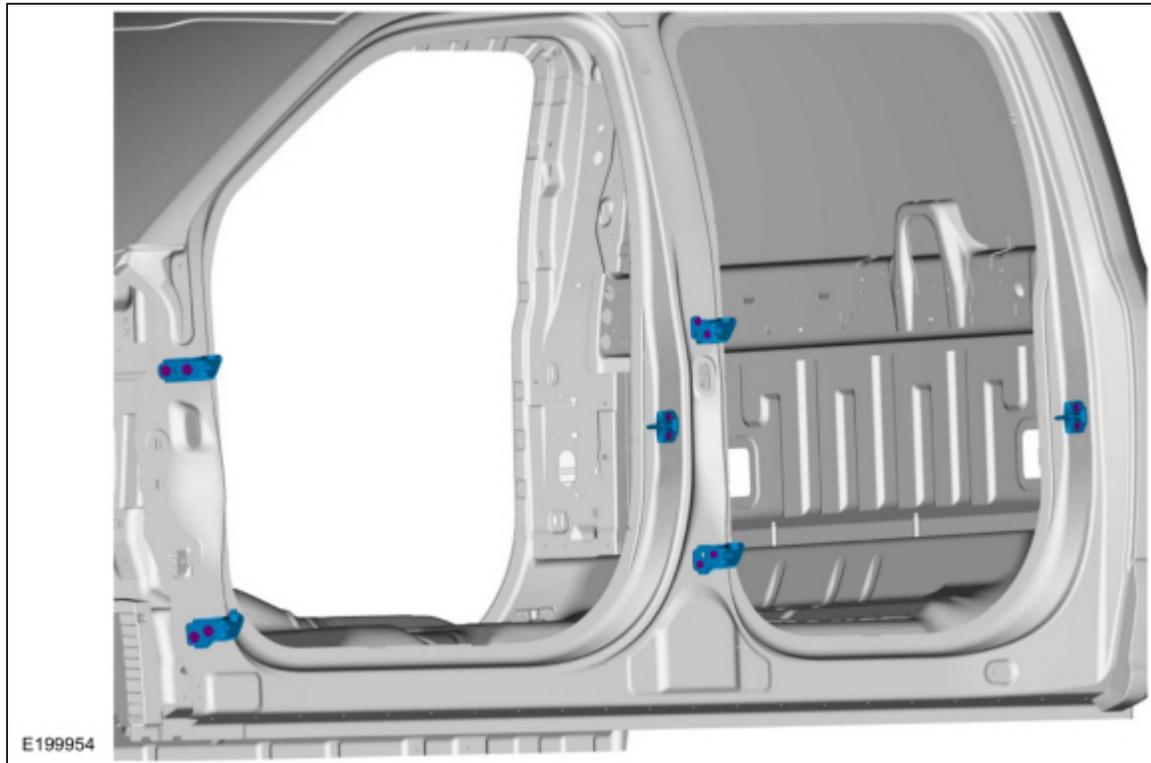
**NOTICE:** Body side sectioning is prohibited within 50 mm of door hinge, door striker and restraints anchoring points.

**NOTE:** 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:** The rocker panel may be sectioned. The following assumes complete component replacement. Sectioning may be adjusted to meet repair requirement as long as door hinge, striker and restraints requirements are met.

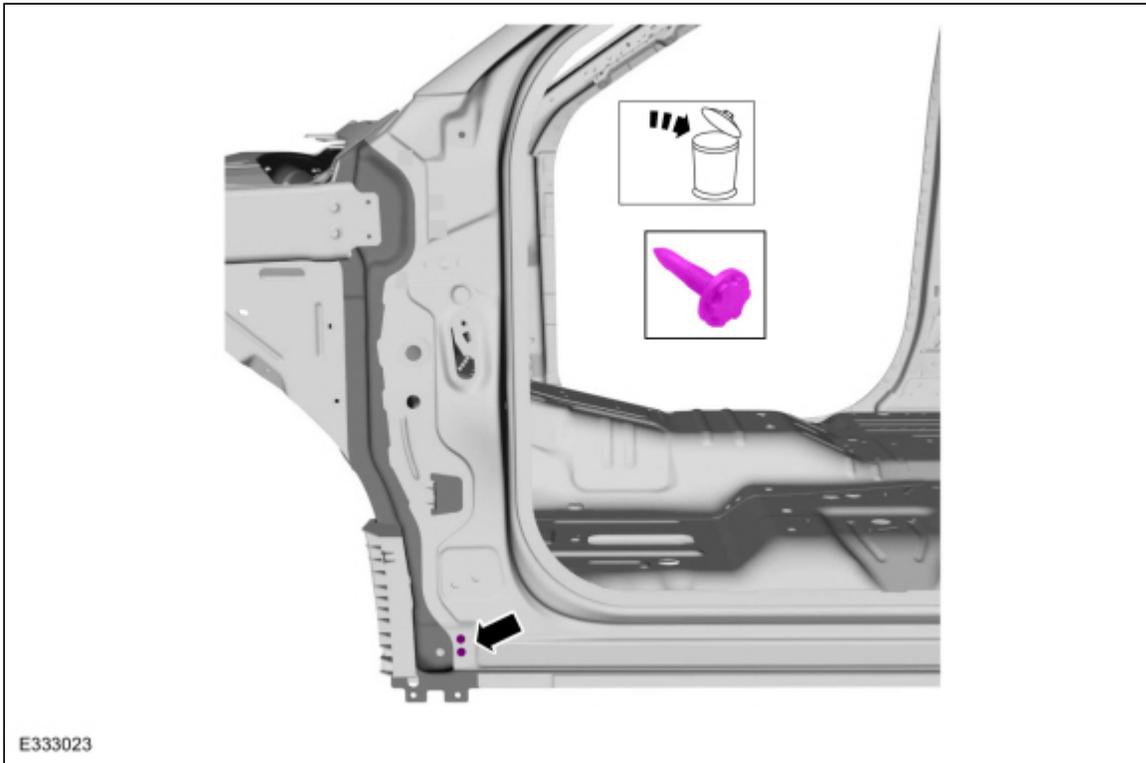
2. Depower the SRS.  
Refer to: [Supplemental Restraint System \(SRS\) Depowering](#) (501-20B Supplemental Restraint System, General Procedures).
3. Remove the front fender.  
Refer to: [Fender](#) (501-02 Front End Body Panels, Removal and Installation).
4. Remove the front and rear doors.  
Refer to: [Front Door - Regular Cab/SuperCrew](#) (501-03 Body Closures, Removal and Installation).  
Refer to: [Rear Door - SuperCrew](#) (501-03 Body Closures, Removal and Installation).
5. Remove the front and rear door strikers and hinges.





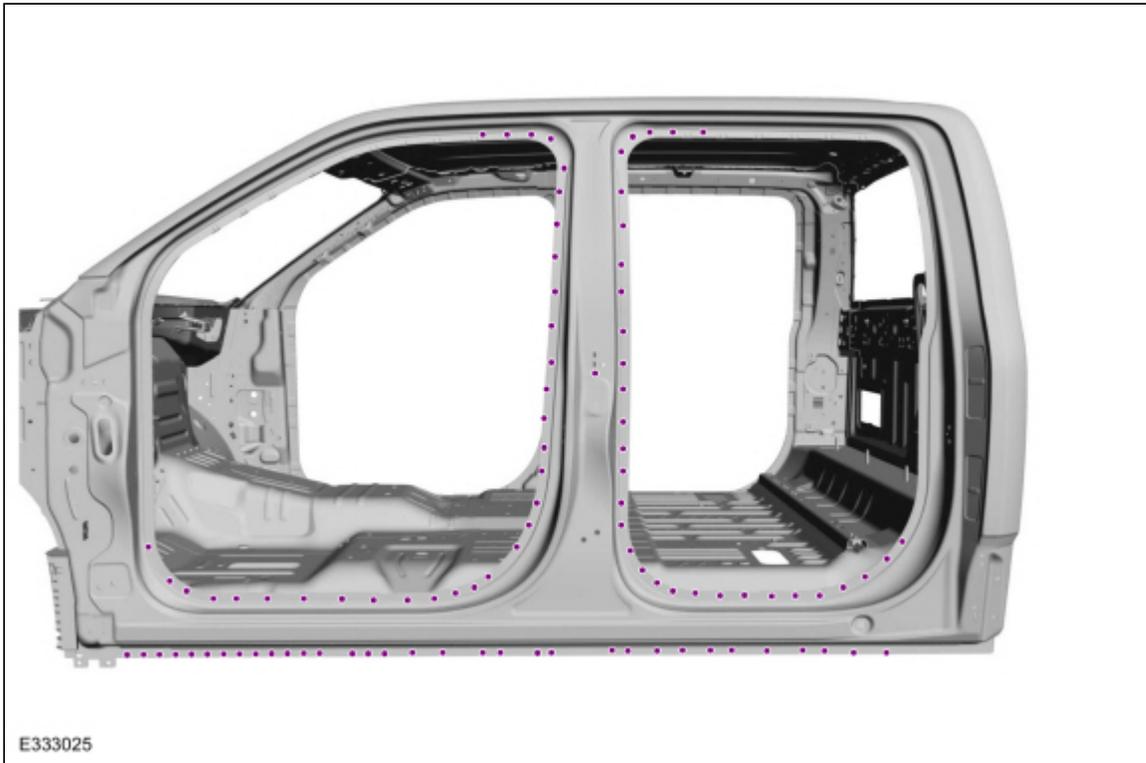
6. Verify the vehicle is dimensionally correct.  
Refer to: [Body and Frame](#) (501-26 Body Repairs - Vehicle Specific Information and Tolerance Checks, Description and Operation).
7. Remove the C-pillar reinforcement.  
Refer to: [C-Pillar Reinforcement](#) (501-29 Side Panel Sheet Metal Repairs, Removal and Installation).
8. Remove and discard the FDS fasteners.  
Use the General Equipment: Polydrive Bit Socket





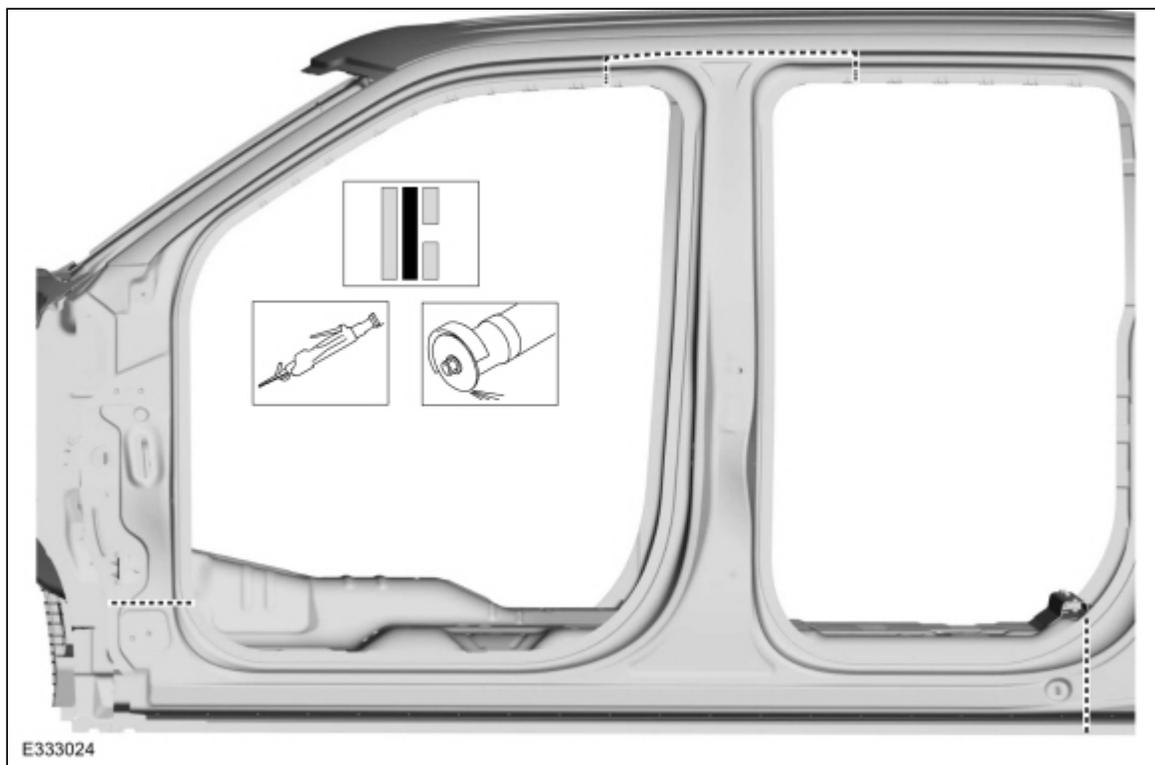
- 9. Remove the SPR fasteners.  
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer  
Use the General Equipment: Belt Sander





- 10. Measure and cut **the outer panel only** of the body side panel.  
Use the General Equipment: Air Body Saw  
Use the General Equipment: Spherical Cutter



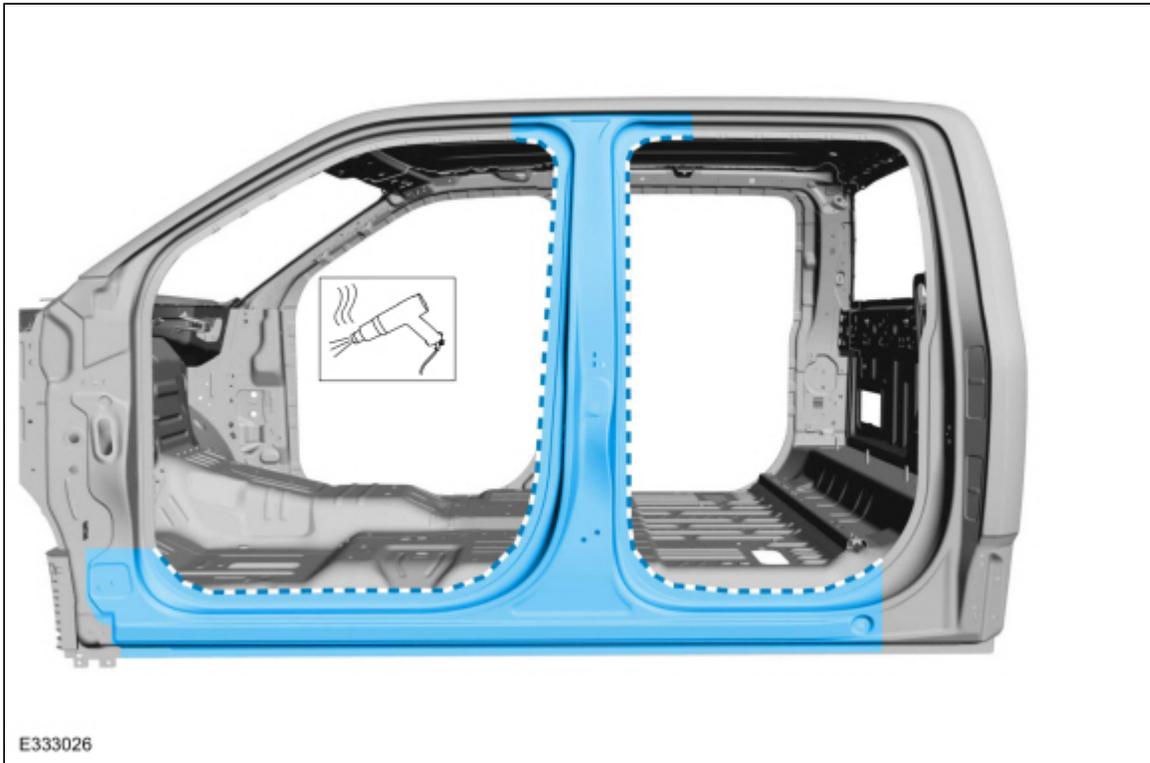


11. **NOTE:** Aluminum body panels are highly receptive to heat transfer. With the extensive use of structural adhesives and non-structural sealers used in vehicle construction, the potential of heat transfer could impact adhesives and sealers in non-associated panels during the repair process. Many 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 foam and baffle locations to aid in assembly.

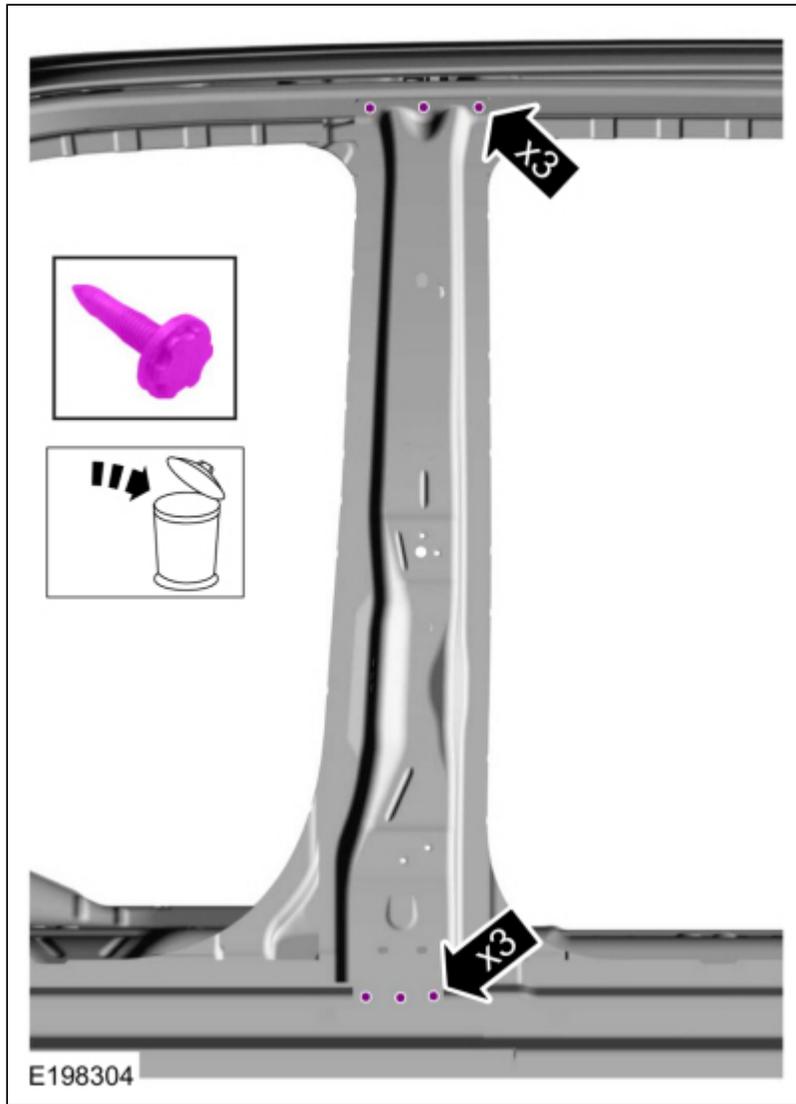
Break the adhesive bond and remove the outer sheet metal.





- 12. Remove and discard the B-pillar reinforcement FDS fasteners.  
Use the General Equipment: Polydrive Bit Socket





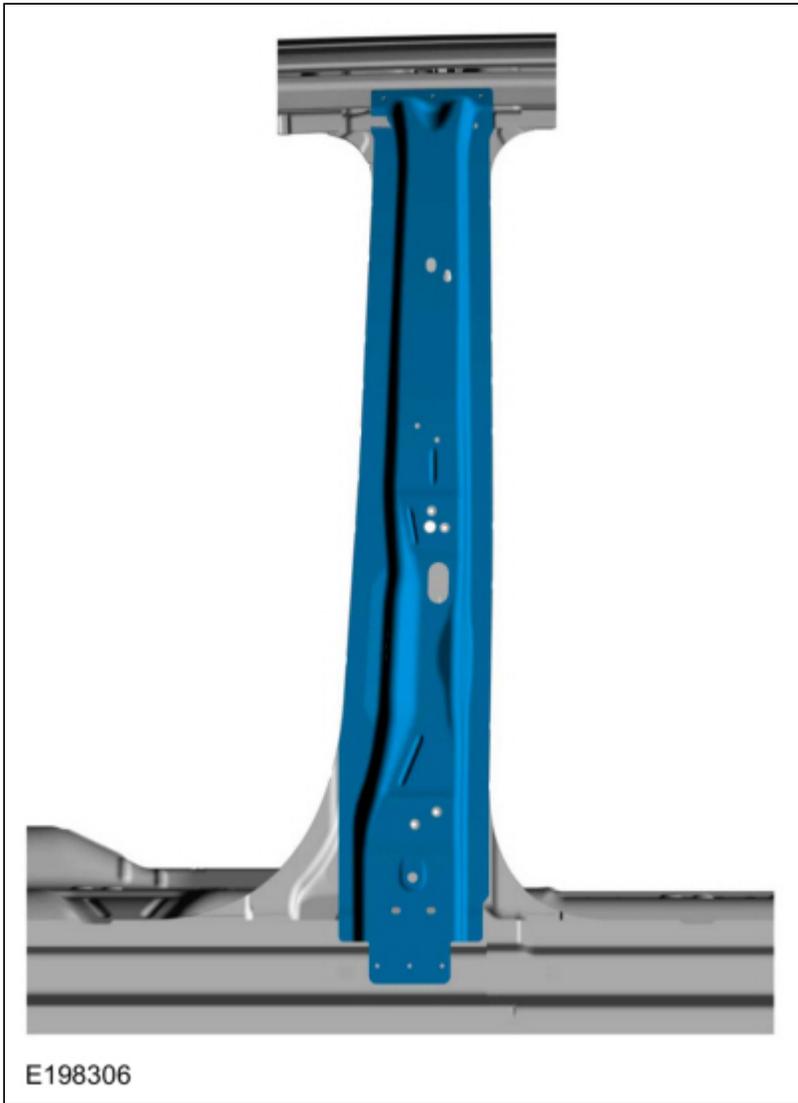
- 13. Remove the B-pillar reinforcement SPR fasteners.  
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer  
Use the General Equipment: Belt Sander





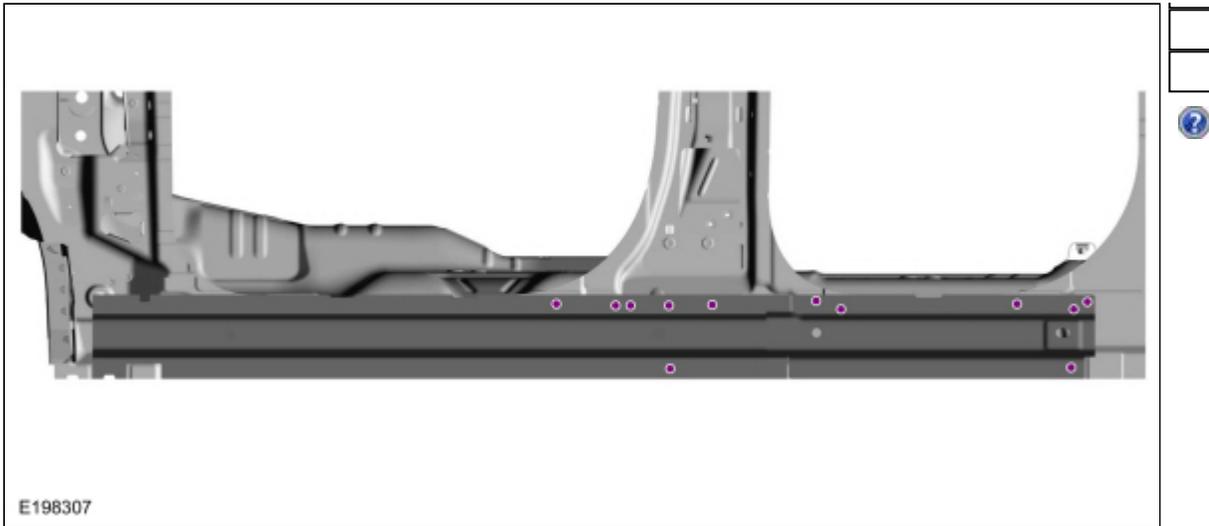
14. Remove the B-pillar reinforcement.



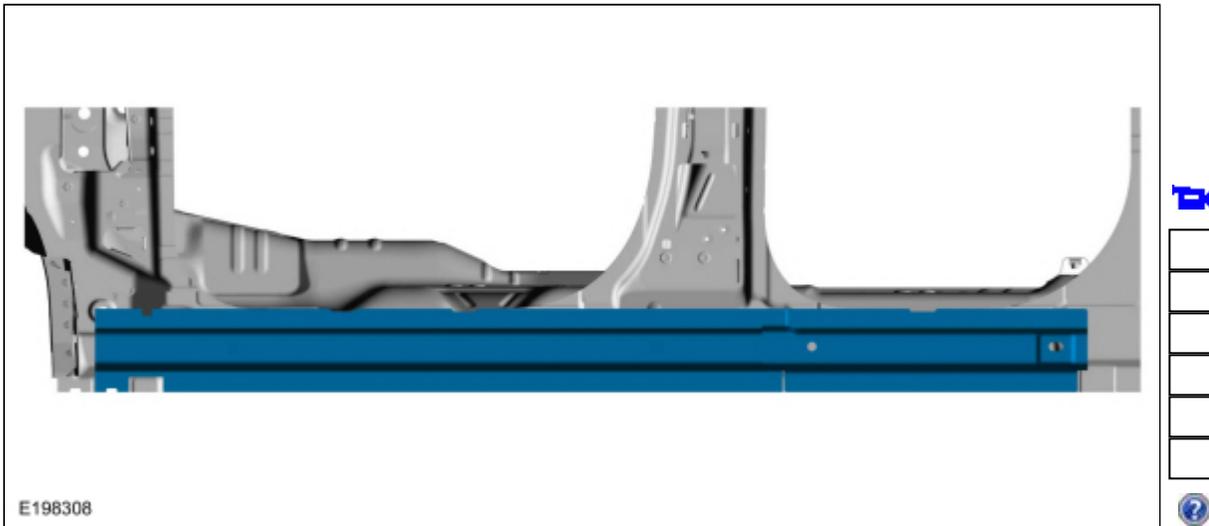


- 15. Remove the rocker panel inner reinforcement SPR fasteners.  
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer  
Use the General Equipment: Belt Sander

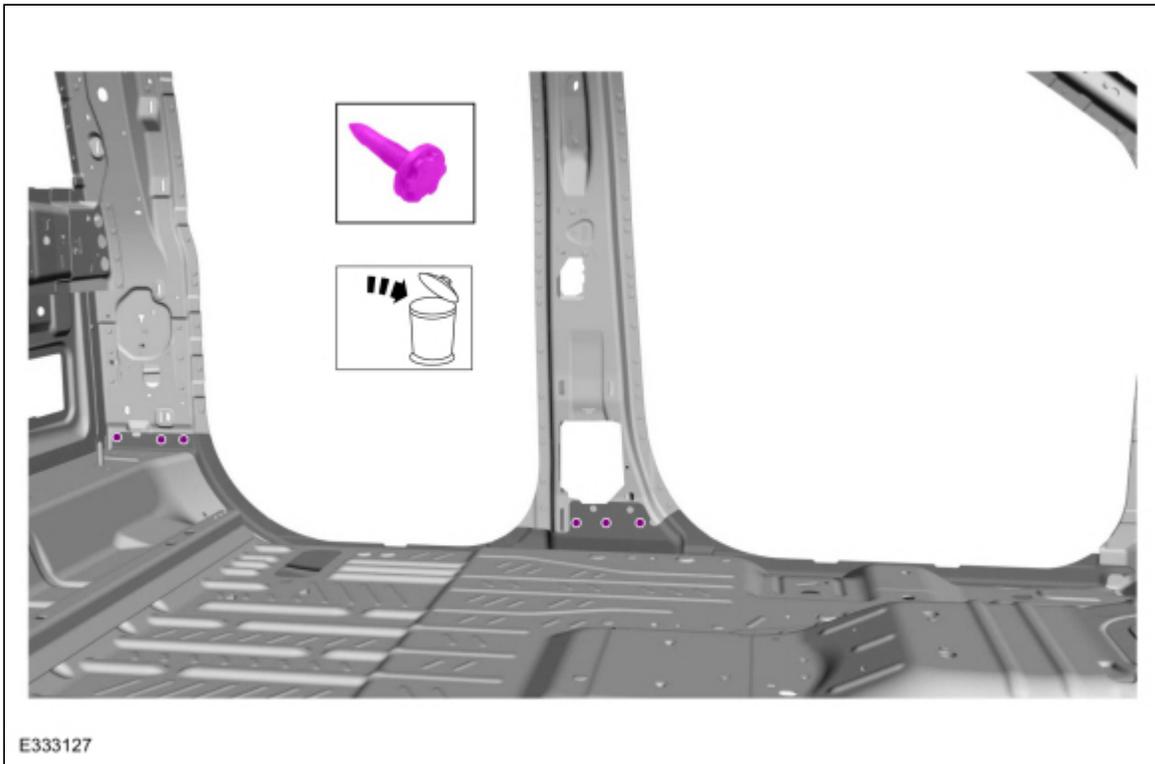




16. Remove the rocker panel inner reinforcement.

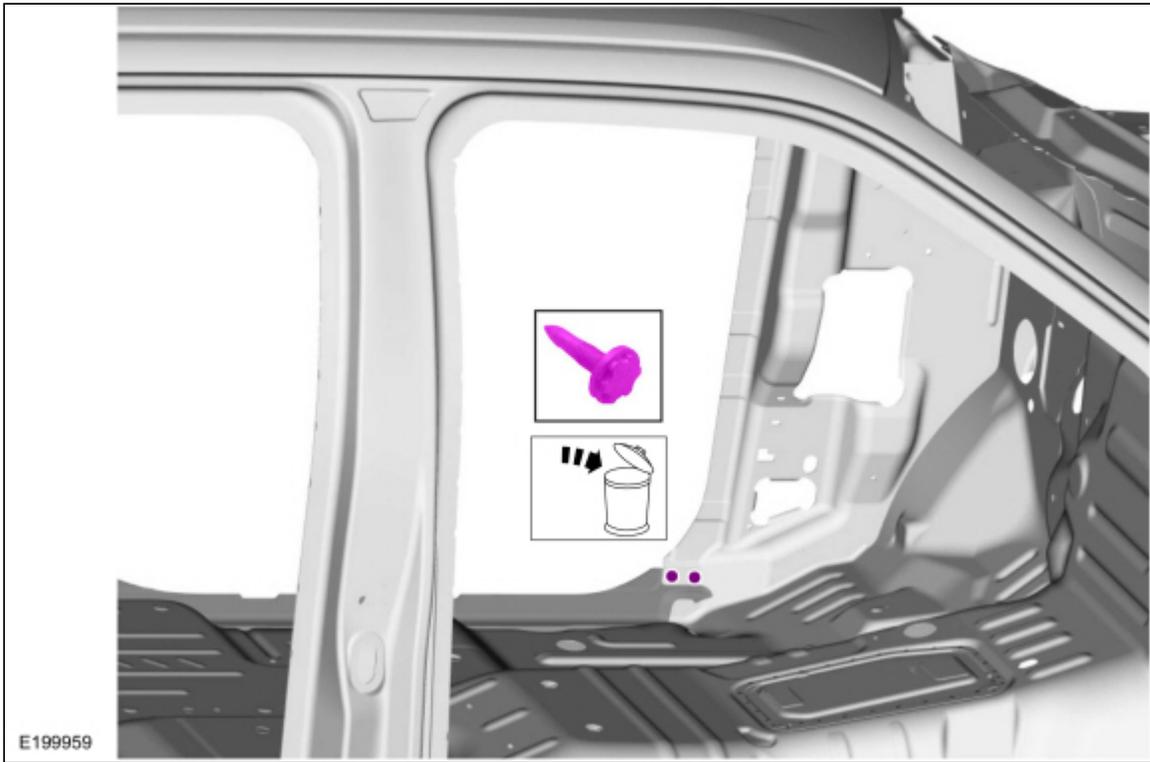


17. Remove and discard the B and C-pillar FDS fasteners.  
Use the General Equipment: Polydrive Bit Socket

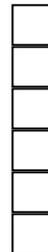


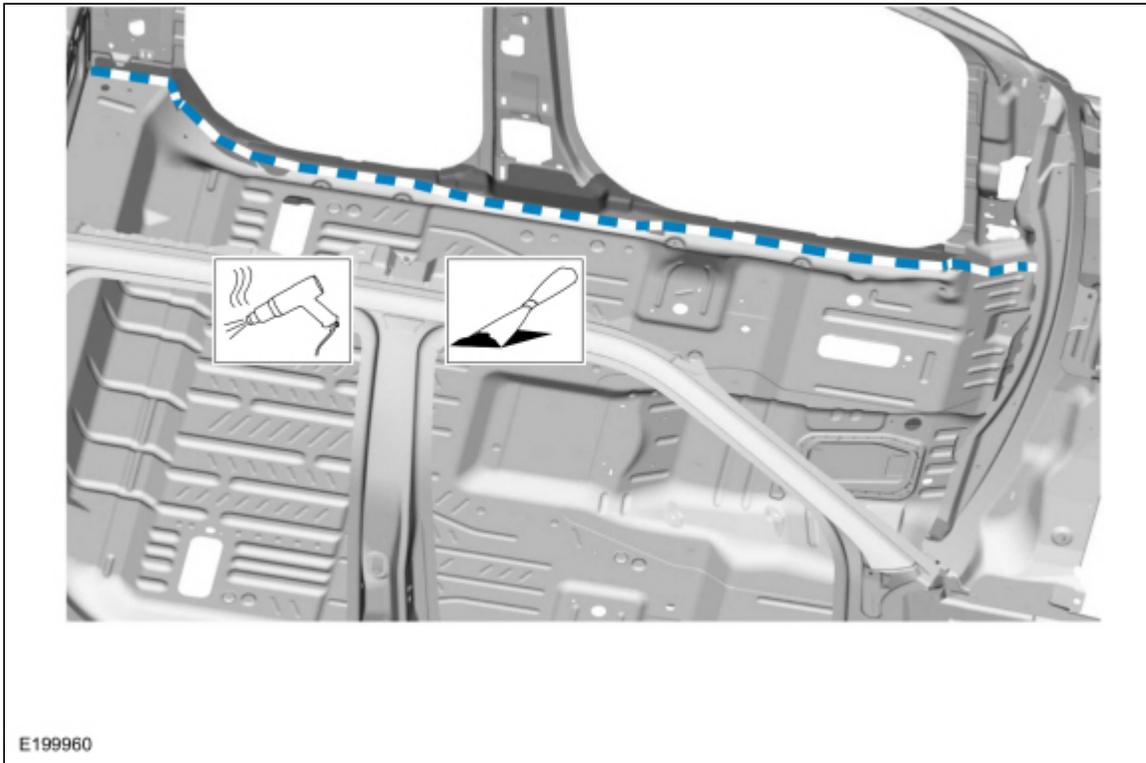
- 18. Remove and discard the A-pillar FDS fasteners.  
Use the General Equipment: Polydrive Bit Socket





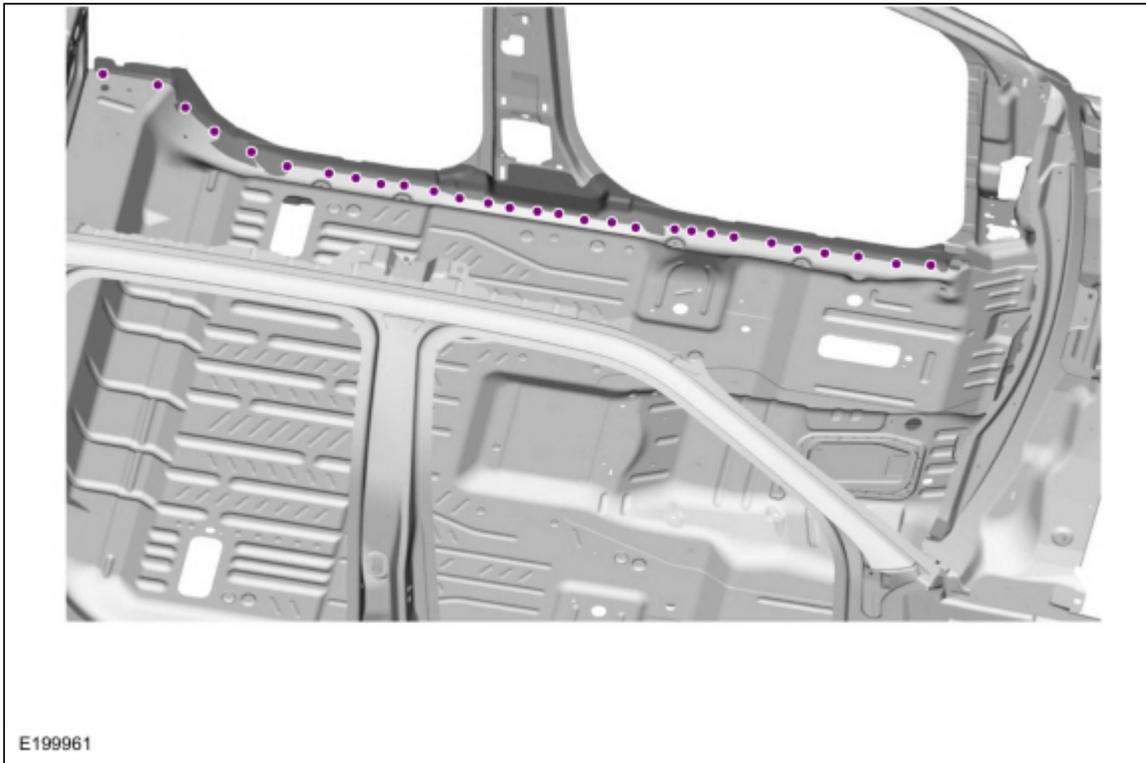
- 19. Remove the floor pan-to-rocker panel seam sealer.  
Use the General Equipment: Hot Air Gun  
Use the General Equipment: Scraper for Straight Edges



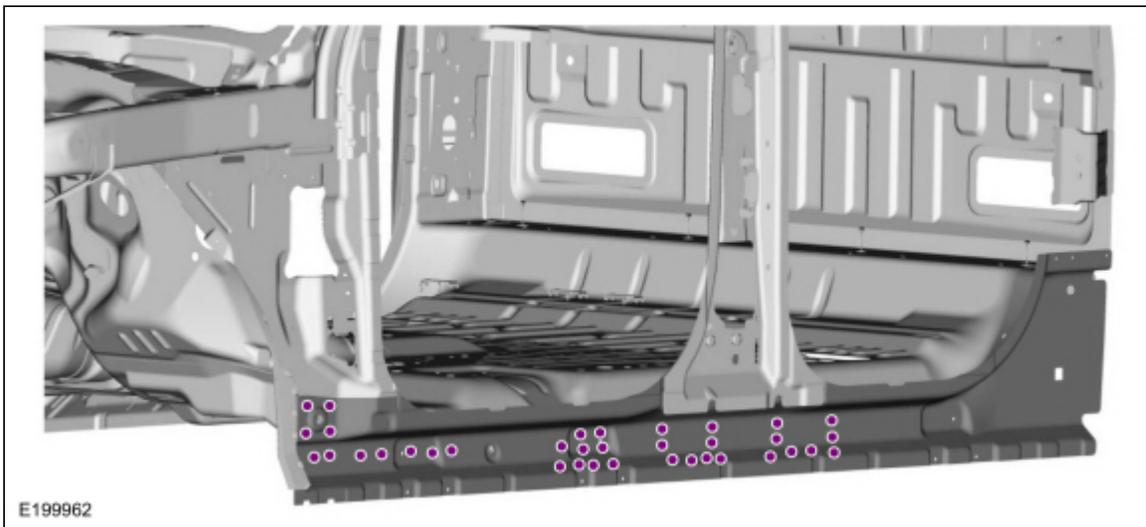


- 20. Remove and discard the floor pan-to-rocker panel SPR fasteners.  
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer  
Use the General Equipment: Belt Sander



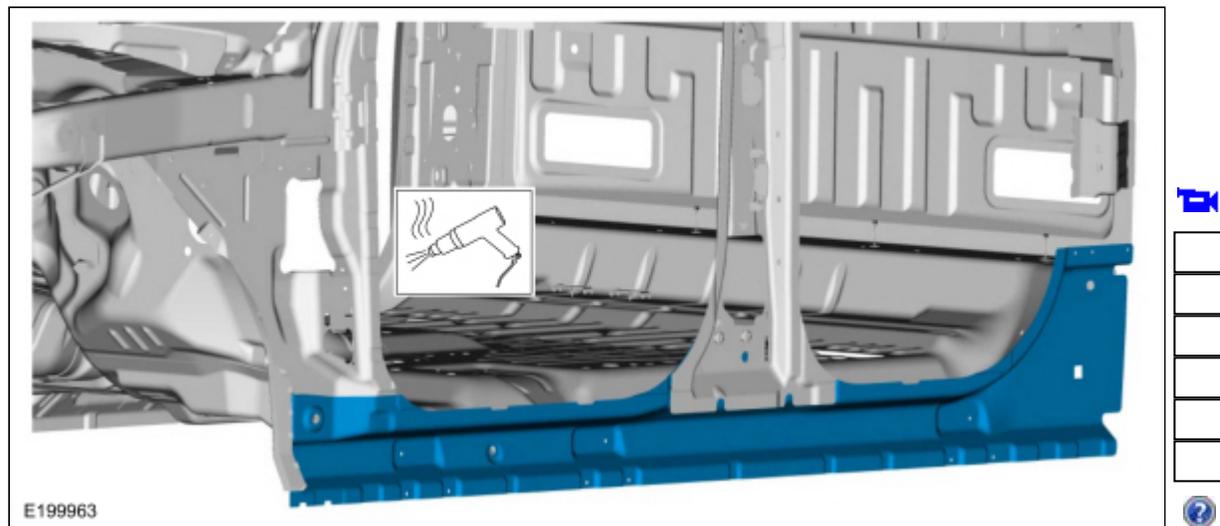


- 21. Remove the outer SPR fasteners.  
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer  
Use the General Equipment: Belt Sander



Navigation icons: a blue arrow pointing right, a vertical stack of six empty square boxes, and a blue question mark icon.

22. Break the adhesive bond and remove the rocker panel.  
Use the General Equipment: Hot Air Gun

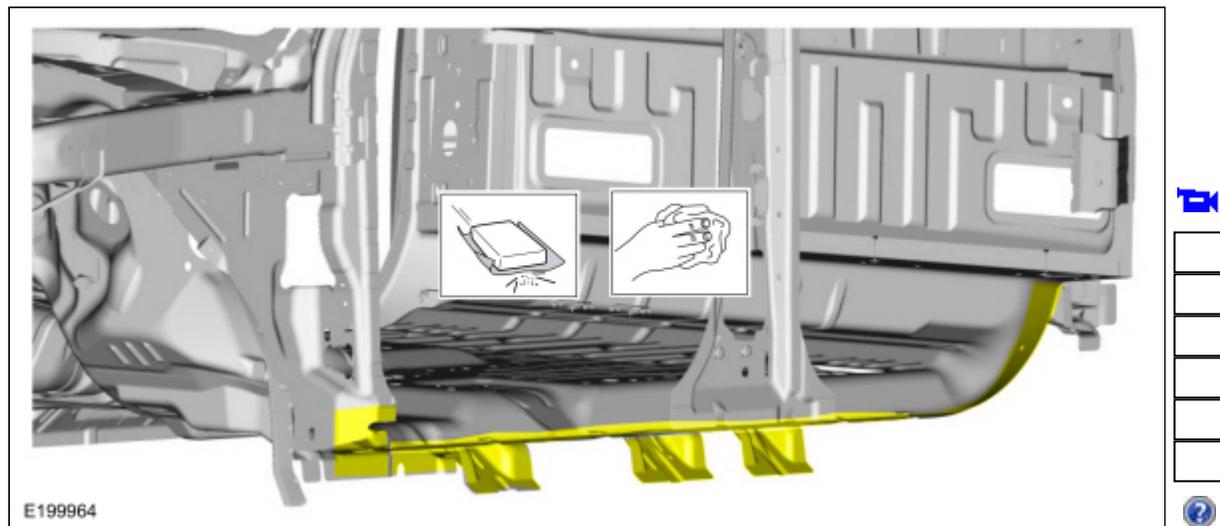


### Installation

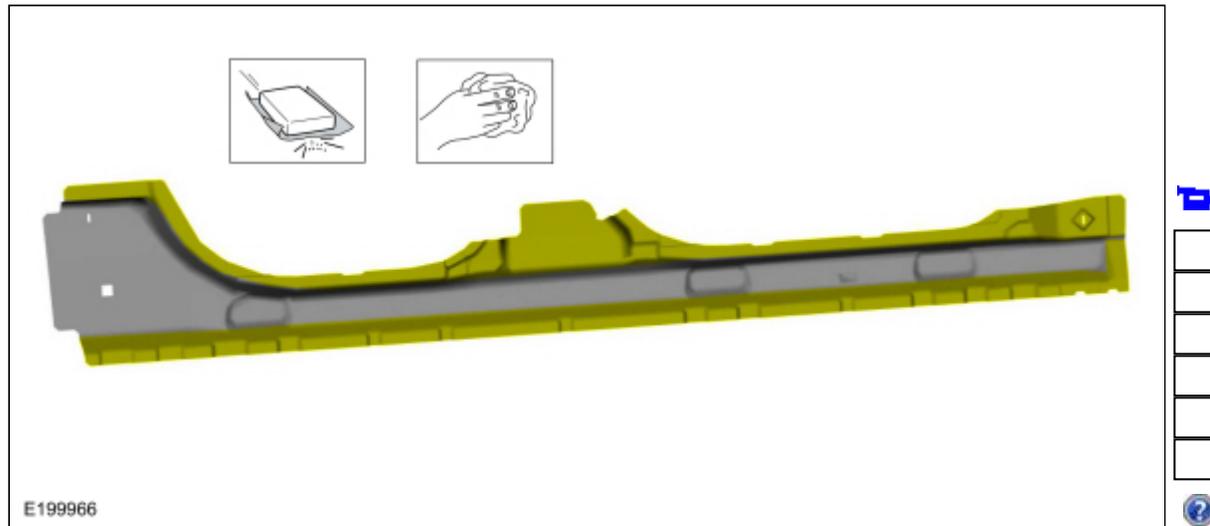
**NOTICE:** Body side sectioning is prohibited within 50 mm of door hinge, door striker and restraints anchoring points.

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

1. Sand using 80 grit sand paper to remove old adhesive and e-coat and clean.

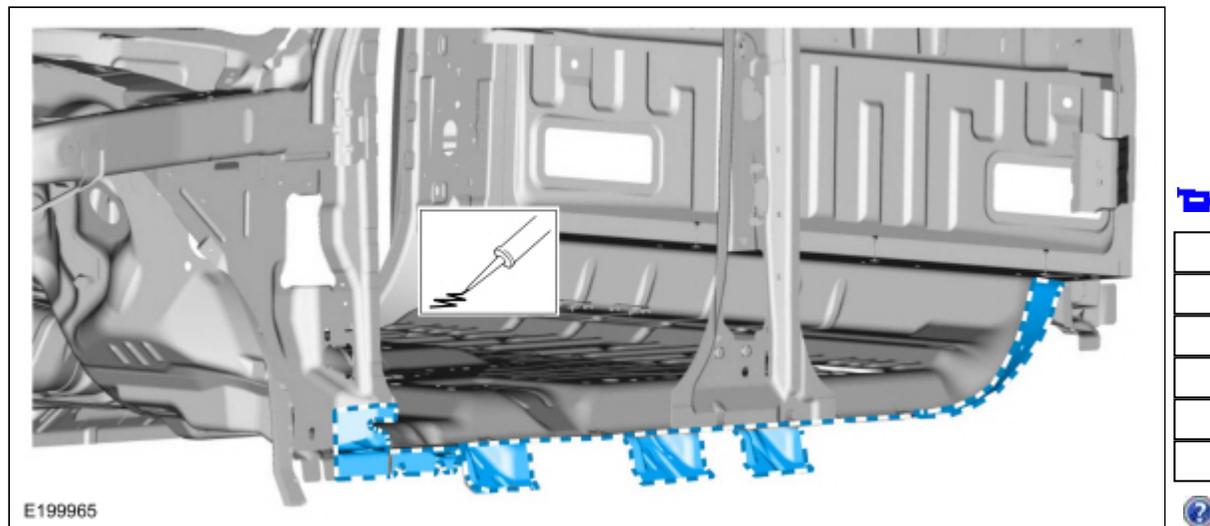


- Sand using 80 grit sand paper to remove old adhesive and e-coat and clean.

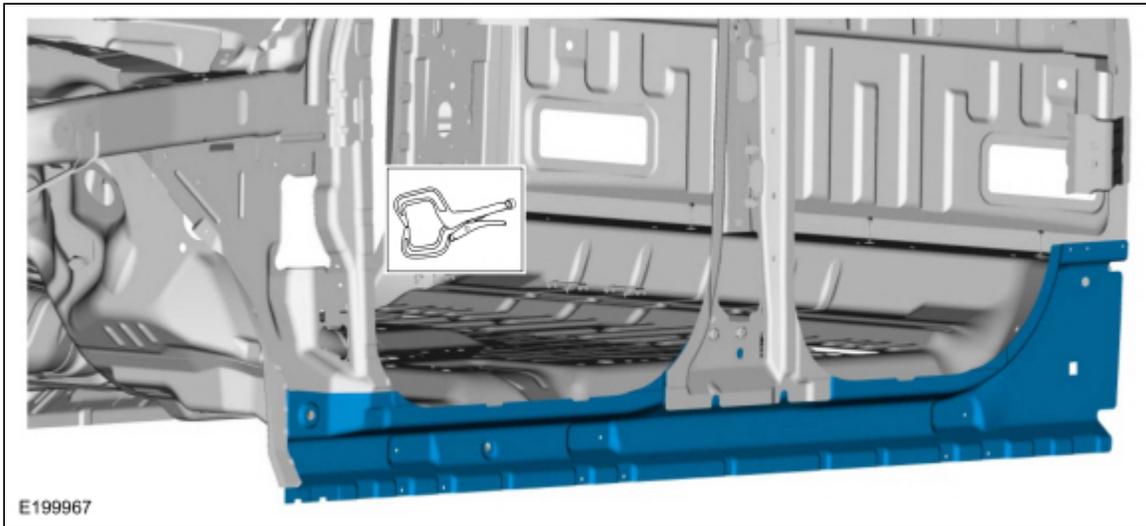


- Apply adhesive.

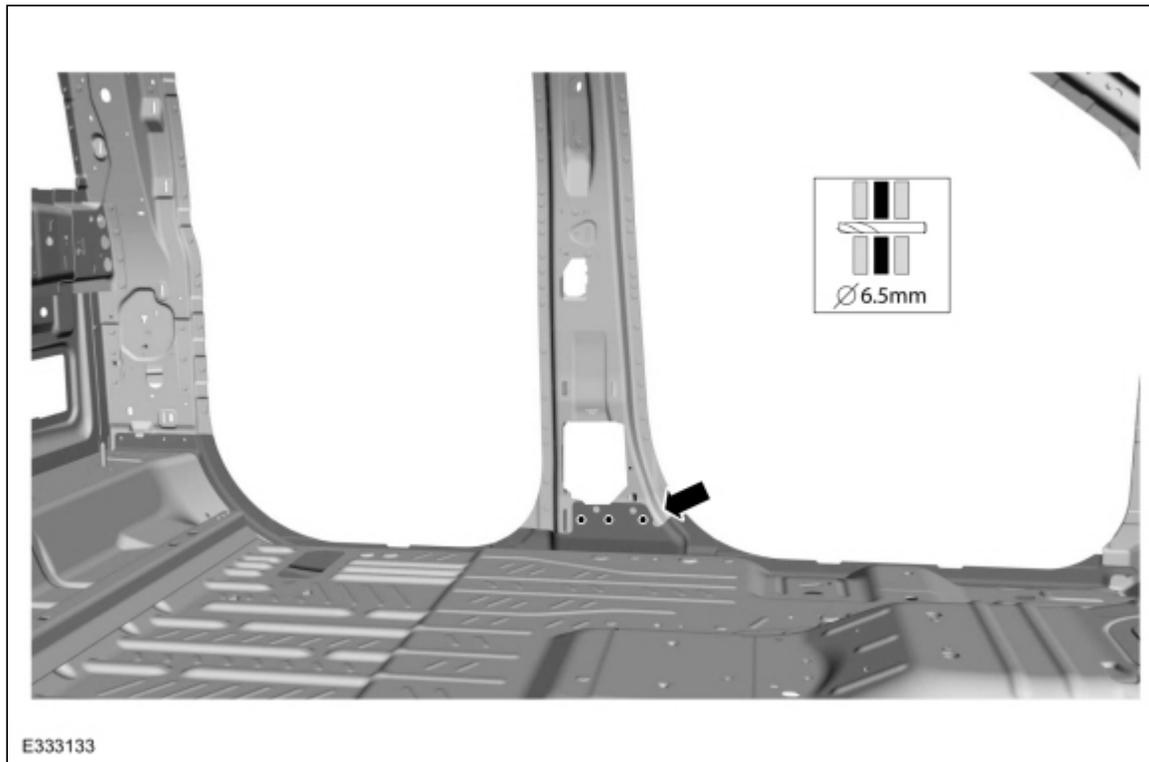
*Material:* Metal Bonding Adhesive / TA-1, TA-1-B, 3M™ 08115, LORD Fusor® 108B



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



- 5. Drill 6.5 mm holes for fasteners.  
Use the General Equipment: 6.5 mm Drill Bit

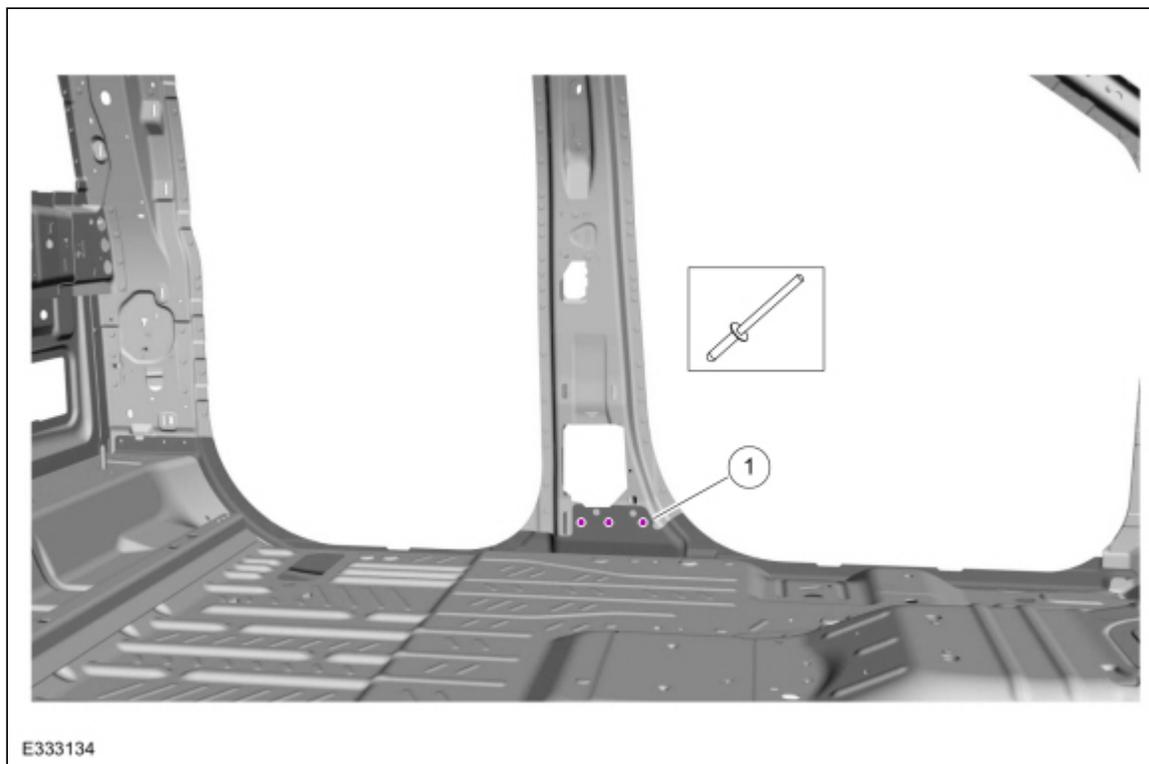


6. **NOTE:** SPR fasteners may not be placed directly over original SPR location. They must be placed adjacent to original location matching original quantity.

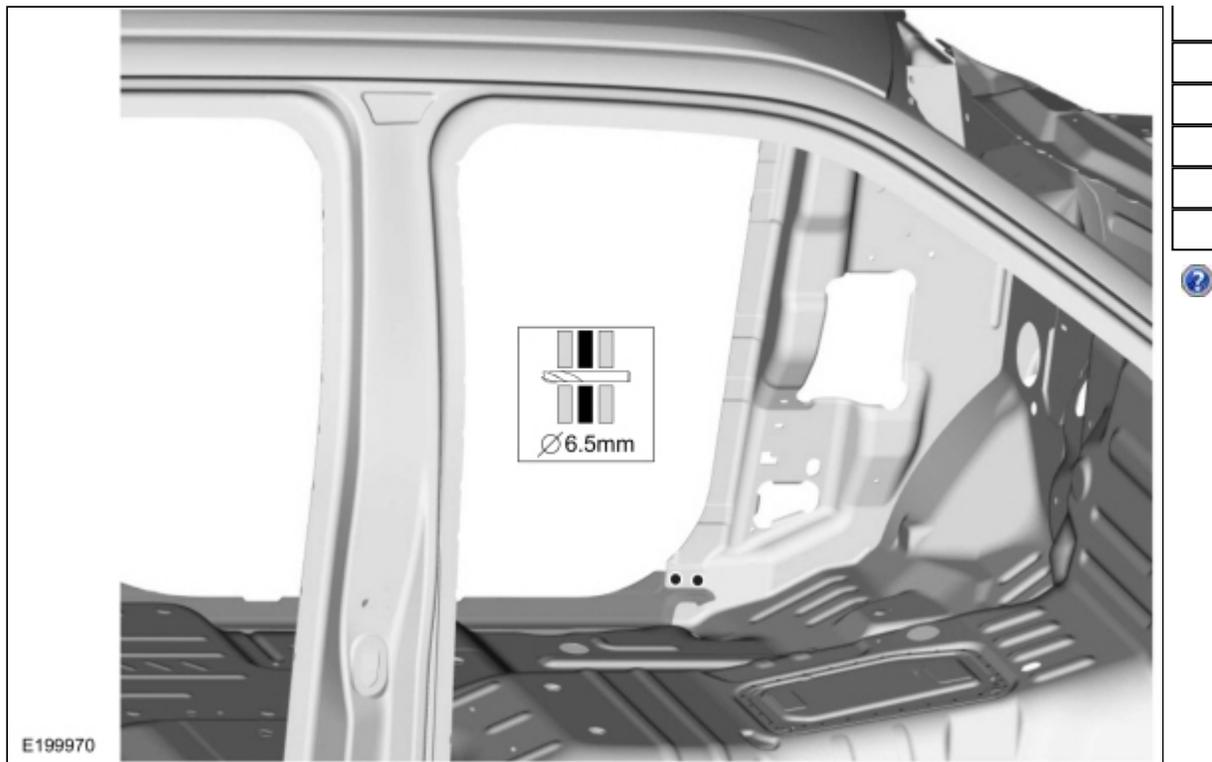
Install fasteners.

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	-	-	-	-	W708777-S900C	-	-

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



7. Drill 6.5 mm holes for fasteners.  
Use the General Equipment: 6.5 mm Drill Bit



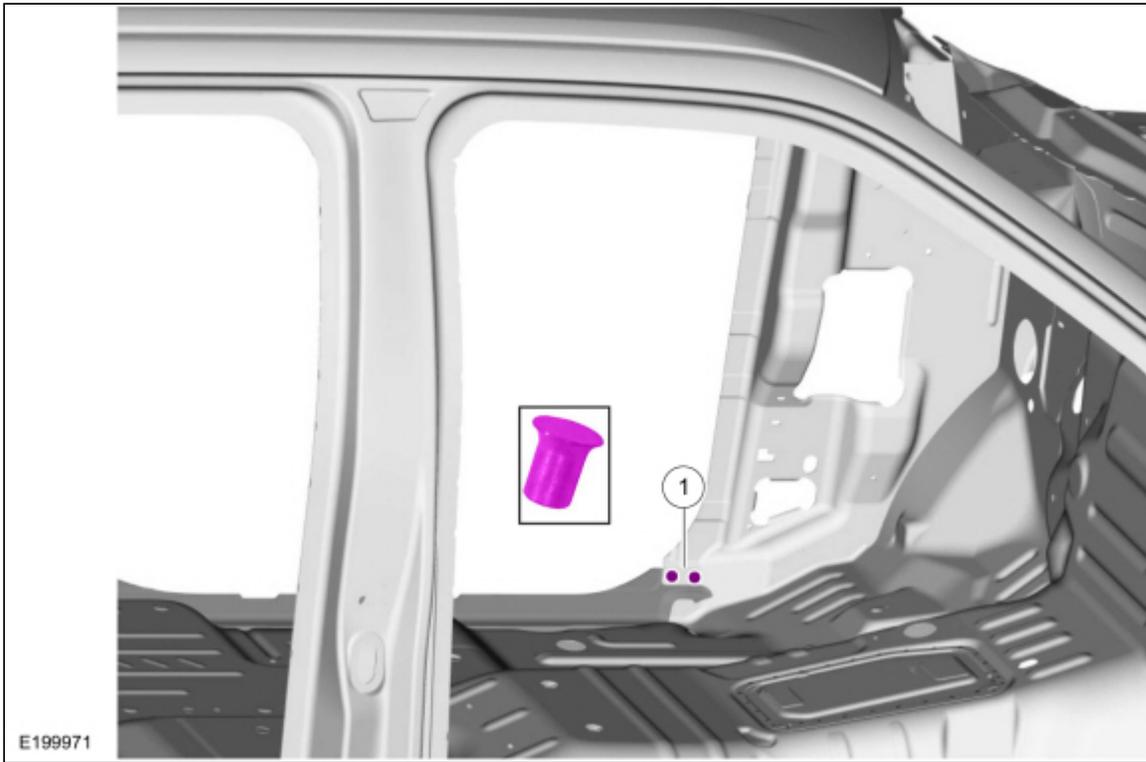
8. **NOTE:** SPR fasteners may not be placed directly over original SPR location. They must be placed adjacent to original location matching original quantity.

Install fasteners.

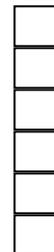
Item	SPR Number	SPR Code	Henrob® Car-O- Liner®, CMO®, Chief®, Spanesi® Wielande and Schill® Mandrel	Pro-Spot® Mandrel	Blind Rivet	Solid Rivet	Rivnut®
1	W717185-S900	EL	DP11-200/H	SA-0400/SA-0402	W708777-S900C	-	-

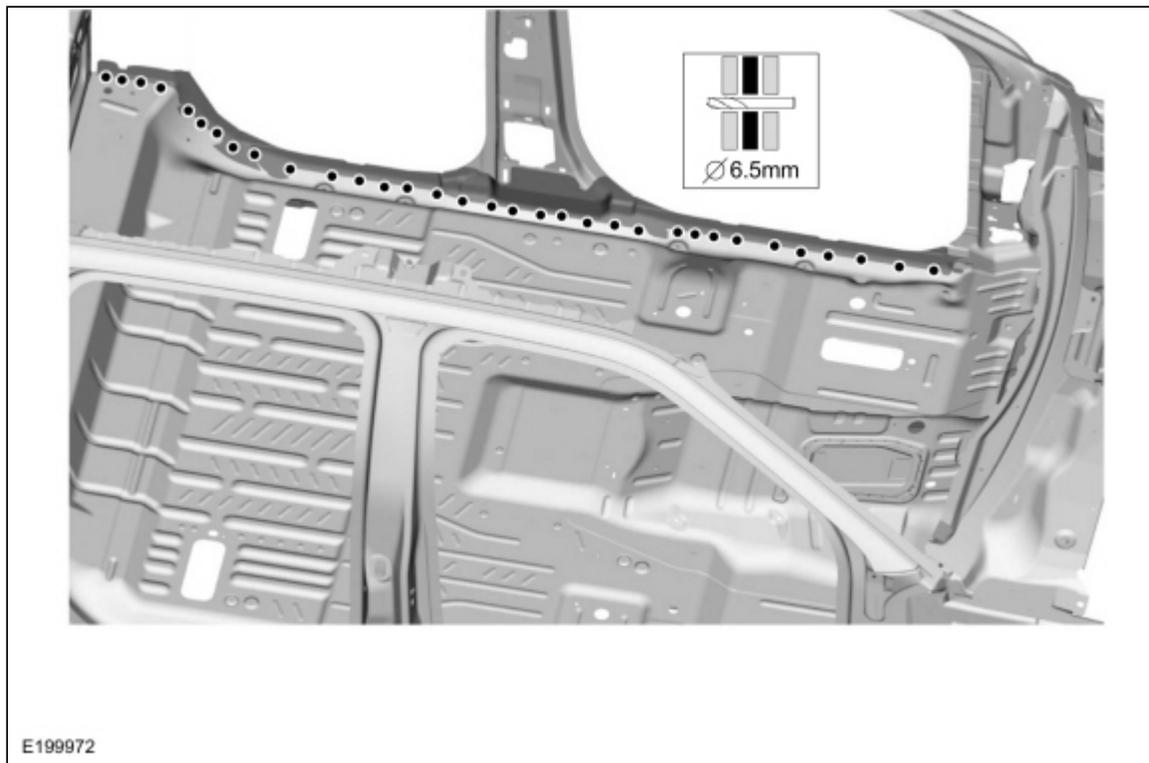
Refer to: [Joining Techniques](#) (501-25 Body Repairs - General Information, General Procedures).  
 Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer  
 Use the General Equipment: Blind Rivet Gun





- 9. Drill 6.5 mm holes for fasteners.  
Use the General Equipment: 6.5 mm Drill Bit





10. **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	-	-	-	-	W702512-S900C	-	-

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





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



12. Sand the forward rocker panel inner reinforcement mating surface using 80 grit sand paper to remove e-coat and clean.



- 13. Apply adhesive for the forward rocker panel inner reinforcement.  
*Material:* Metal Bonding Adhesive / TA-1, TA-1-B, 3M™ 08115, LORD Fusor® 108B



- 14. Install the forward rocker panel inner reinforcement and clamp in position.  
Use the General Equipment: Locking Pliers





- 15. Drill for fasteners.  
Use the General Equipment: 6.5 mm Drill Bit



- 16. **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®
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1	-	-	-	-	W708777-S900C	-	-
2	-	-	-	-	W702512-S900C	-	-

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



17. Sand the rear rocker panel inner reinforcement mating surface using 80 grit sand paper to remove e-coat.





18. Apply adhesive.

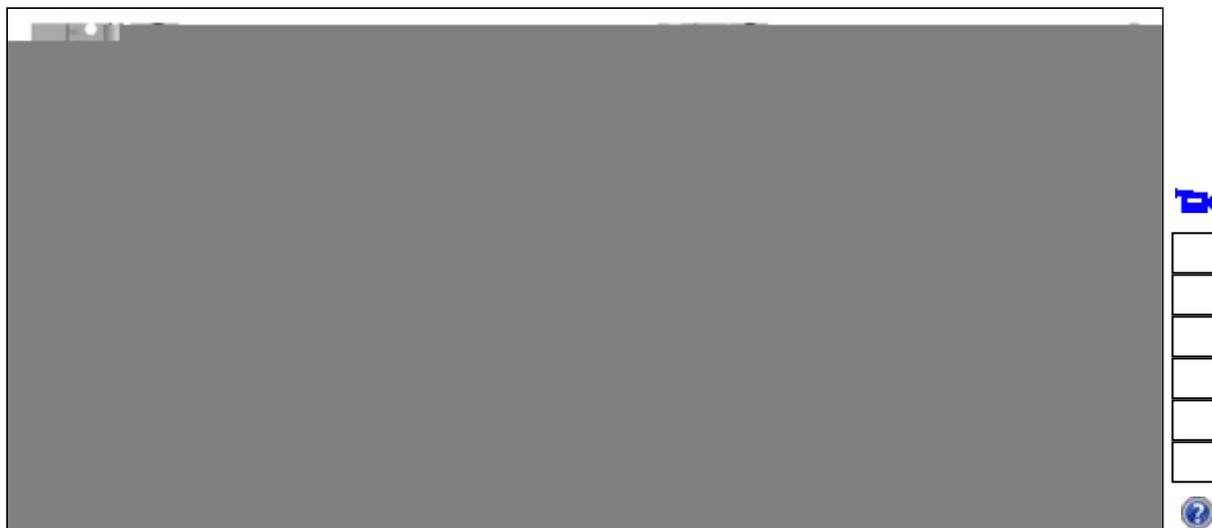
*Material:* Metal Bonding Adhesive / TA-1, TA-1-B, 3M™ 08115, LORD Fusor® 108B



- 19. Install the rear rocker panel inner reinforcement and clamp in position.  
Use the General Equipment: Locking Pliers



- 20. Drill 6.5 mm holes for fasteners.  
Use the General Equipment: 6.5 mm Drill Bit



21. **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	-	-	-	-	W708777-S900C	-	-
2	W710246-S900	BN	DP10-200H	SA-0400/SA-0402	W702512-S900C	-	-

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



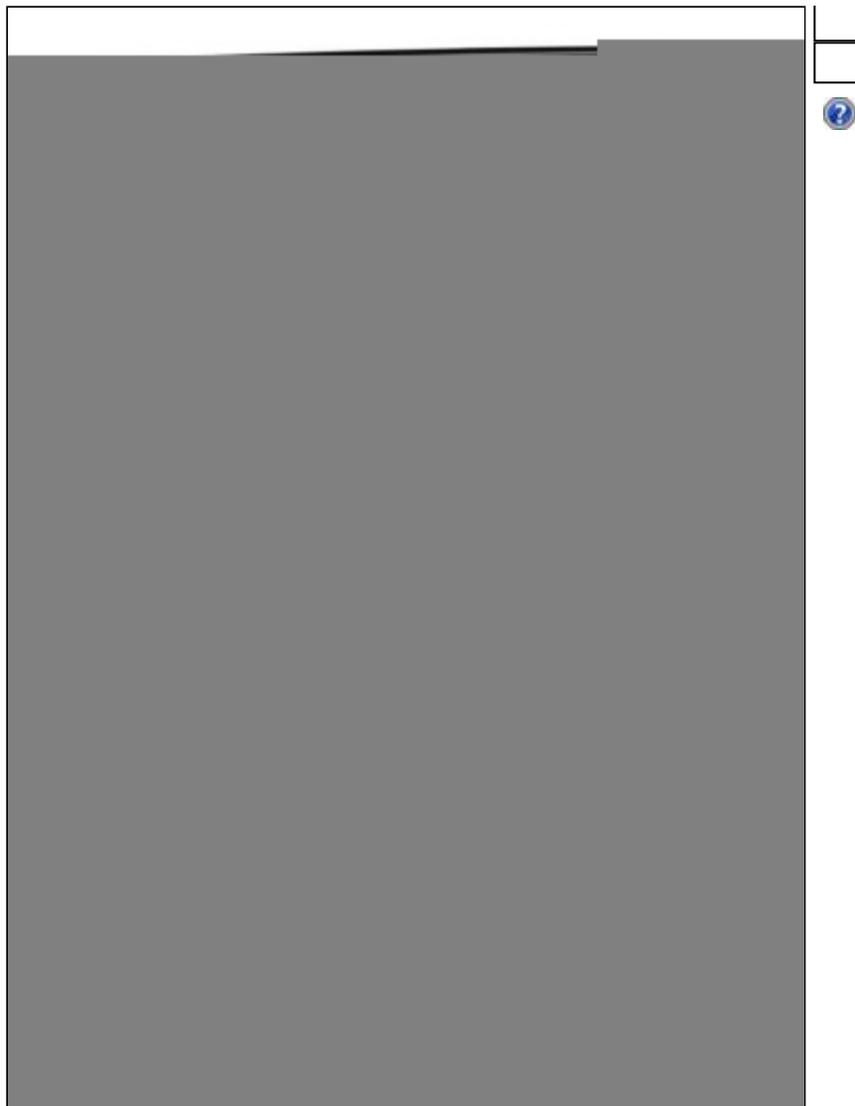
22. Install the B-pillar reinforcement and clamp in position.  
 Use the General Equipment: Locking Pliers





23. Drill for fasteners.  
Use the General Equipment: 6.5 mm Drill Bit





24. **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.

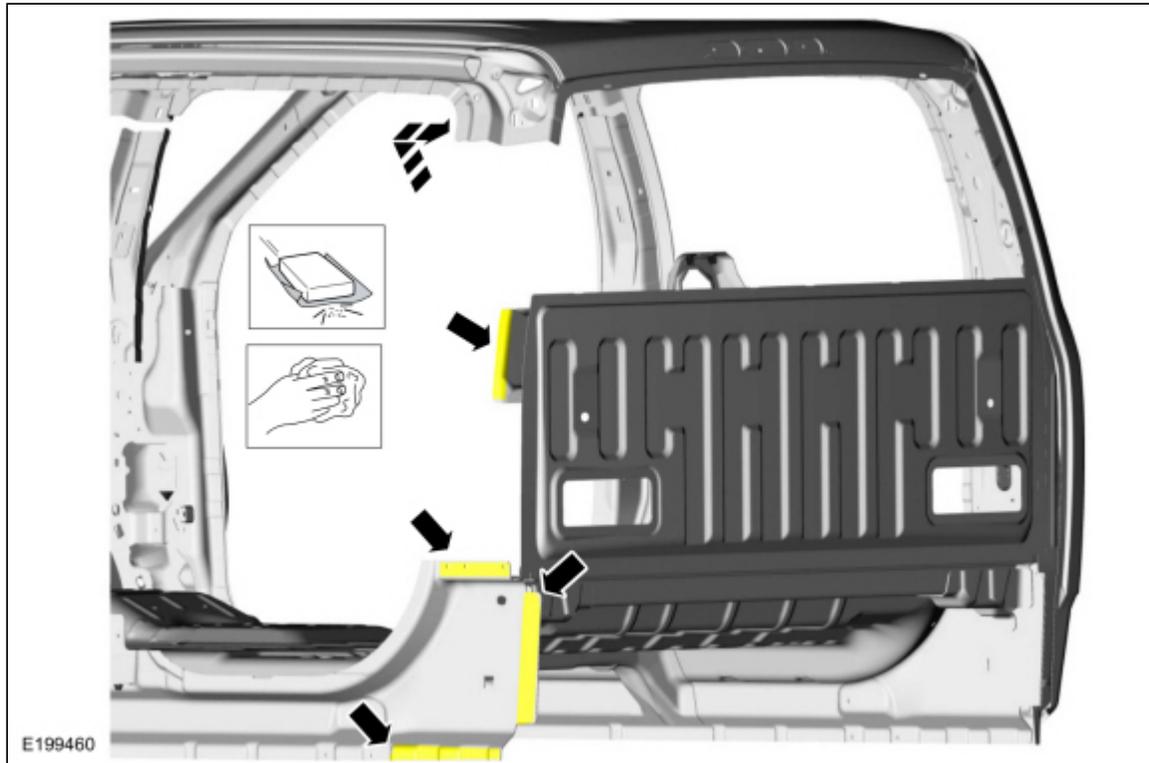
Item	SPR Number	SPR Code	Henrob® Car-O- Liner®, CMO®, Chief®, Spanesi® Wielande and Schill® Mandrel	Pro-Spot® Mandrel	Blind Rivet	Solid Rivet	Rivnut®
1	-	-	-	-	W708777-S900C	-	-

2	-	-	-	-	W702512-S900C	-	-
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Refer to: [Joining Techniques](#) (501-25 Body Repairs - General Information, General Procedures).  
Use the General Equipment: Blind Rivet Gun



25. Sand using 80 grit sand paper to remove old adhesive and e-coat and clean.



26. Sand using 80 grit sand paper to remove old adhesive and e-coat and clean.

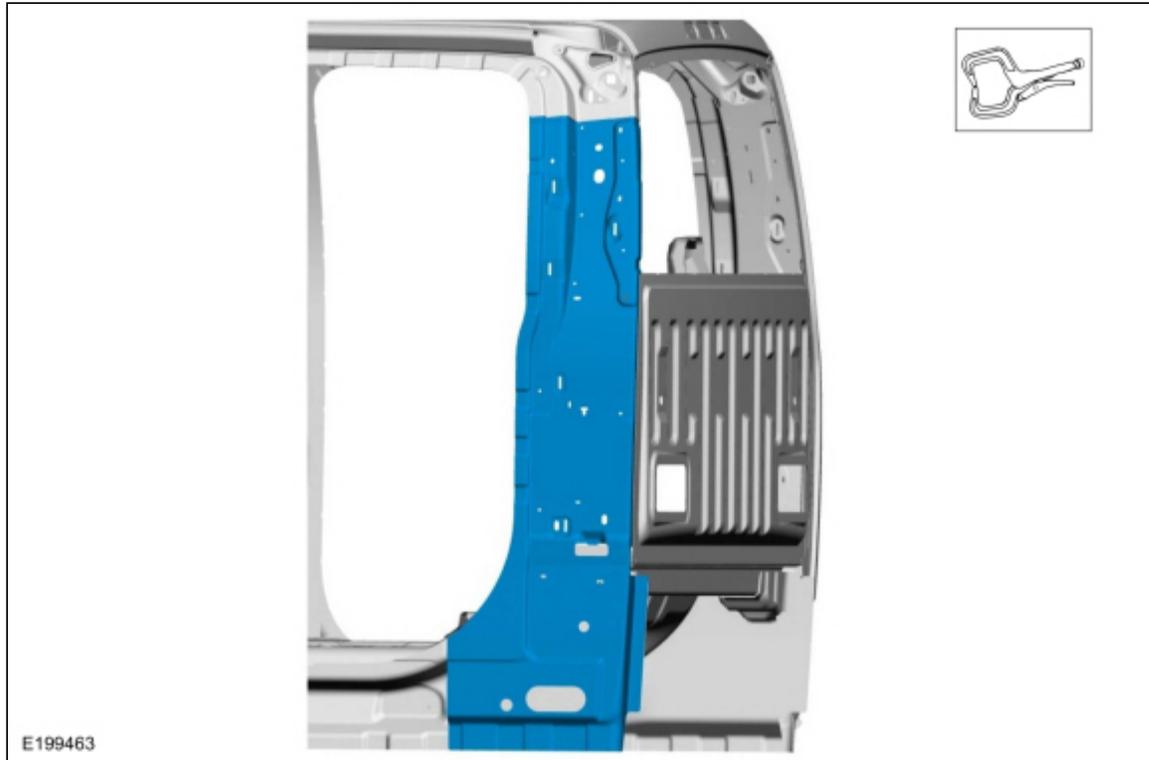


27. Apply adhesive.  
*Material:* Metal Bonding Adhesive / TA-1, TA-1-B, 3M™ 08115, LORD Fusor® 108B

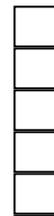




28. Install the C-pillar reinforcement and clamp in position.  
Use the General Equipment: Locking Pliers



29. Sand using 80 grit sand paper to remove old adhesive and e-coat and clean.



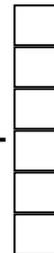


30. Sand using 80 grit sand paper to remove old adhesive and e-coat and clean.



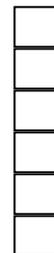
31. Apply adhesive.

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



32. Install the C-pillar gusset and clamp in position.

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





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






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

**In butt-weld areas:**

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).

- 35. Sand the body side mating surface using 80 grit sand paper to remove old adhesive and e-coat and clean.






- 36. Sand the service panel side mating surface using 80 grit sand paper to remove and e-coat and clean.







37. Install any NVH baffles noted during removal.

38. Apply adhesive.

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






39. Install the body side section and clamp in position.

Use the General Equipment: Locking Pliers






40. Complete joining of body side section to backing plates.

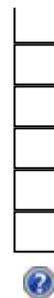
Refer to: [Joining Techniques](#) (501-25 Body Repairs - General Information, General Procedures).

41. Seam weld all sectioning joints using a MIG welder set up for aluminum repair.

Use the General Equipment: MIG/MAG Welding Equipment



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42. **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.

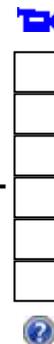
Item	SPR Number	SPR Code	Henrob® Car-O- Liner®, CMO®, Chief®, Spanesi® Wielande and Schill® Mandrel	Pro-Spot® Mandrel	Blind Rivet	Solid Rivet	Rivnut®
1	W708713-S900	AS	DZ09-025/H	SA-0400/SA-0401	-	W790376-S900	-
2	W717184-S900	QA	DP10-200/H	SA-0400/SA-0402	-	W790377-S900	-
3	W717186-S900	EN	DP11-200/H	SA-0400/SA-0402	-	W790377-S900	-
4	W708717-S900	AW	DP11-200/H	SA-0400/SA-0402	-	W790377-S900	-
5	W710246-S900	BN	DP10-200/H	SA-0400/SA-0402	-	W790377-S900	-
6	W708717-S900	AW	DG10-220/H	SA-0400/SA-0402	-	W790377-S900	-
7	W717186-S900	EN	DG11-220/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





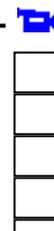
43. Drill for fasteners.  
Use the General Equipment: 6.5 mm Drill Bit



44. Install fasteners.

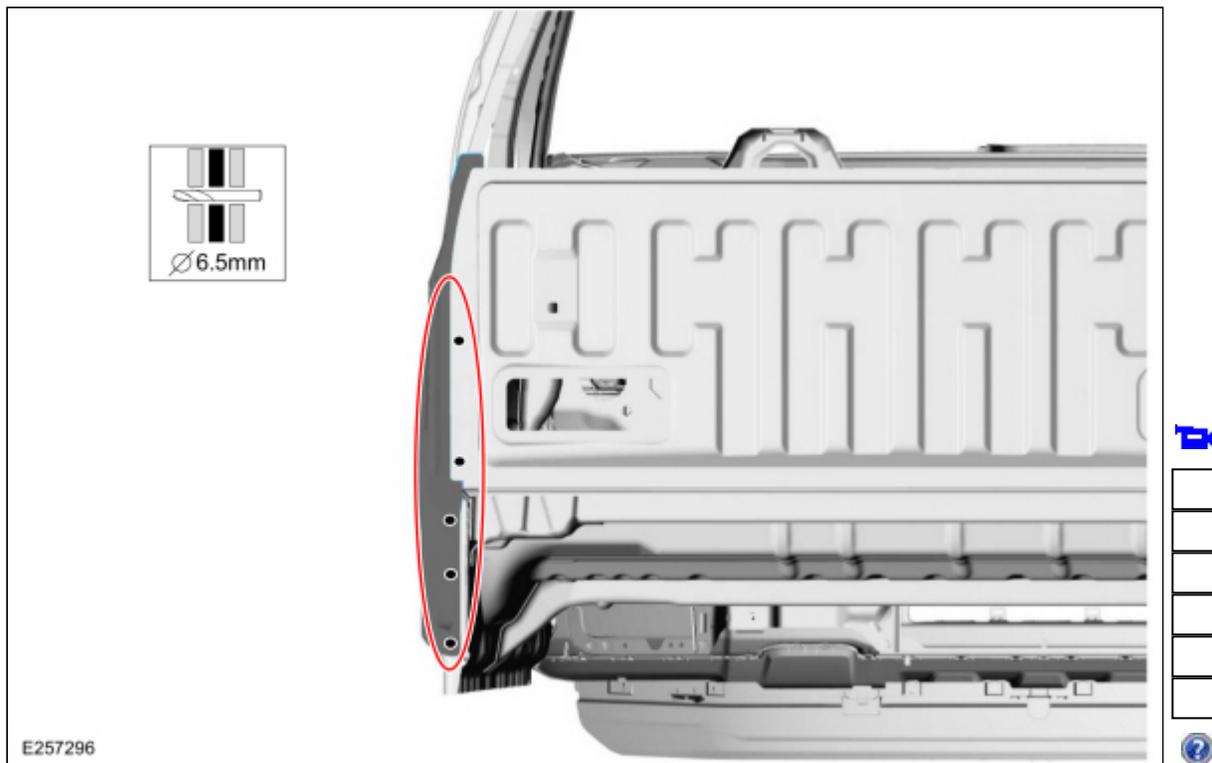
Item	SPR Number	SPR code	Henrob® Car-O- Liner®, CMO®, Chief®, Spanesi® Wielande and Schill® Mandrel	Pro-Spot® Mandrel	Blind Rivet	Solid Rivet	Rivnut®
1	-	-	-	-	W708777-S900C	-	-
2	-	-	-	-	W702554-S900C	-	-
3	-	-	-	-	W702512-S900C	-	-

Use the General Equipment: Blind Rivet Gun





45. Drill for fasteners.  
Use the General Equipment: 6.5 mm Drill Bit



46. **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.

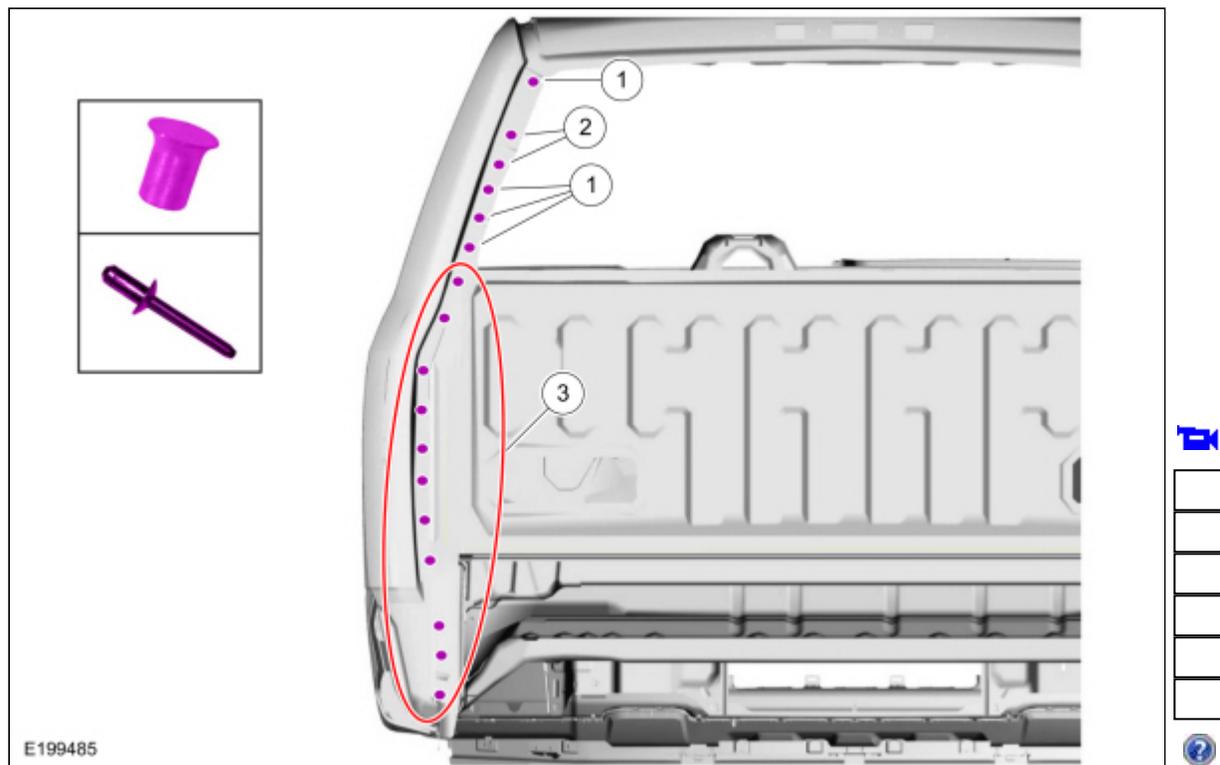
Item	SPR Number	SPR Code	Henrob® Car-O- Liner®, CMO®, Chief®, Spanesi® Wielande and Schill® Mandrel	Pro-Spot® Mandrel	Blind Rivet	Solid Rivet	Rivnut®
1	W708713-S900	AS	DZ09-025/H	SA-0400/SA-0402	-	W790377-S900	-
2	W710246-S900	BN	DP10-200/H	SA-0400/SA-0402	-	-	-

3	-	-	-	-	W708777-S900C	-	-
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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



47. Apply additional NVH foam to baffles to assure complete sealing.

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

48. Metal finish using typical aluminum repair techniques and a fiber-based body filler.

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

49. Prime the rear window glass opening channel using a Ford approved epoxy based primer.





50. Mask the rear window glass opening channel.



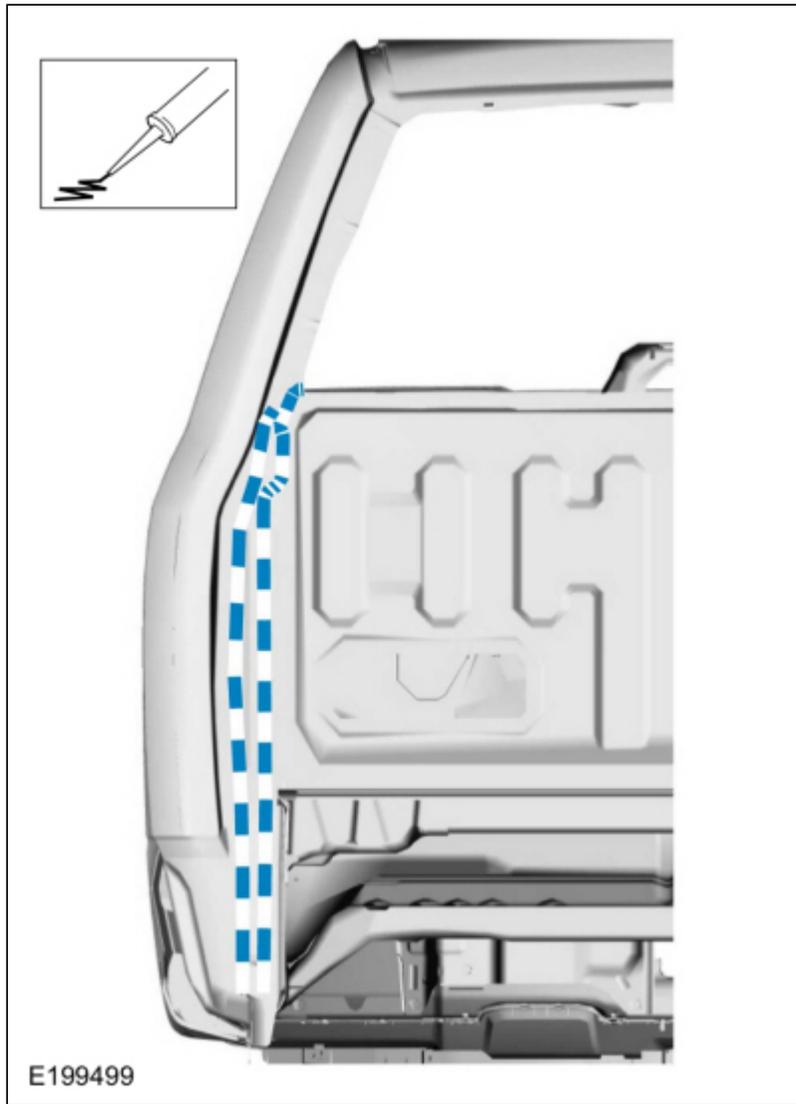


**51. Seam Sealing:**

All seams must be sealed to production level.

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





**52. Seam Sealing:**

All seams must be sealed to production level.

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



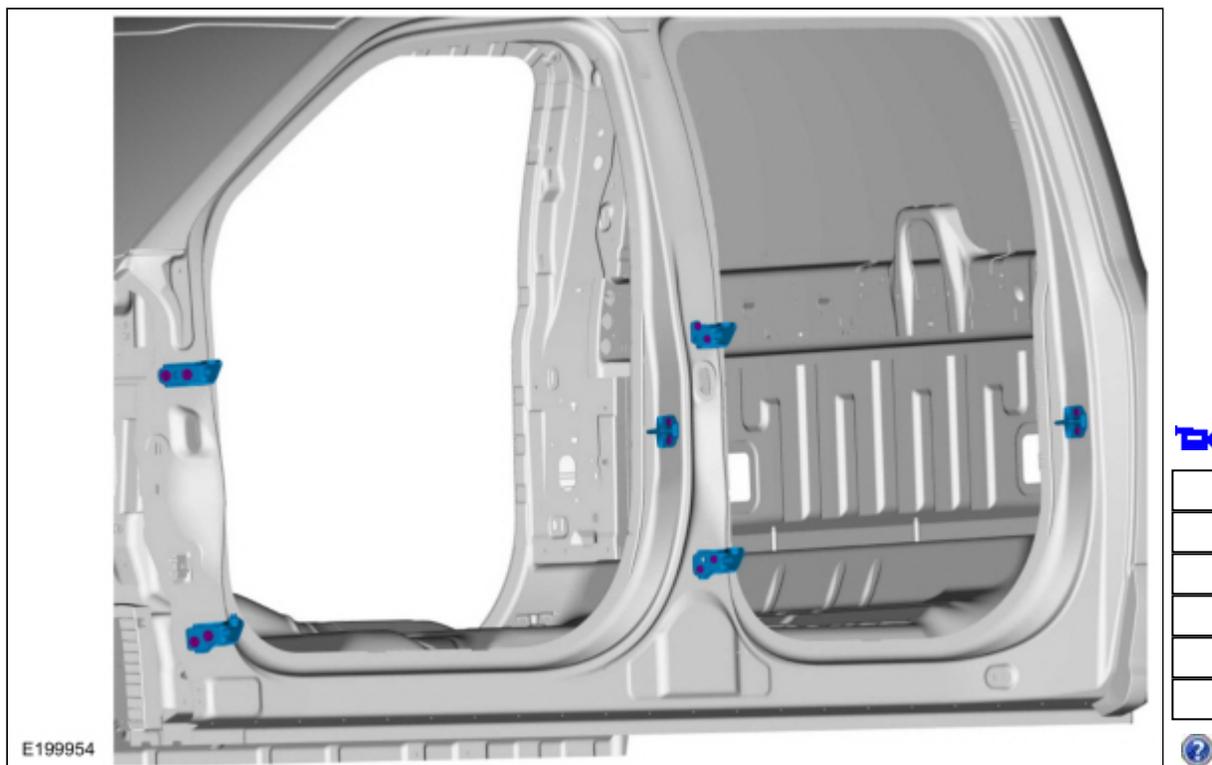


53. Refinish using a Ford approved paint system and typical refinishing techniques.

54. Unmask the rear window glass opening channel.



55. Install the rear window glass.  
Refer to: [Fixed Glass](#) (501-11 Glass, Frames and Mechanisms, General Procedures).
56. Install the side curtain air bag.  
Refer to: [Side Curtain Airbag - SuperCrew](#) (501-20B Supplemental Restraint System, Removal and Installation).
57.  
Install the front and rear door hinges and strikers.
- Front door hinges.  
*Torque: 21 lb.ft (28 Nm)*
  - Rear door hinges.  
*Torque: 22 lb.ft (30 Nm)*
  - Door strikers.  
*Torque: 18 lb.ft (25 Nm)*



58. Install the roof and body side 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).
59. Install 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).

60. Install the front fender.  
Refer to: [Fender](#) (501-02 Front End Body Panels, Removal and Installation).
61. Align the front and rear 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).
62. Repower the SRS.  
Refer to: [Supplemental Restraint System \(SRS\) Repowering](#) (501-20B Supplemental Restraint System, General Procedures).

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