

501-28 Roof Sheet Metal Repairs
Removal and Installation

2021 F-150

Procedure revision date: 10/8/2020

Roof Front Frame


Special Tool(s) / General Equipment

6.5 mm Drill Bit
Self-Piercing Rivet (SPR) Remover/Installer
Belt Sander
Blind Rivet Gun
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.

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.

-  **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).

All vehicles

2. Remove the roof outer panel.

Refer to: [Roof Panel - Regular Cab](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

Refer to: [Roof Panel - SuperCab](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

Refer to: [Roof Panel - SuperCrew](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

Refer to: [Roof Panel - Regular Cab](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

Refer to: [Roof Panel - SuperCrew, Vehicles With: Roof Opening Panel](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

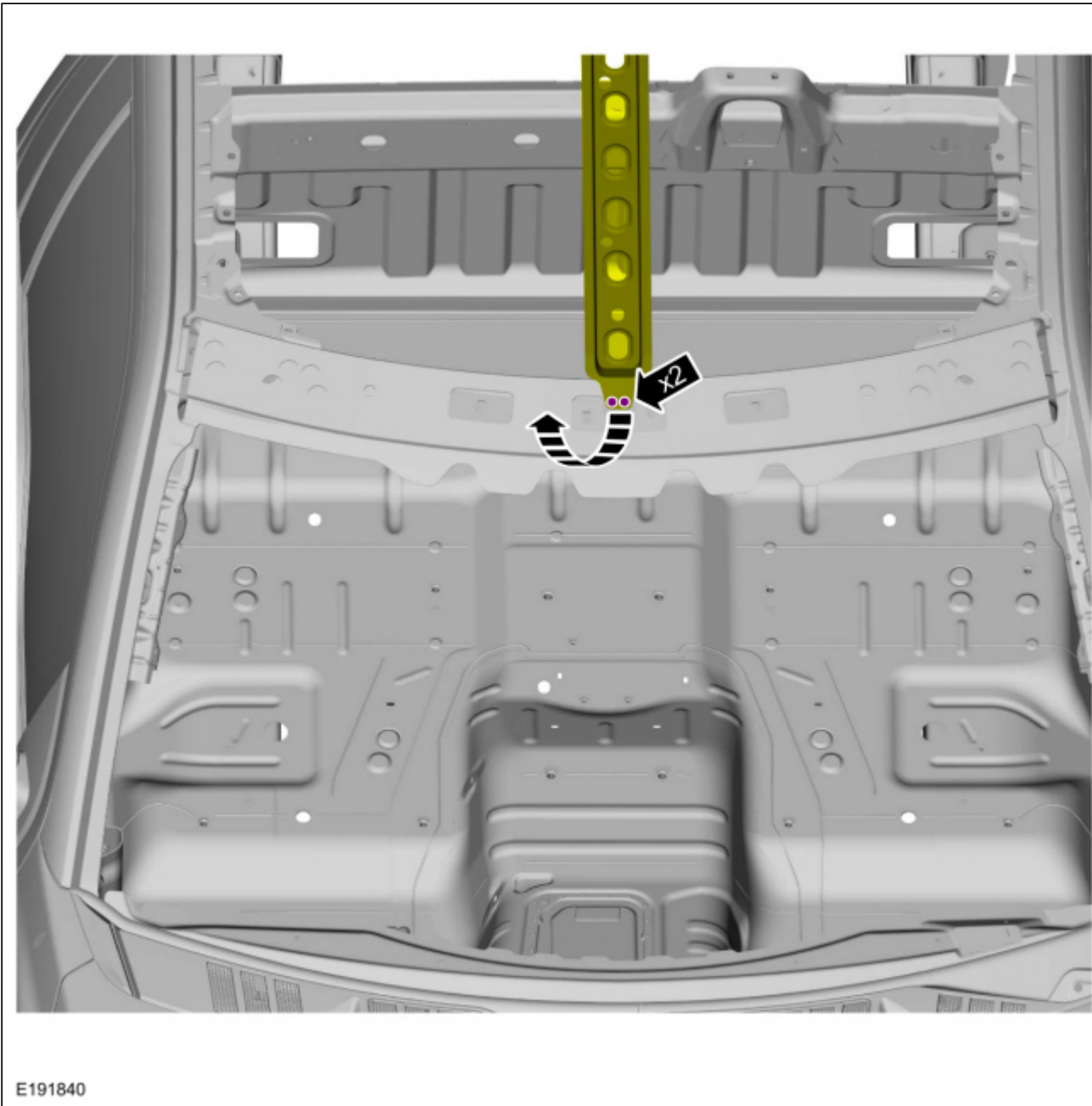
Regular Cab

3. Remove the center reinforcement SPR fasteners and position aside.

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

Use the General Equipment: Belt Sander

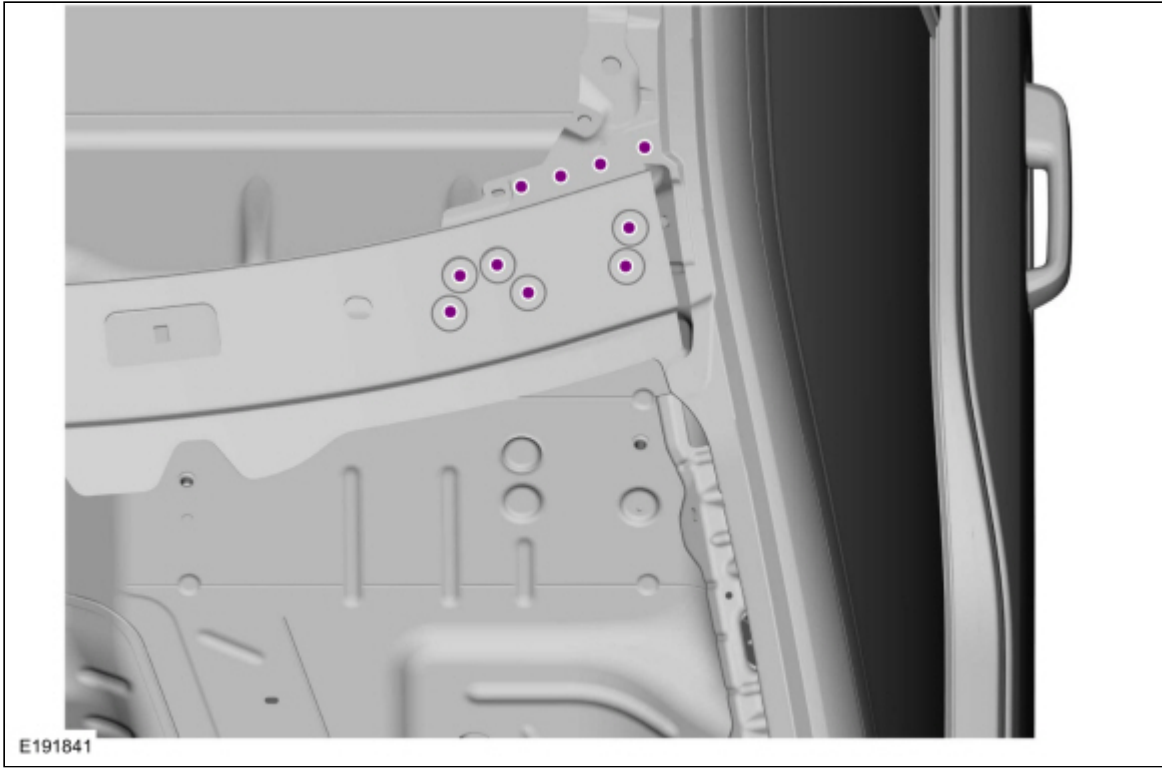




All vehicles

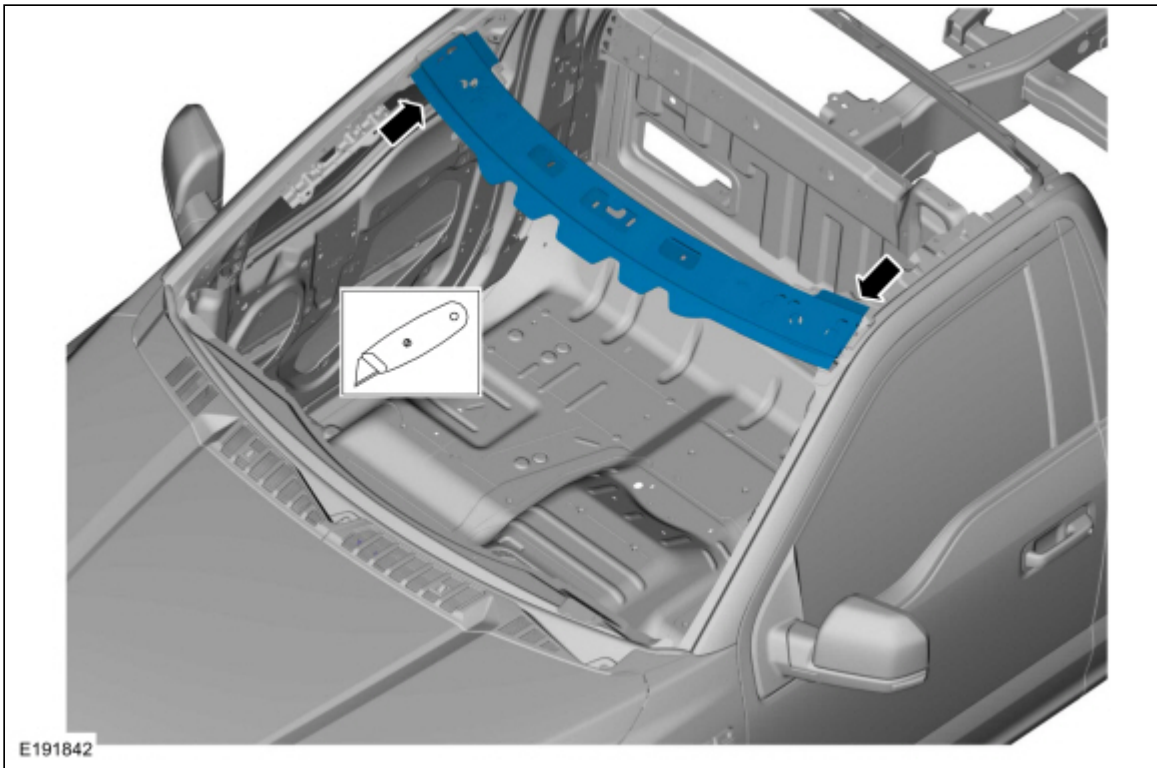
4. Remove the SPR fasteners (both sides).
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer

Use the General Equipment: Belt Sander



5. Break the adhesive bond and remove the roof front frame.

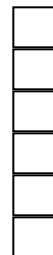




Installation

All vehicles

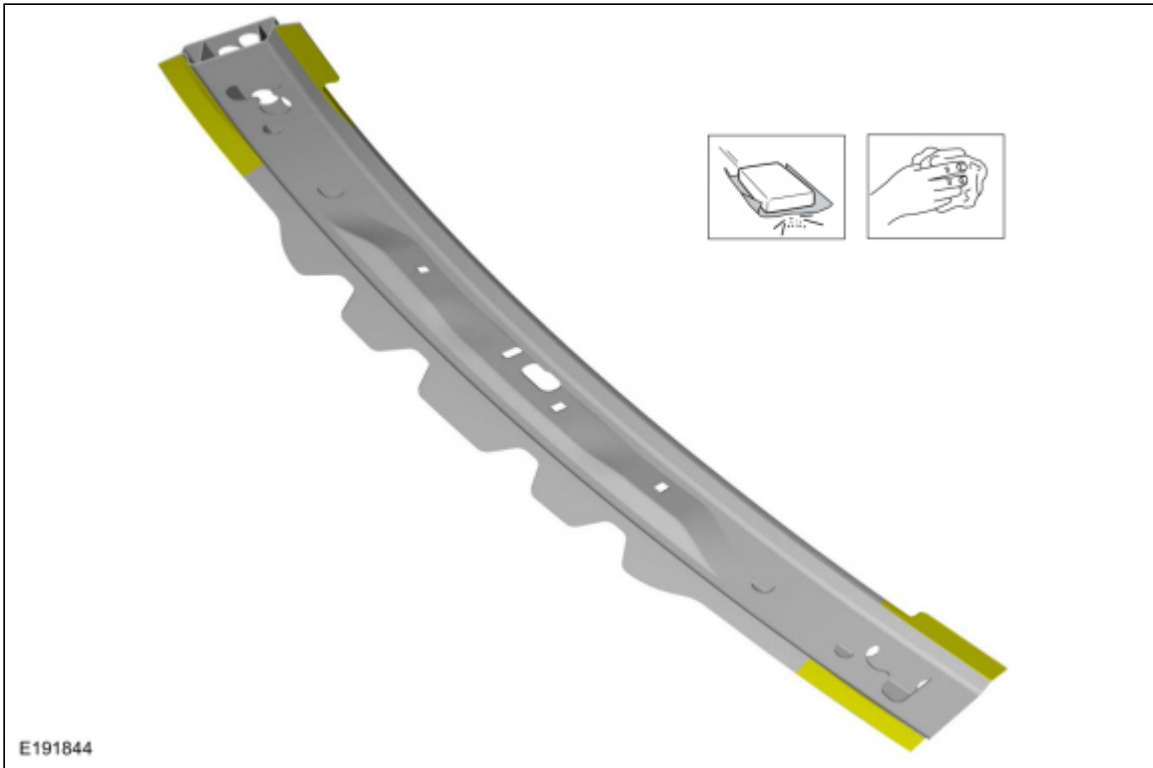
1. Sand using 80 grit sandpaper to remove all remaining adhesive and clean.





2. Sand the roof front frame using 80 grit sandpaper to remove e-coat and clean.

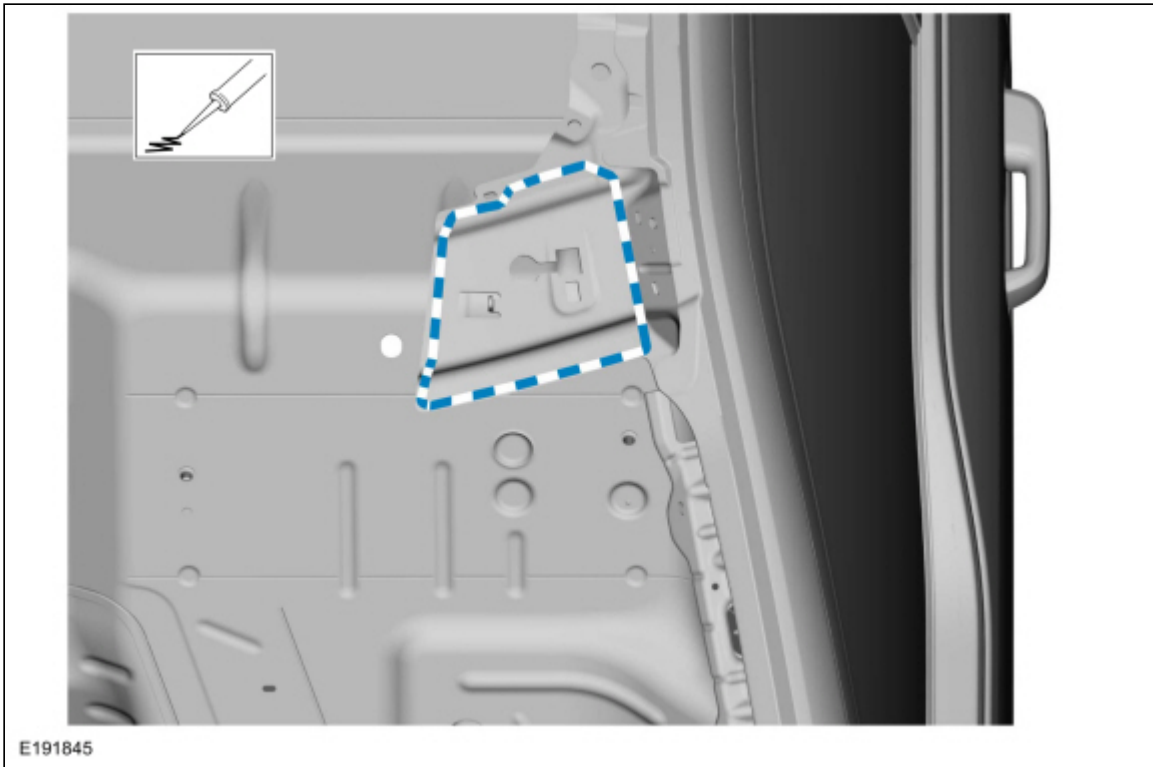




3. Apply adhesive (each side).

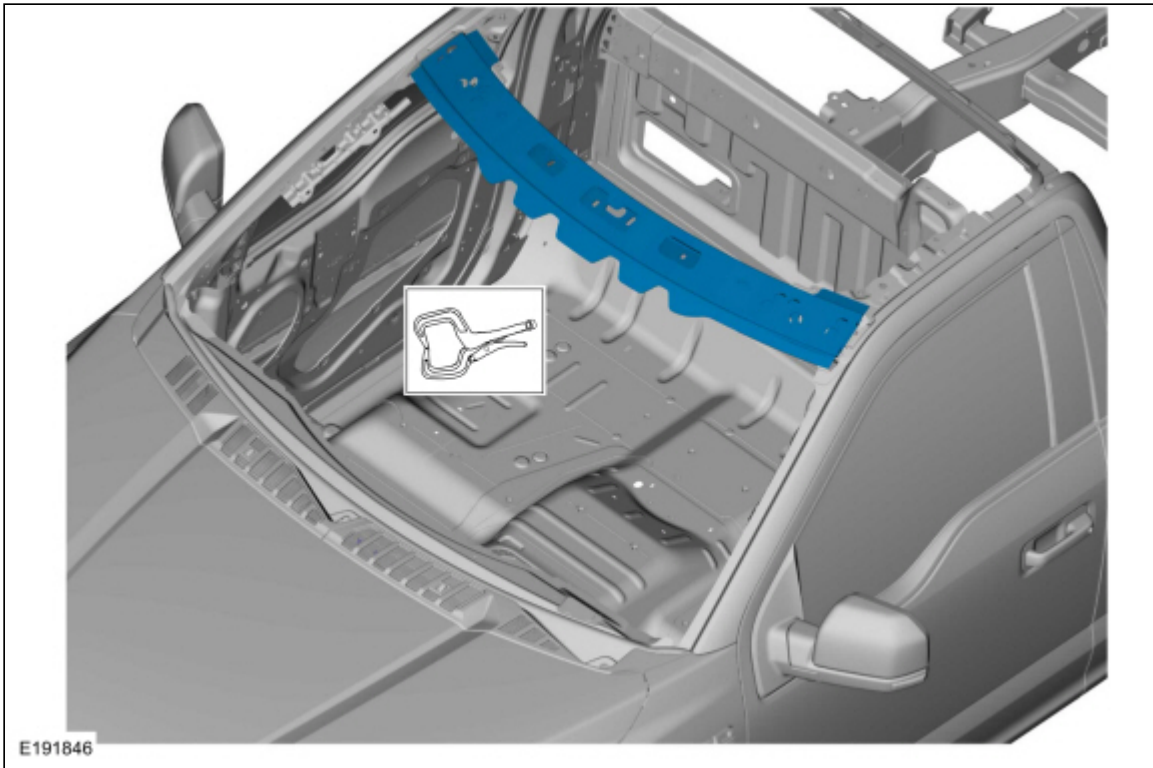
Material: Metal Bonding Adhesive / TA-1, TA-1-B, 3M™ 08115, LORD Fusor® 108B





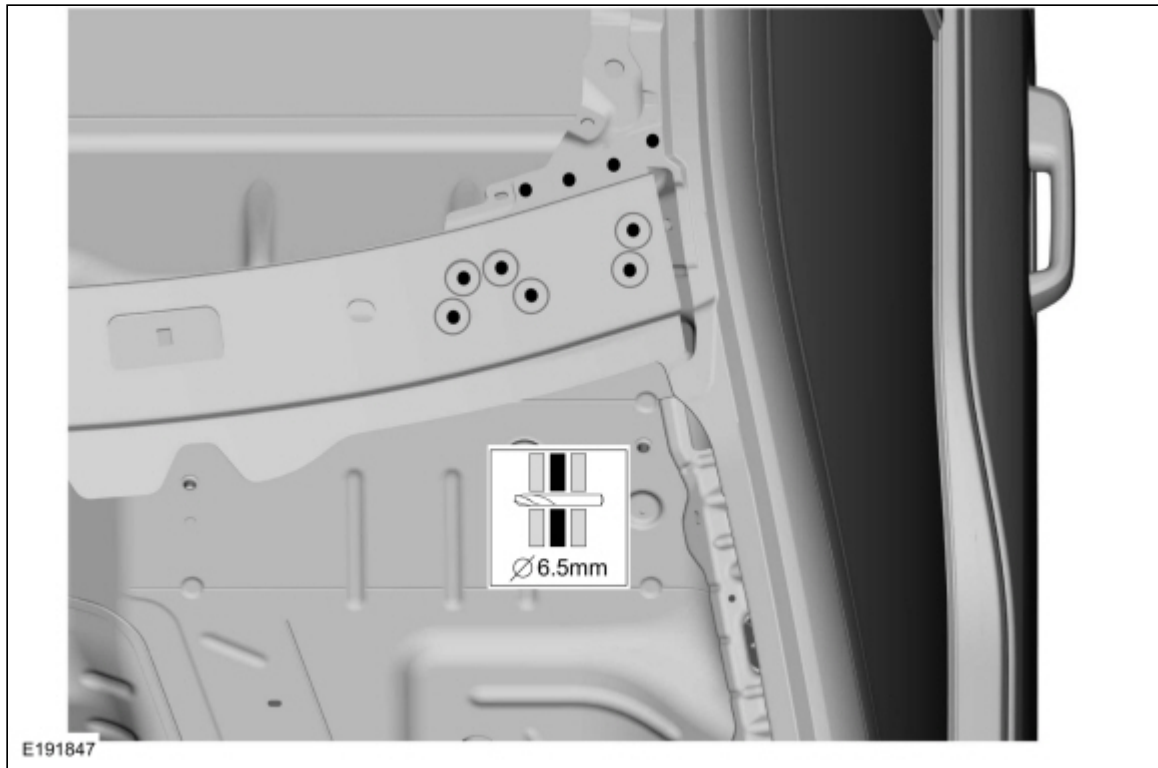
- 4. Install and clamp the roof front frame.
Use the General Equipment: Locking Pliers





- 5. Drill blind fastener holes as indicated (both sides).
Use the General Equipment: 6.5 mm Drill Bit





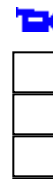
6. **NOTE:** SPR fasteners may not be placed directly over original SPR location. They must be placed adjacent to original location matching original quantity.

NOTE: Solid or blind rivets may be used in place of SPR fasteners in the original SPR location after enlarging hole to 6.5 mm.

Install fasteners (both sides).

Item	<u>SPR</u> Number	<u>SPR</u> Code	Henrob® Mandrel	Pro-Spot® Mandrel	Blind Rivet	Solid Rivet	Rivnut®
1	W710246-S900	BN	DP10-200/H	SA-0400/SA-0402	-	W790377-S900	-
2	-	-	-	-	W708777-S900C	-	-

Use the General Equipment: Blind Rivet Gun





Regular Cab

7. **NOTE:** Blind rivets may be used in place of SPR fasteners in the original SPR location after enlarging hole to 6.5 mm.

Reposition the center reinforcement and install fasteners.

Item	SPR Number	SPR Code	Henrob® 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: Self-Piercing Rivet (SPR) Remover/Installer
 Use the General Equipment: Blind Rivet Gun





All vehicles

8. Install the roof outer panel.
Refer to: [Roof Panel - Regular Cab](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

Refer to: [Roof Panel - SuperCab](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

Refer to: [Roof Panel - SuperCrew](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

Refer to: [Roof Panel - Regular Cab](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

Refer to: [Roof Panel - SuperCrew, Vehicles With: Roof Opening Panel](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

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