

501-28 Roof Sheet Metal Repairs  
Removal and Installation

2021 F-150

Procedure revision date: 10/8/2020

## Roof Rear 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

**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.

### All vehicles

 **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).

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 - SuperCrew](#) (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).

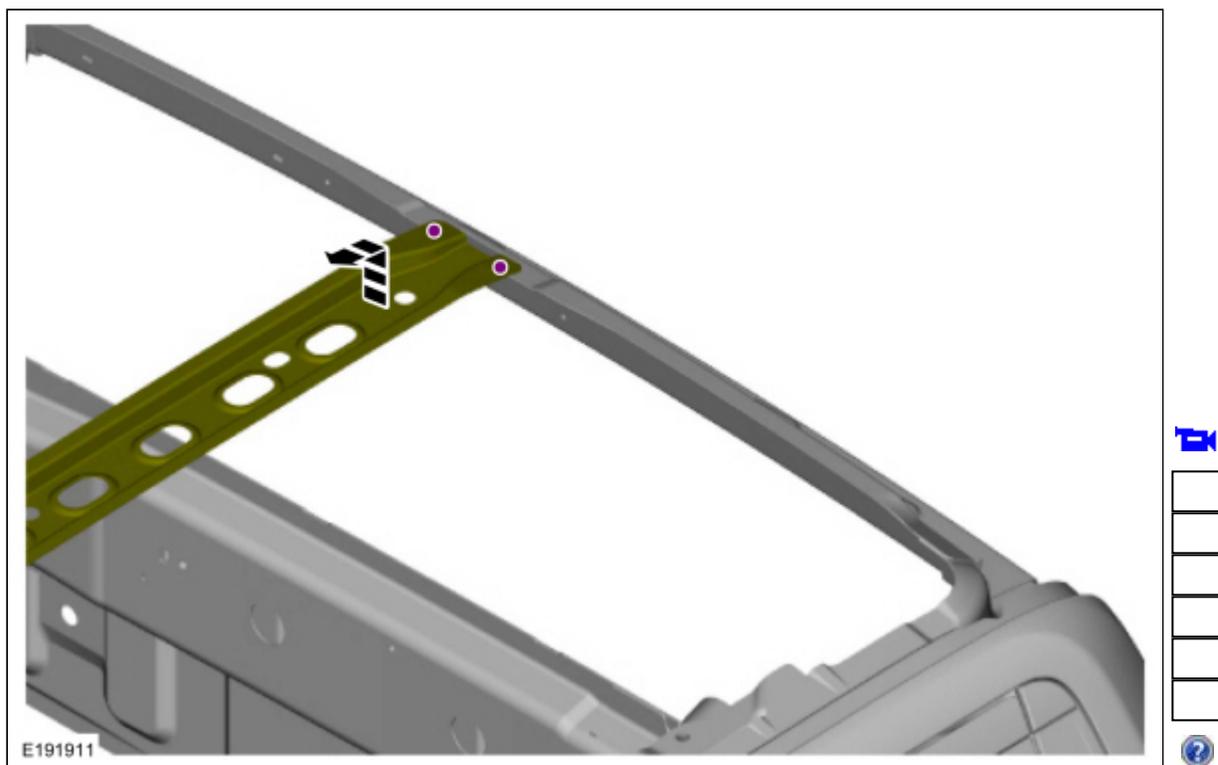
### Regular Cab/SuperCrew

3. **NOTE:** *Without roof opening panel.*

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



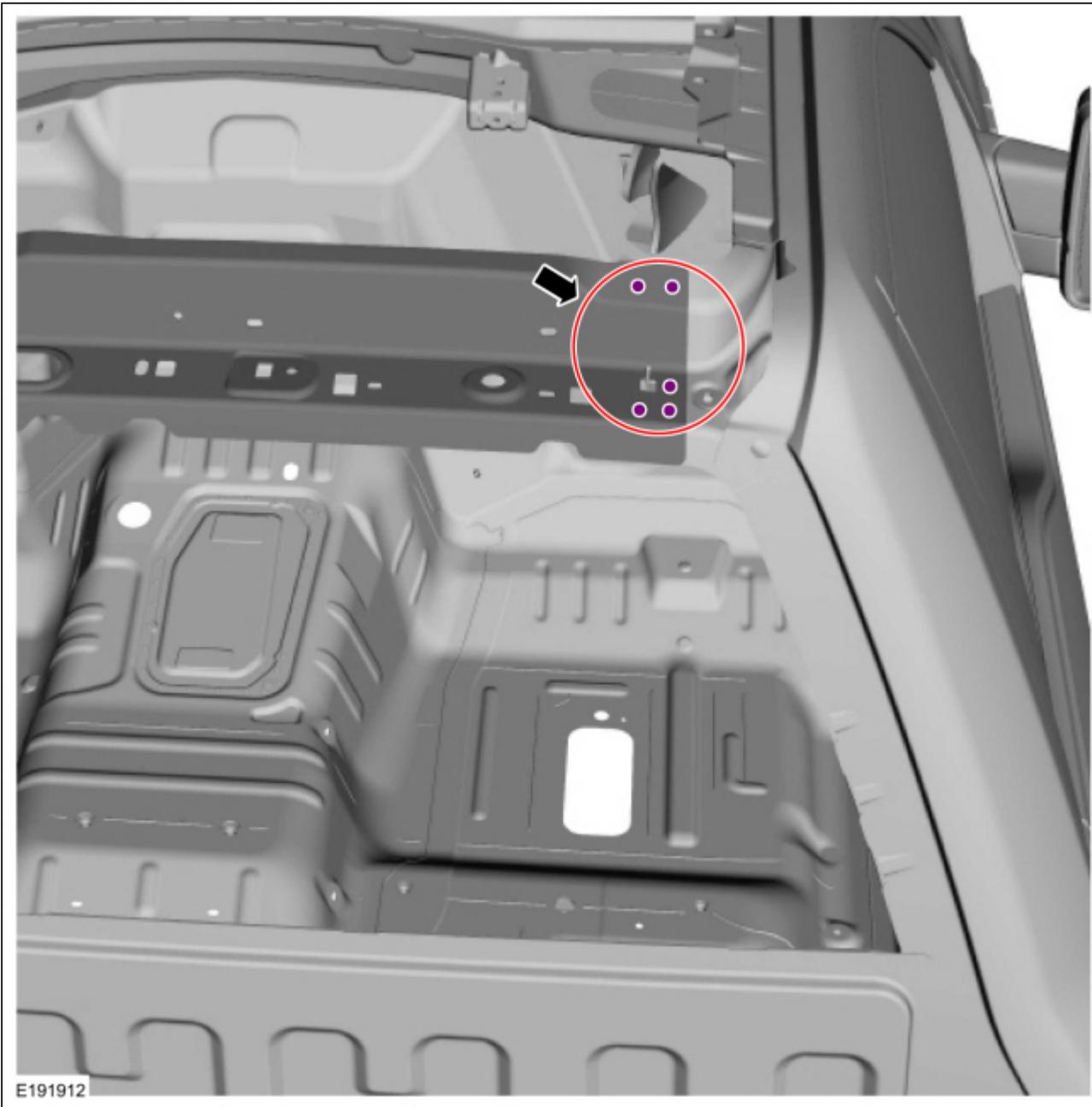
### All vehicles

4. On both sides.

Remove the SPR fasteners.

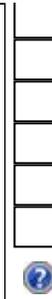
Use the General Equipment: Self-Piercing Rivet (SPR) Remover/Installer

Use the General Equipment: Belt Sander



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



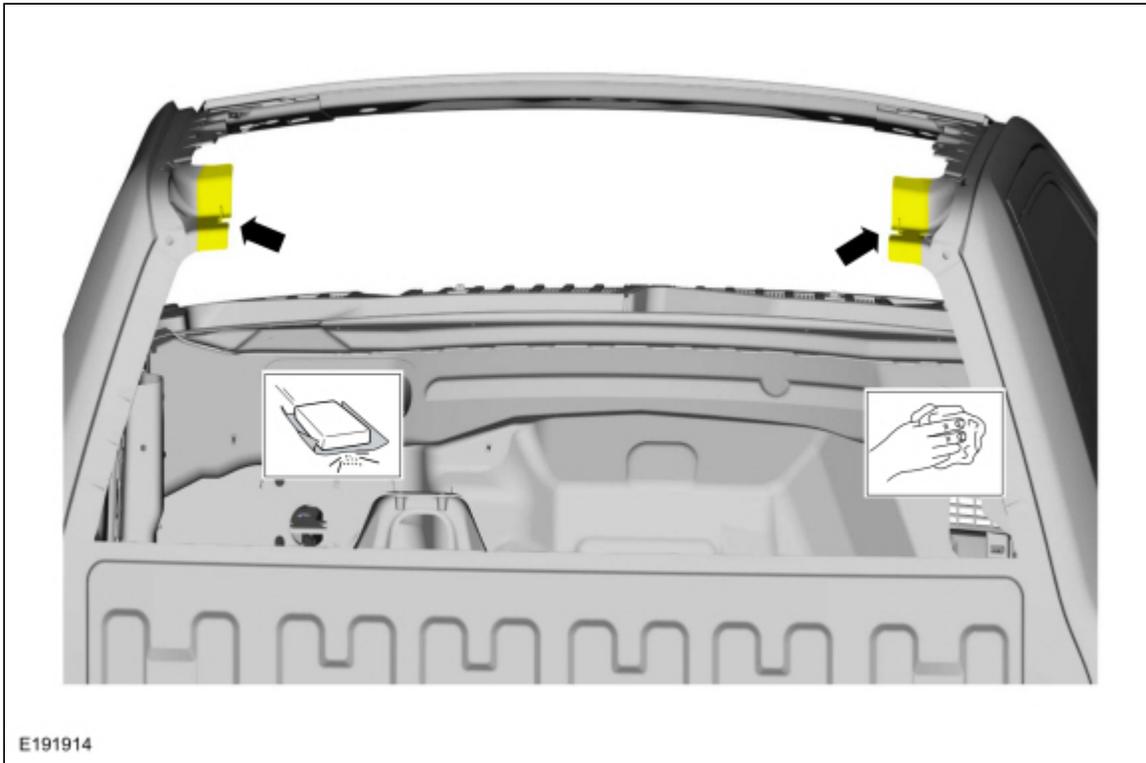


**Installation**

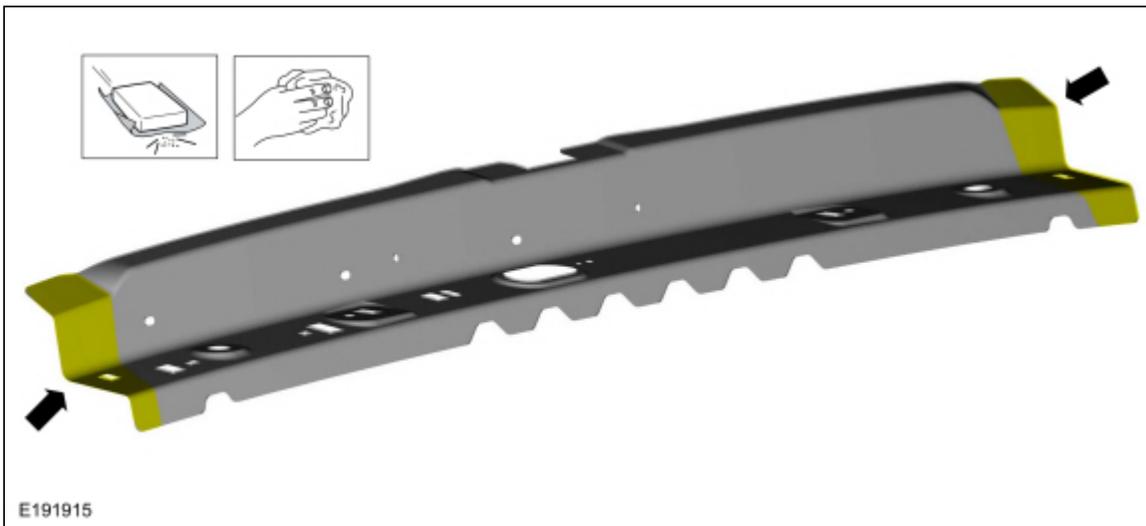
**All vehicles**

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



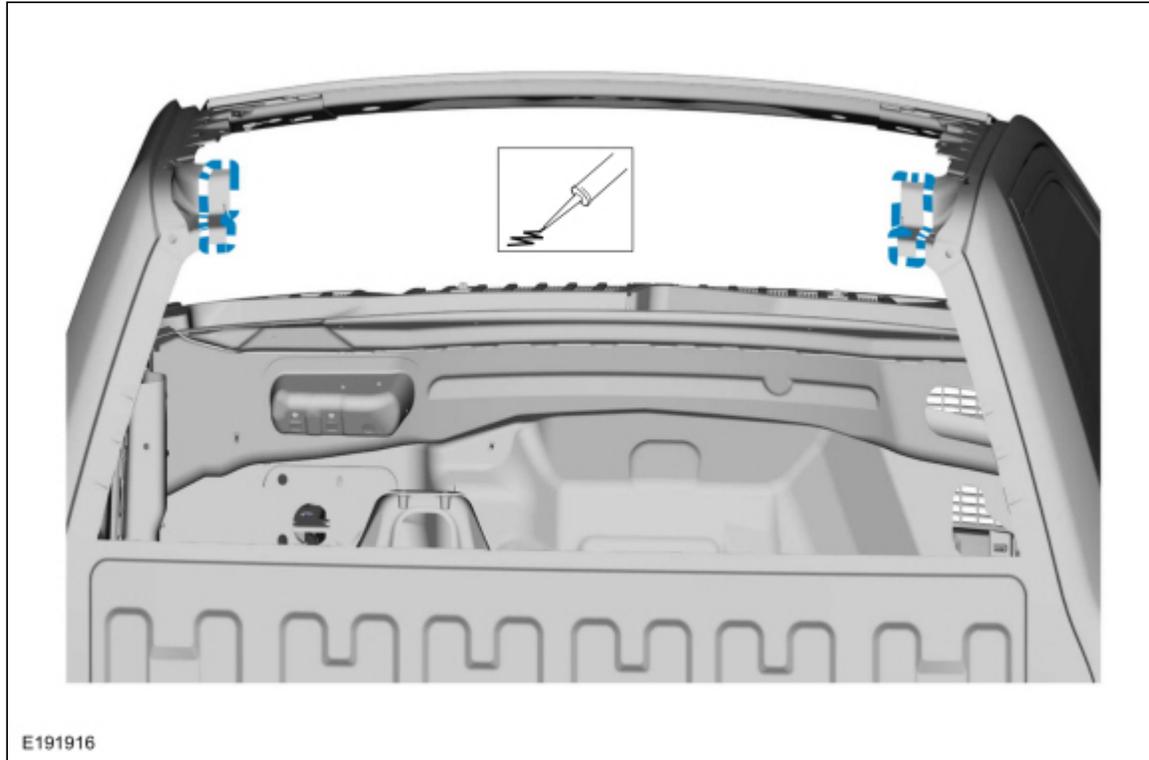


2. Sand the roof rear frame using 80 grit sandpaper to remove e-coat and clean.



3. Apply adhesive.

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



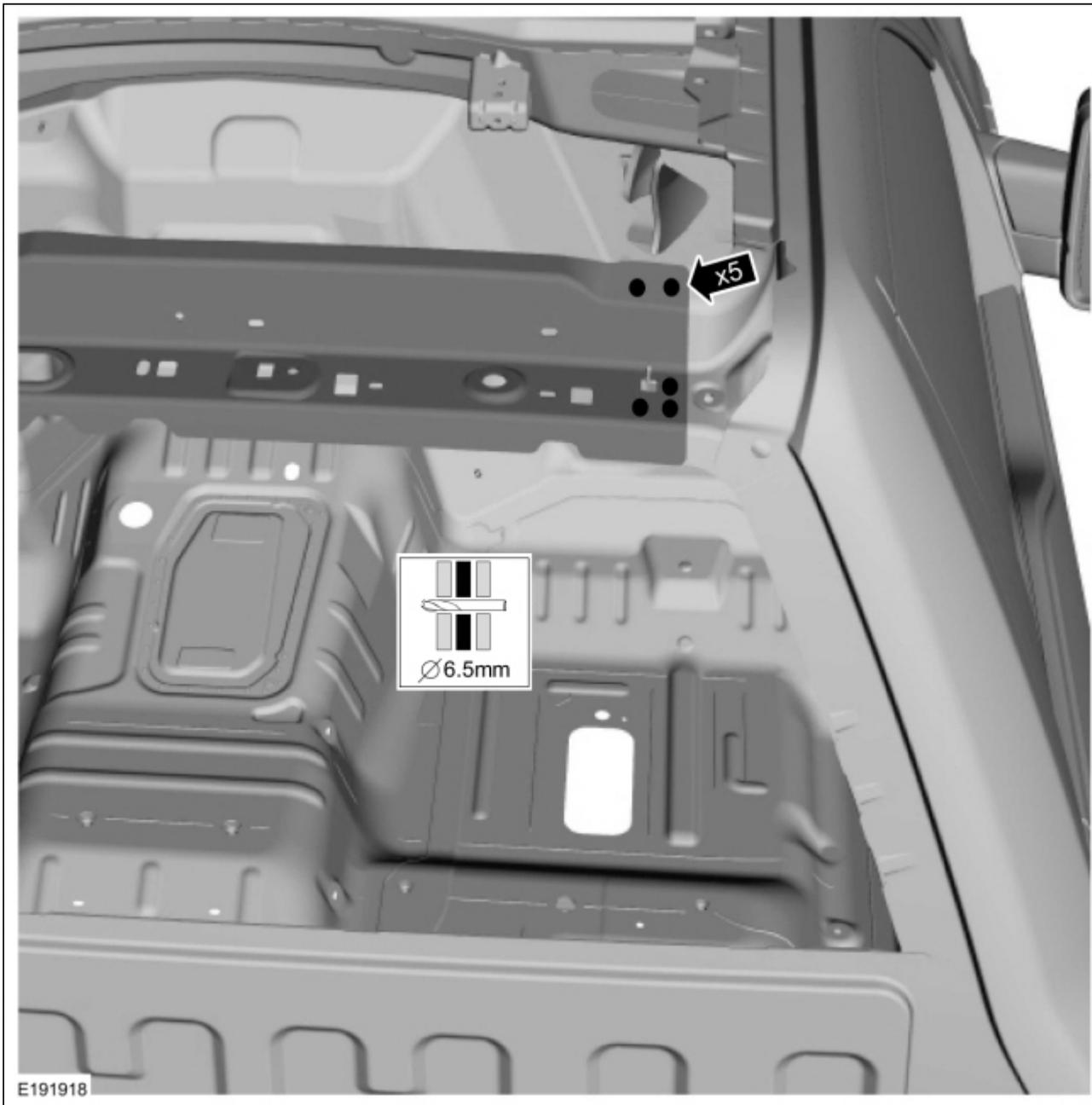
4. Install the rear roof frame and clamp in position.  
Use the General Equipment: Locking Pliers





- 5. On both sides.  
Drill blind fastener holes as indicated  
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.

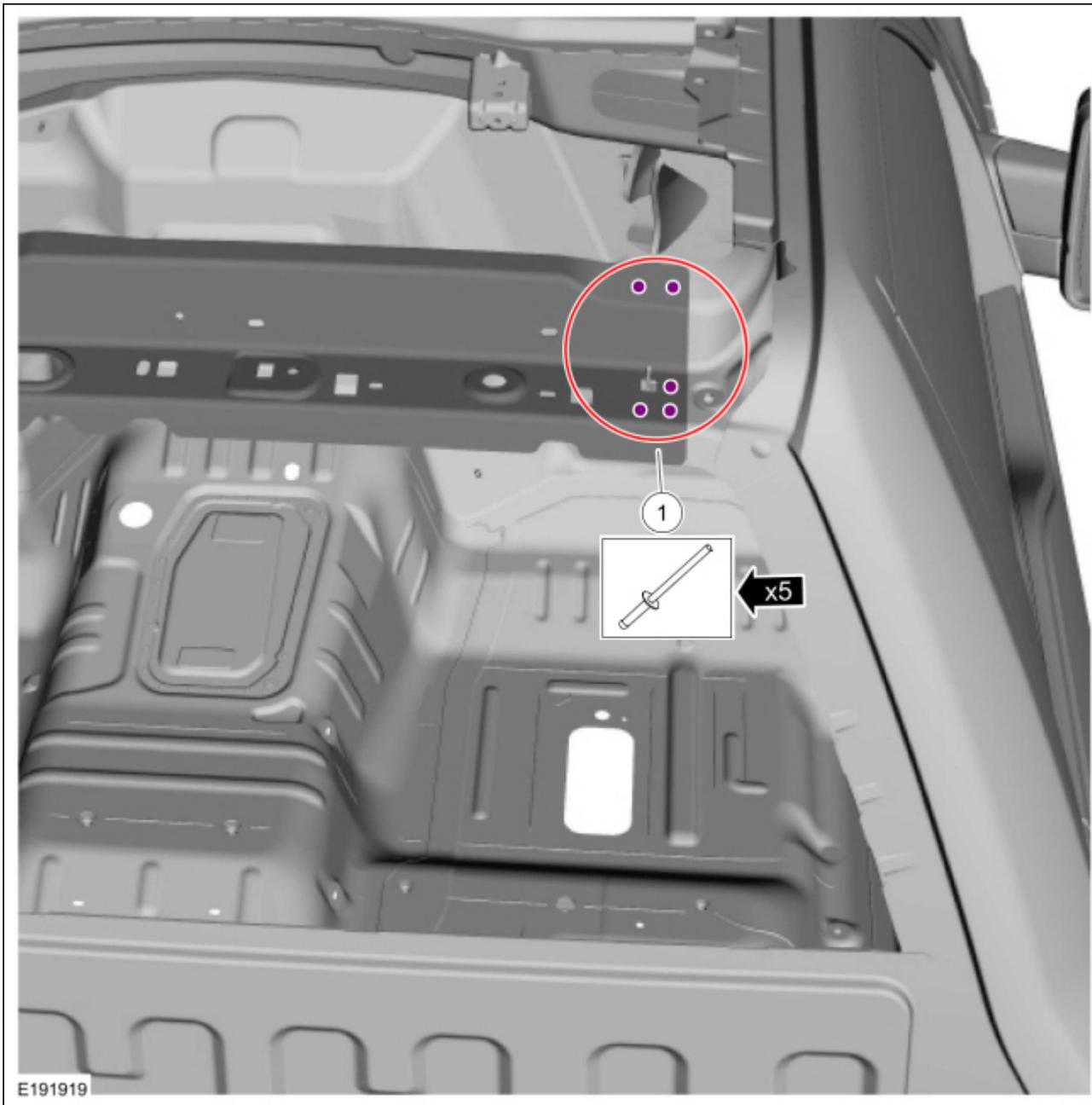
**NOTE:** Blind or solid rivets may be used in place of SPR in the original SPR location after enlarging hole to 6.5 mm.

On both sides.  
Install fasteners

Item	SPR Number	SPR Code	Henrob® Mandrel	Pro-Spot® Mandrel	Blind Rivet	Solid Rivet	Rivnut®
1	-	-	-	-	W707638-S900C	-	-

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





### Regular Cab/SuperCrew

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

**NOTE:** Without roof opening panel.

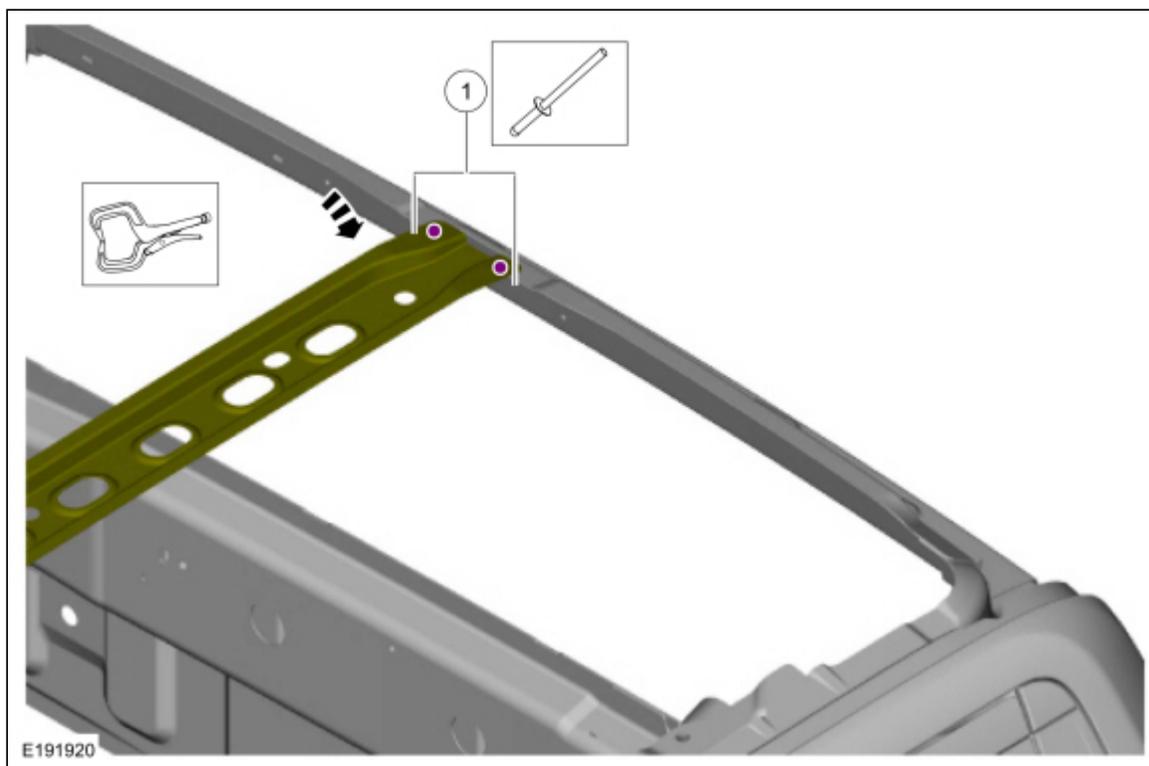
Reposition the center roof panel reinforcement clamp and install fasteners.

Item	SPR Number	SPR Code	Henrob®, Car-OLiner®, CMO®, Chief®, Spanesi®, Wielander 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: Locking Pliers

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

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