

Roof Panel**Special Tool(s) / General Equipment**

6.5 mm Drill Bit
Grinder
Self-Piercing Rivet (SPR) Remover/Installer
Belt Sander
Knife
Locking Pliers

Materials

Name	Specification
Metal Bonding Adhesive TA-1, TA-1-B, 3M™ 08115, LORD Fusor® 108B	-
Roof Ditch Sealer 3M™ 08307, LORD Fusor® 129	-
Flexible Foam Repair 3M™ 08463, LORD Fusor® 121	-

Removal

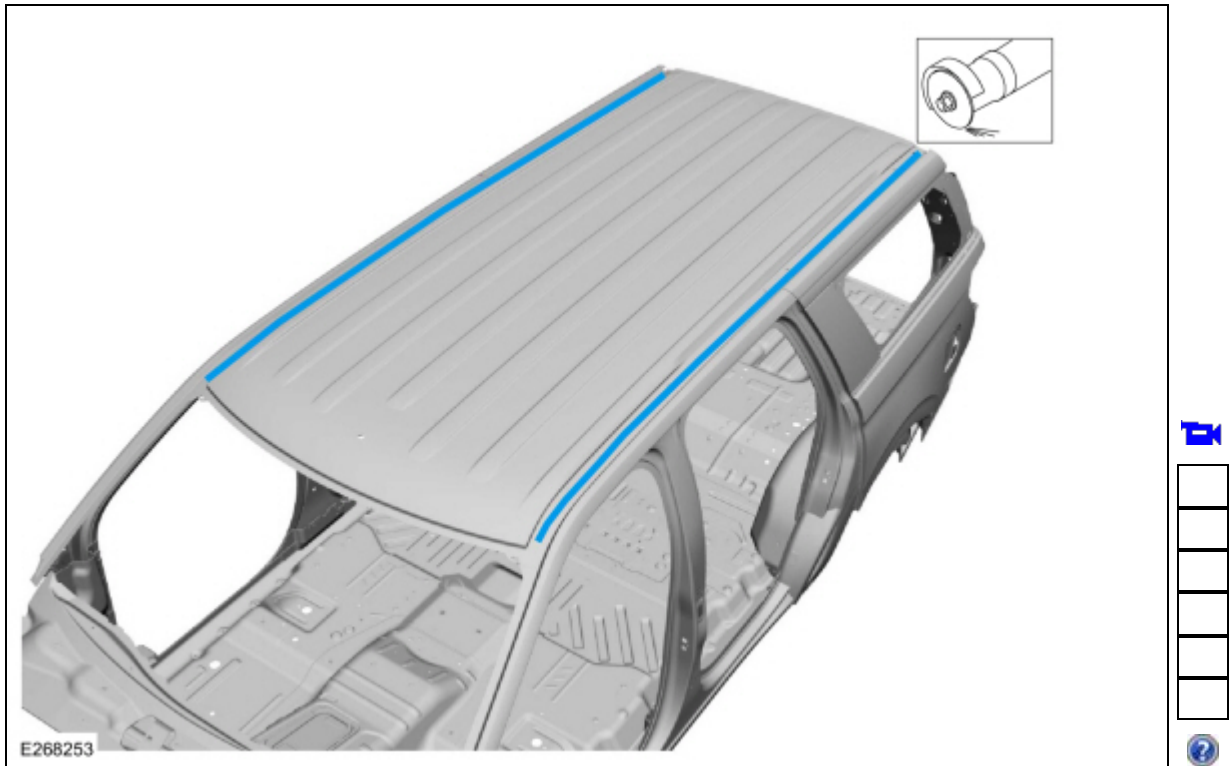
NOTICE: Adequately protect all glass, exterior finish and interior trim from contamination during entire repair procedure.

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: Long wheelbase (LWB) shown, short wheelbase (SWB) similar.

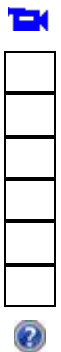
1. Depower the **SRS**.
Refer to: [Supplemental Restraint System \(SRS\) Depowering](#) (501-20B Supplemental Restraint System, General Procedures).
2. Remove the roof trim as equipped.
Refer to: [Roof Rail](#) (501-08 Exterior Trim and Ornamentation, Removal and Installation).
3. Remove the headliner.
Refer to: [Headliner](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).
4. Remove the windshield.
Refer to: [Fixed Glass](#) (501-11 Glass, Frames and Mechanisms, General Procedures).
5. Remove the liftgate.
Refer to: [Liftgate](#) (501-03 Body Closures, Removal and Installation).

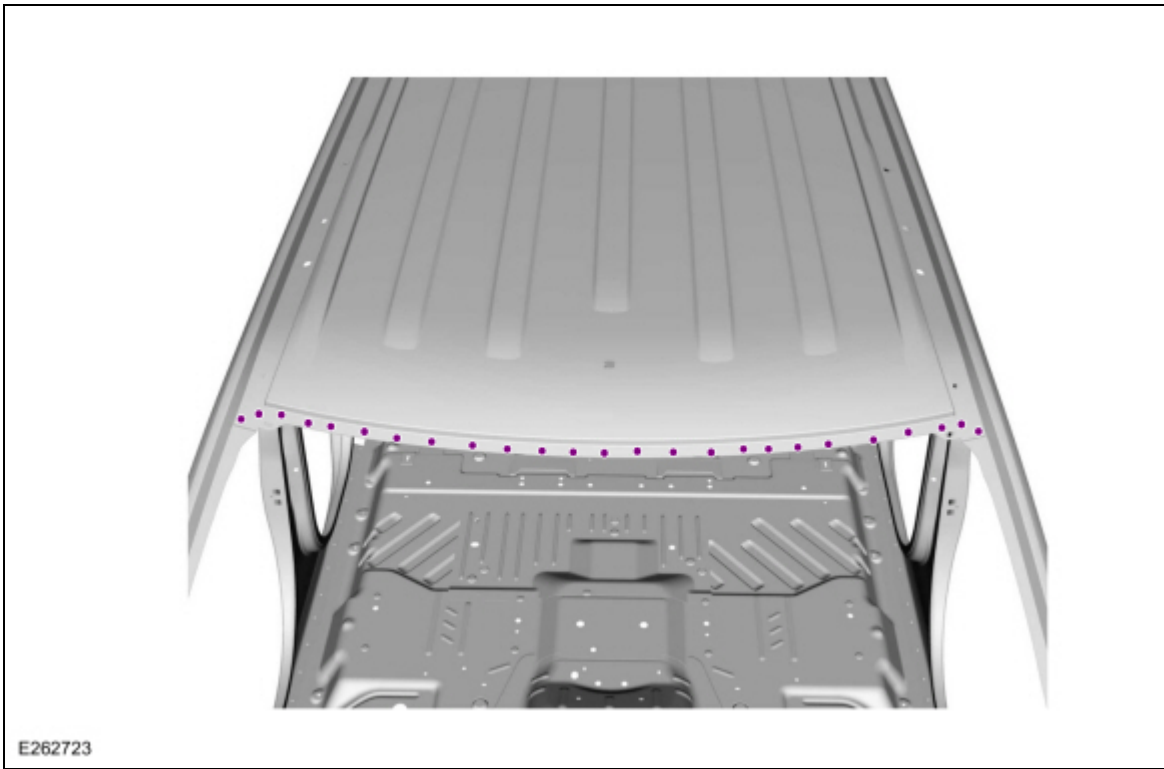
6. Remove the side curtain air bag.
Refer to: [Side Curtain Airbag](#) (501-20B Supplemental Restraint System, Removal and Installation).
7. Remove the satellite radio antenna.
Refer to: [Satellite Radio Antenna](#) (415-00 Information and Entertainment System - General Information, Removal and Installation).
8. Remove the roof ditch sealer.
Use the General Equipment: Grinder



9. **NOTE:** Note fastener quantity during removal, replacement fasteners must equal production fasteners.

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



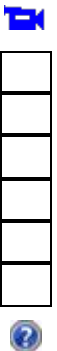
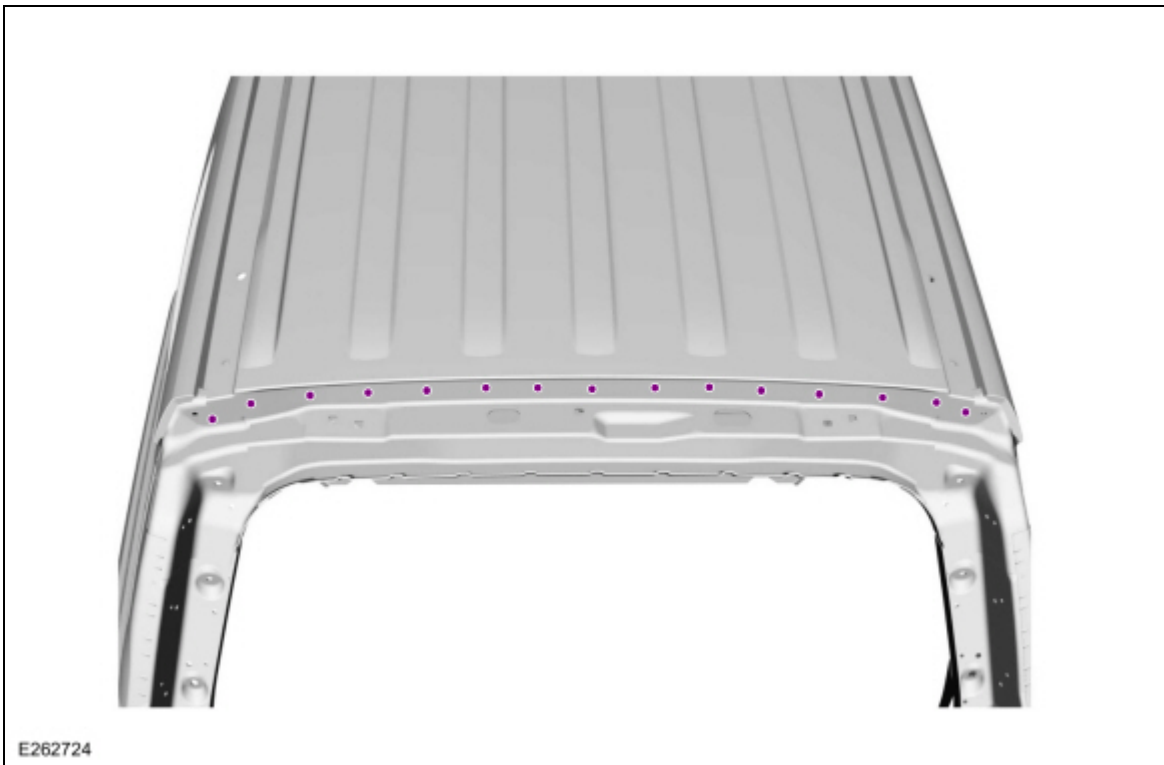


10. **NOTE:** Note fastener quantity during removal, replacement fasteners must equal production fasteners.

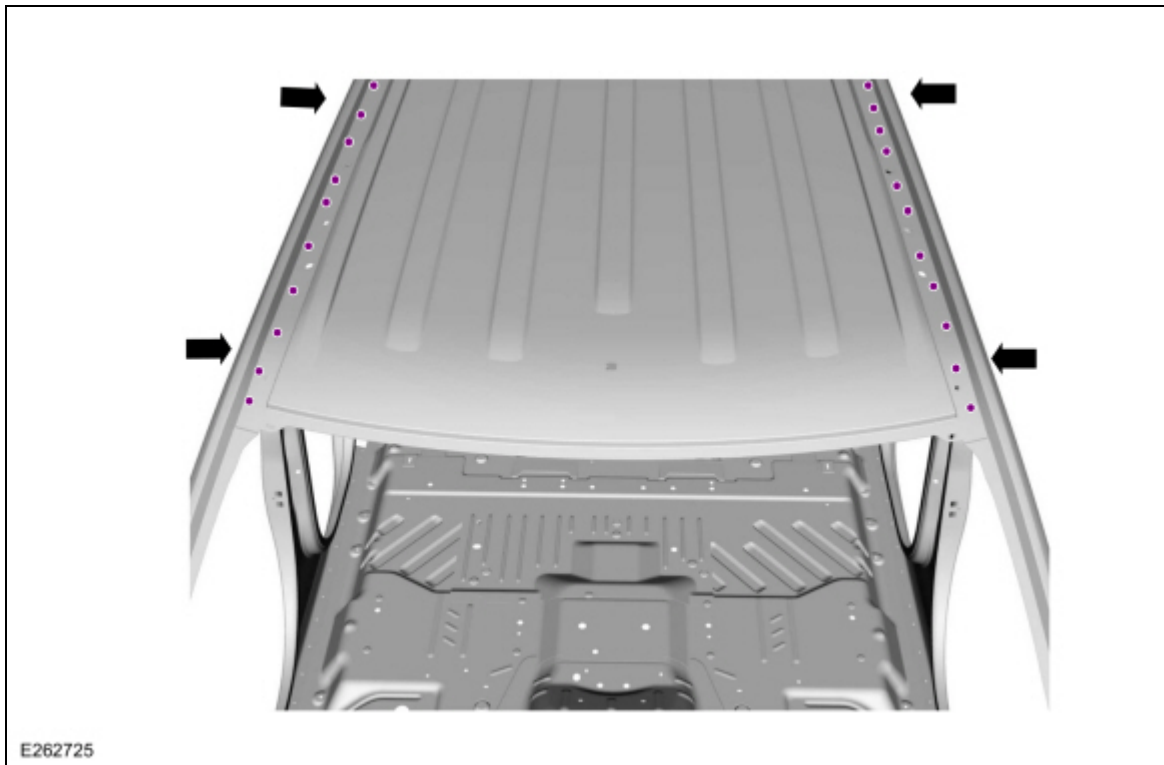
Remove the rear header SPR fasteners.

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

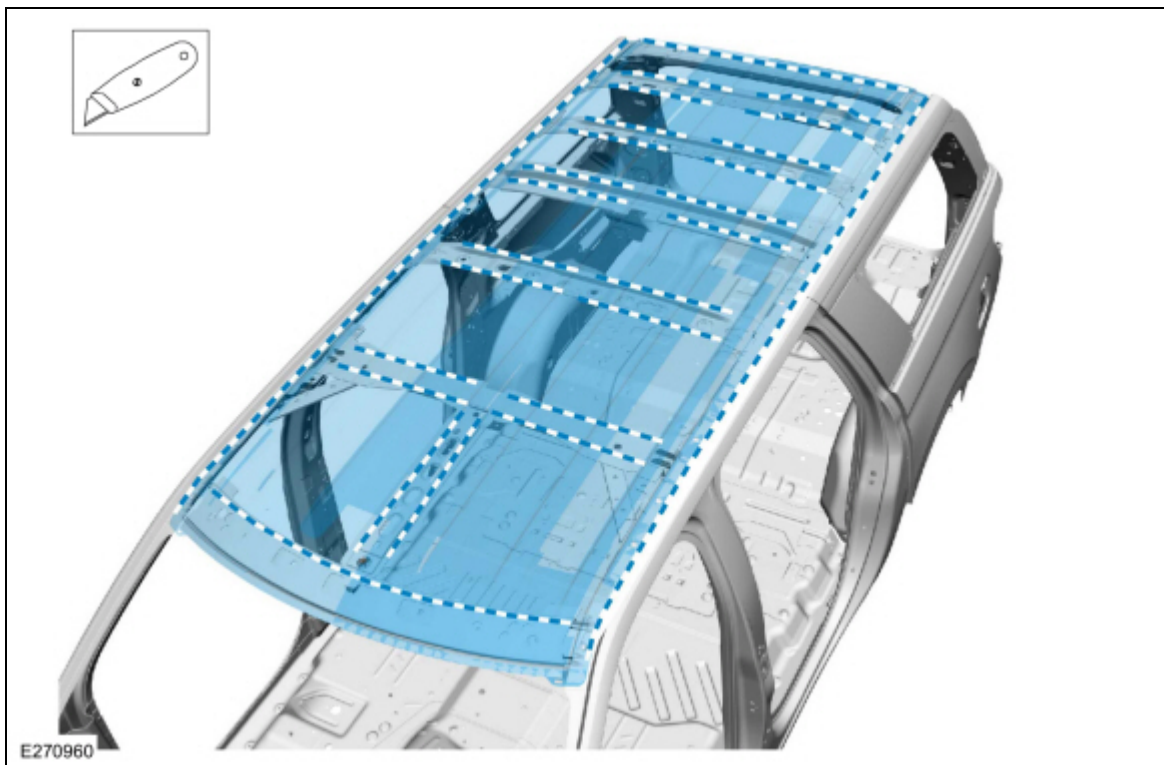
Use the General Equipment: Belt Sander



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



12. Separate the roof panel at the front and rear header, flanges and the roof bows.
Use the General Equipment: Knife



13. With the help of an assistant, remove the roof outer panel.

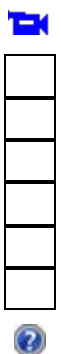


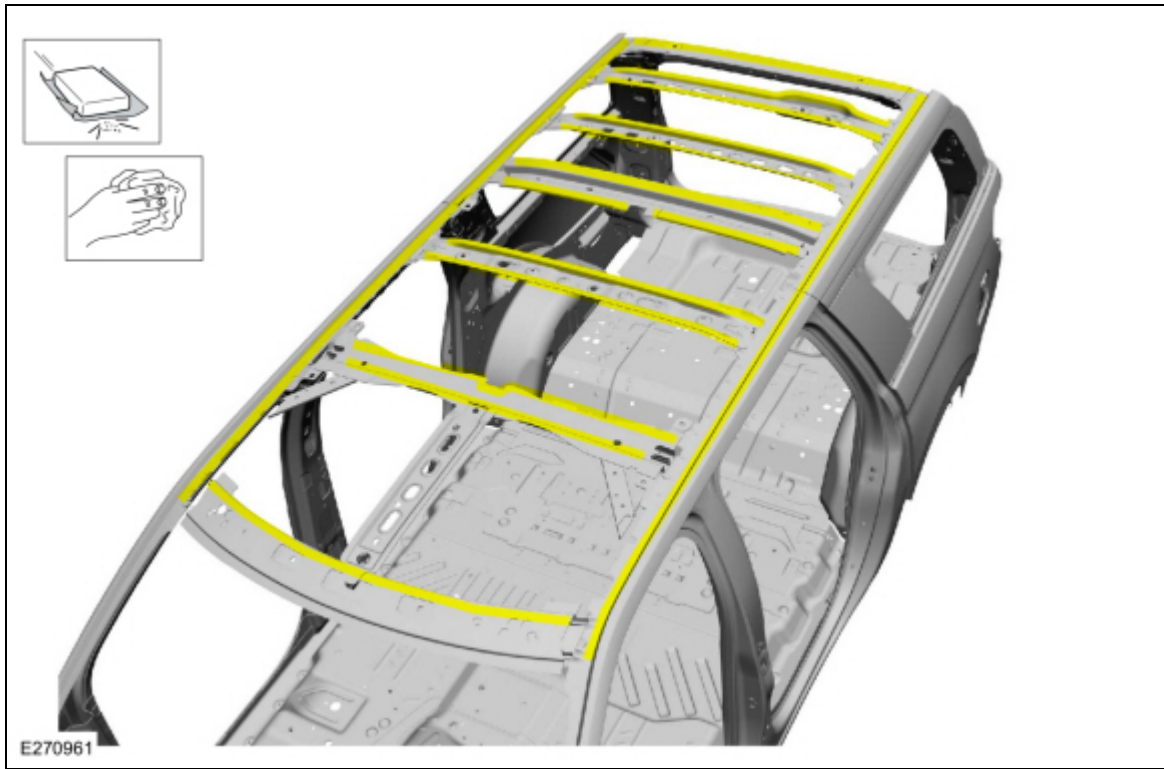
Installation

NOTICE: Adequately protect all glass, exterior finish and interior trim from contamination during entire repair procedure.

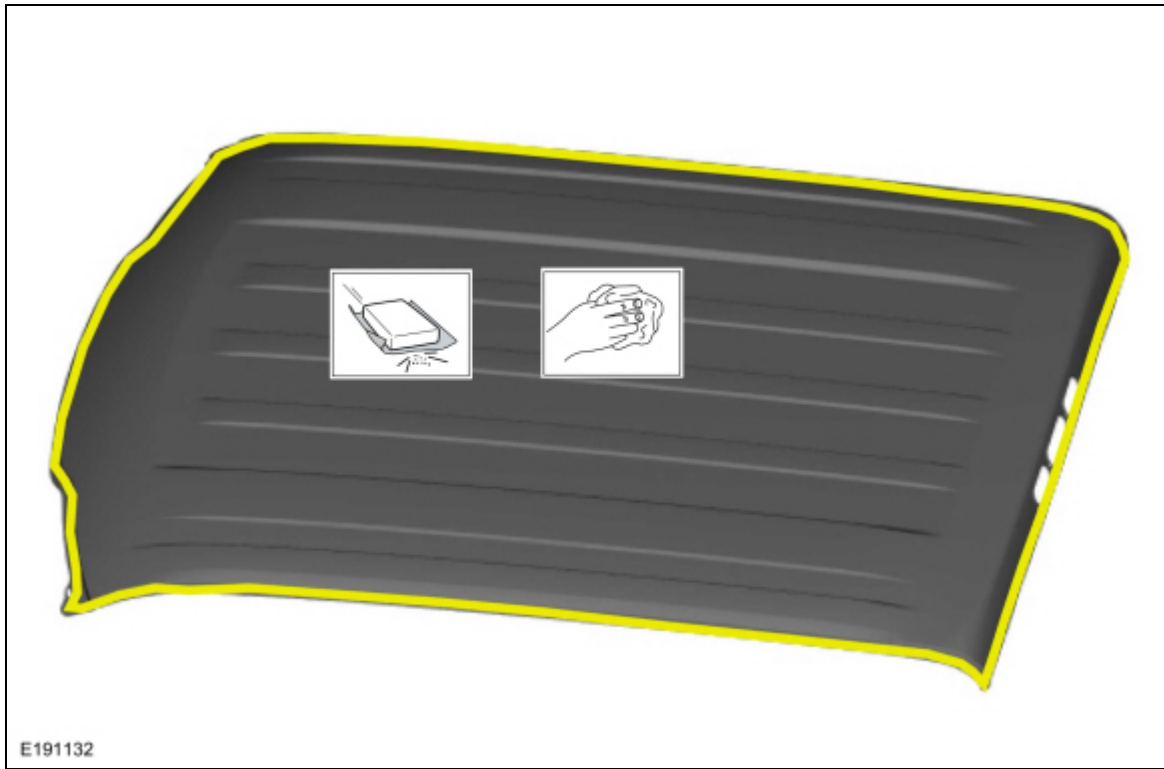
NOTE: *SPR fasteners may not be placed directly over original SPR location. They must be placed adjacent to original location matching original quantity.*

1. Use a hammer and dolly dedicated to aluminum repair to repair any damage to the body side flange to roof mating surfaces.
Refer to: [Special Repair Considerations for Aluminum Repairs](#) (501-25 Body Repairs - General Information, Description and Operation).
2. Sand and clean the roof panel mating surfaces using 80-120 grit sandpaper.

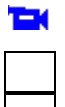
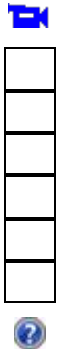




3. Sand to remove the e-coat and clean the roof panel mating surface using 80-120 grit sandpaper.

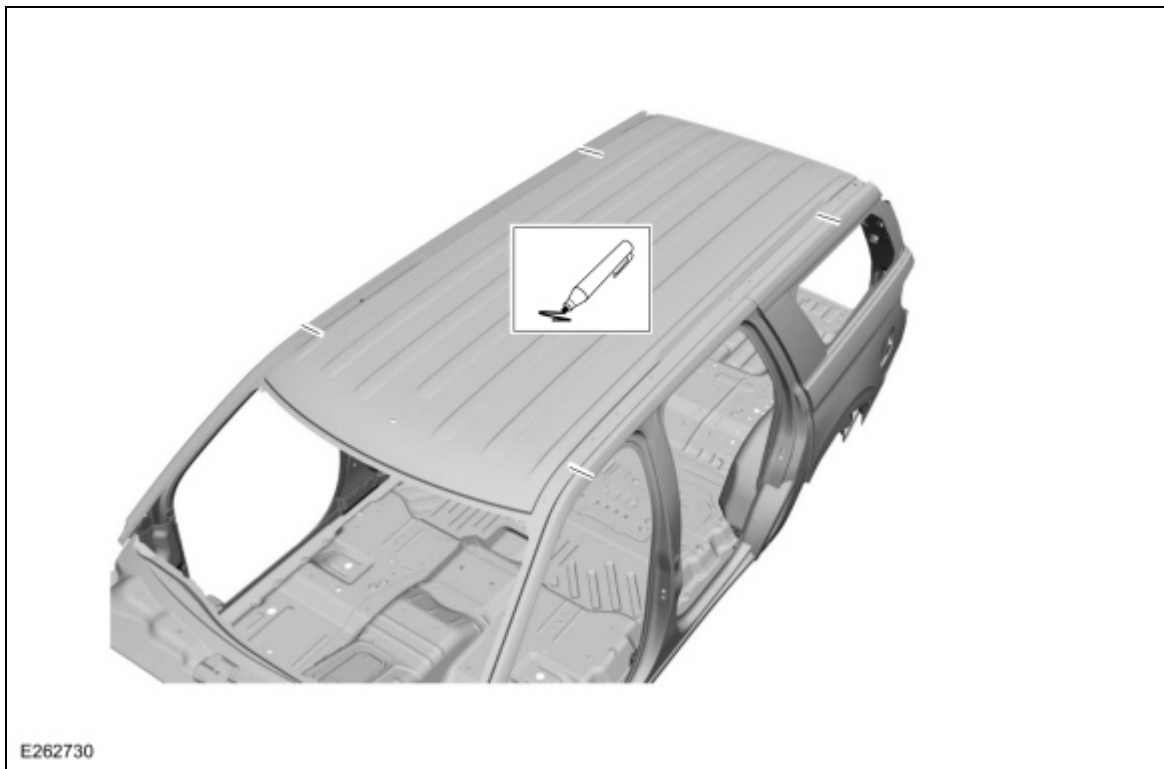


4. With the help of an assistant, install the roof outer panel.





5. Properly align and index mark the roof panel to the vehicle.



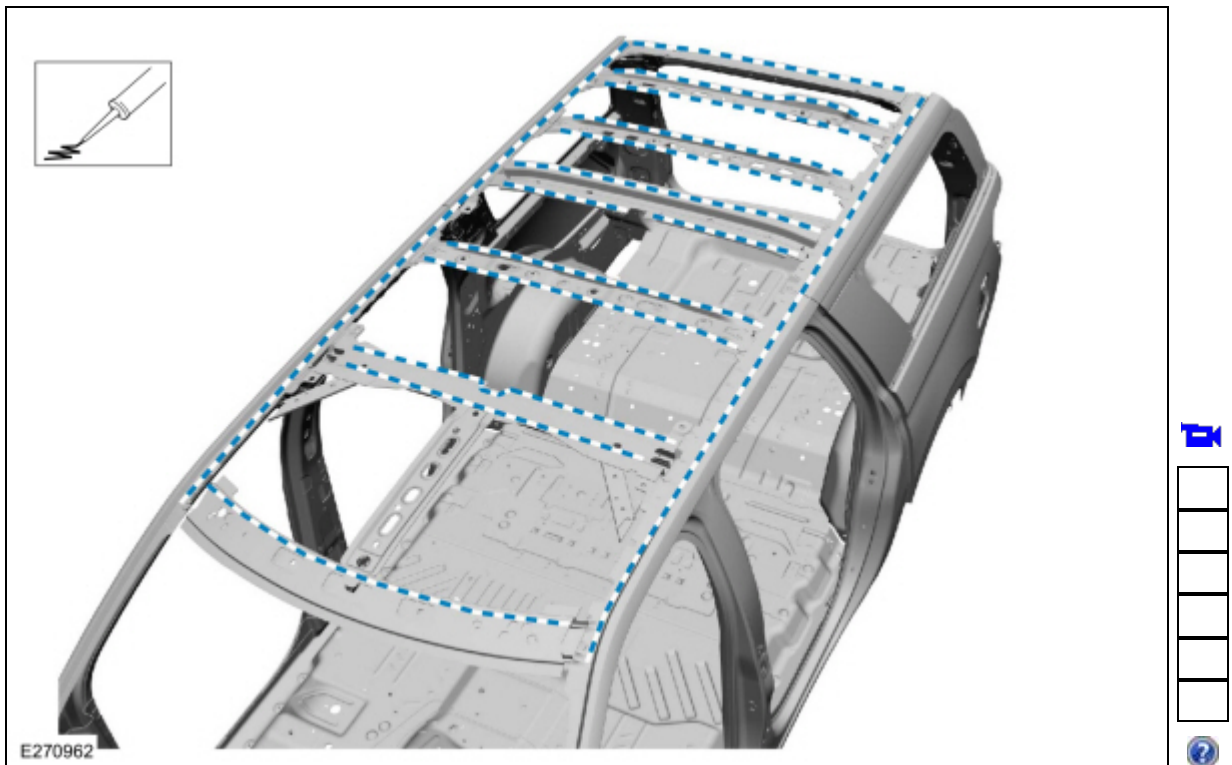
6. With the help of an assistant, remove the roof outer panel.



7. Apply adhesive to the front header panel, rear header panel and roof ditch mating surfaces. Apply NVH foam to the roof bows as noted during removal.

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

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



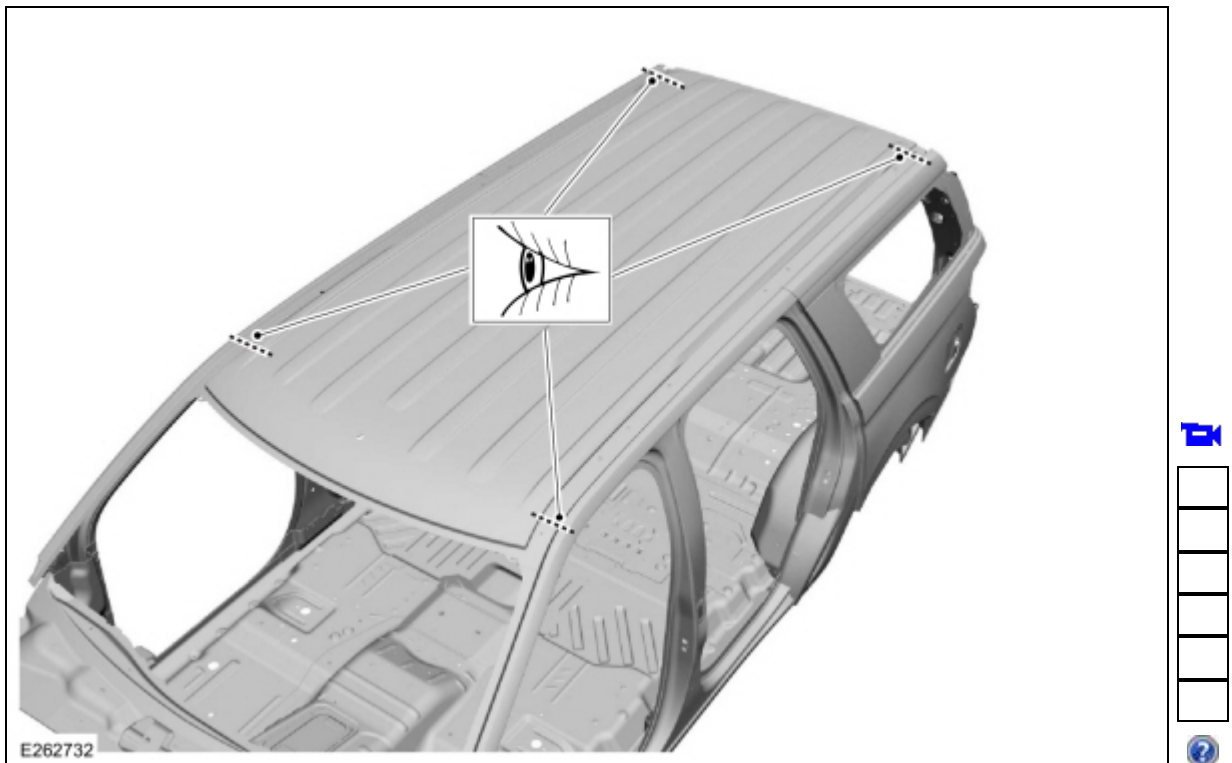
8. With the help of an assistant, install the roof panel.



9. **NOTE:** Do not lift the roof panel to align to index marks. Slide the panel in position to reduce the possibility of breaking the adhesive bond.

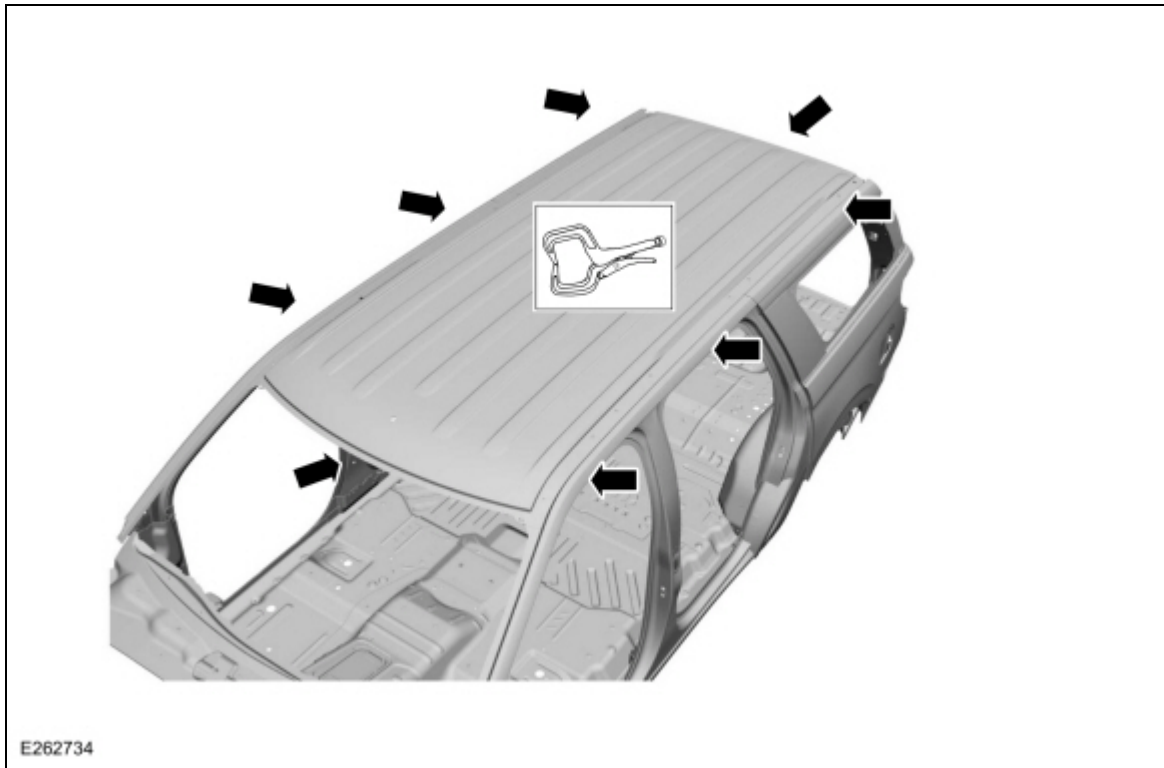
NOTE: Check for full adhesive contact. Add additional adhesive to the roof bows if necessary.

Properly align the roof panel to the index marks.

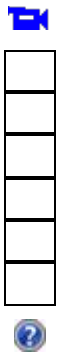
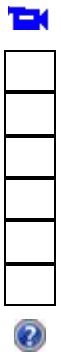


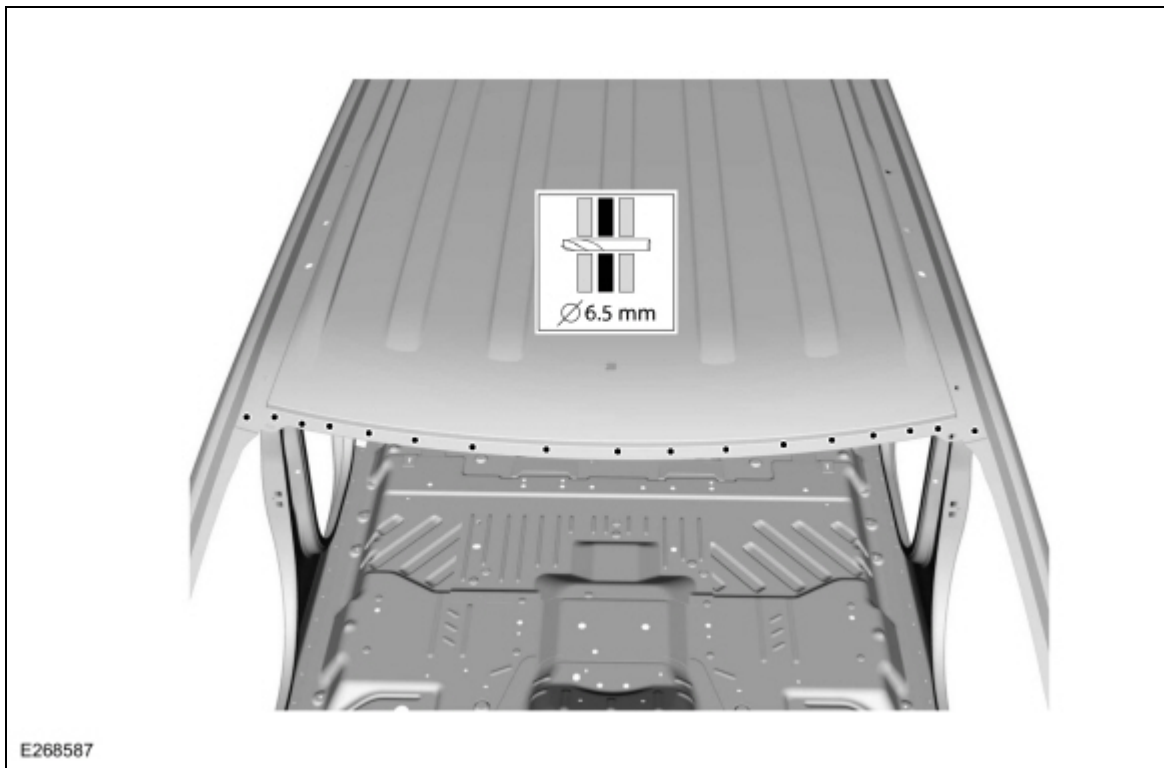
- 10. **NOTE:** Do not remove excess adhesive squeeze-out in the roof ditch area, smooth in to the joint to act as additional sealer.

Clamp roof panel in position.
Use the General Equipment: Locking Pliers



- 11. Drill for fasteners if installing solid rivets.
Use the General Equipment: 6.5 mm Drill Bit





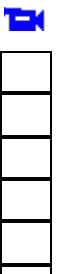
12. **NOTE:** SPR fasteners may not be placed directly over original SPR location. They must be placed adjacent to original location matching original quantity.

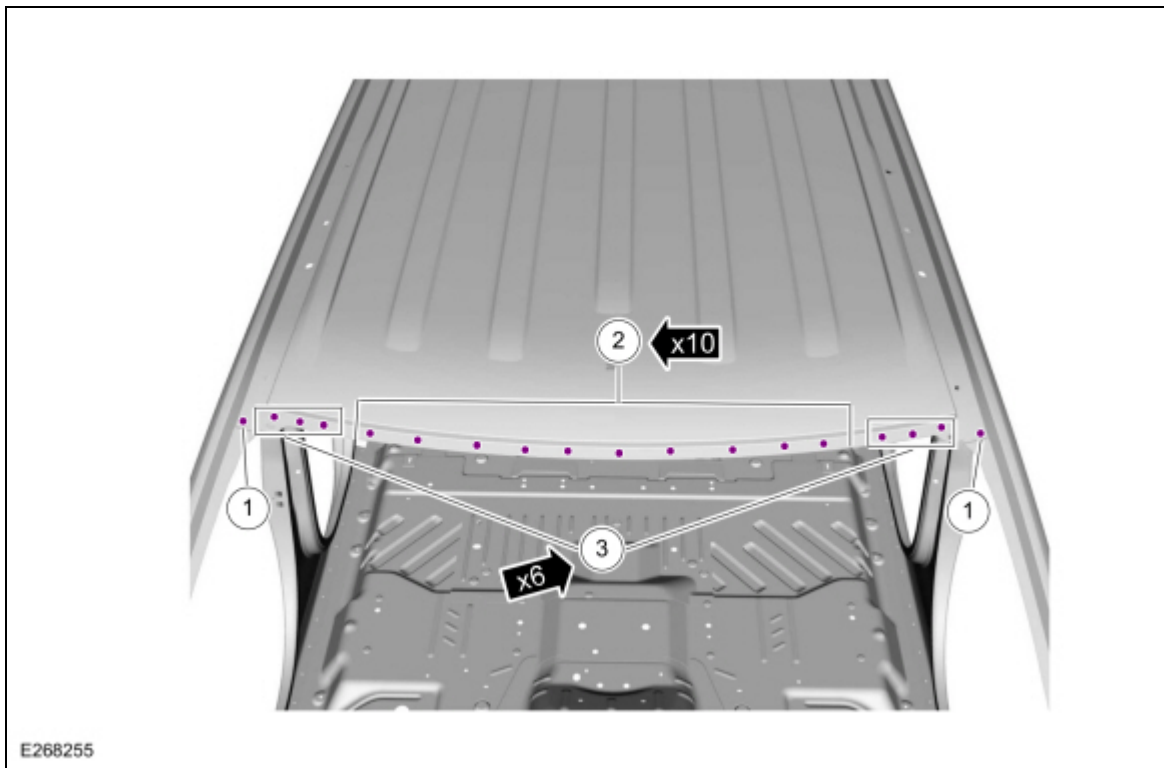
NOTE: Solid rivets may be used in place of SPR in the original SPR location after enlarging hole to 6.5 mm.

Install the fasteners.

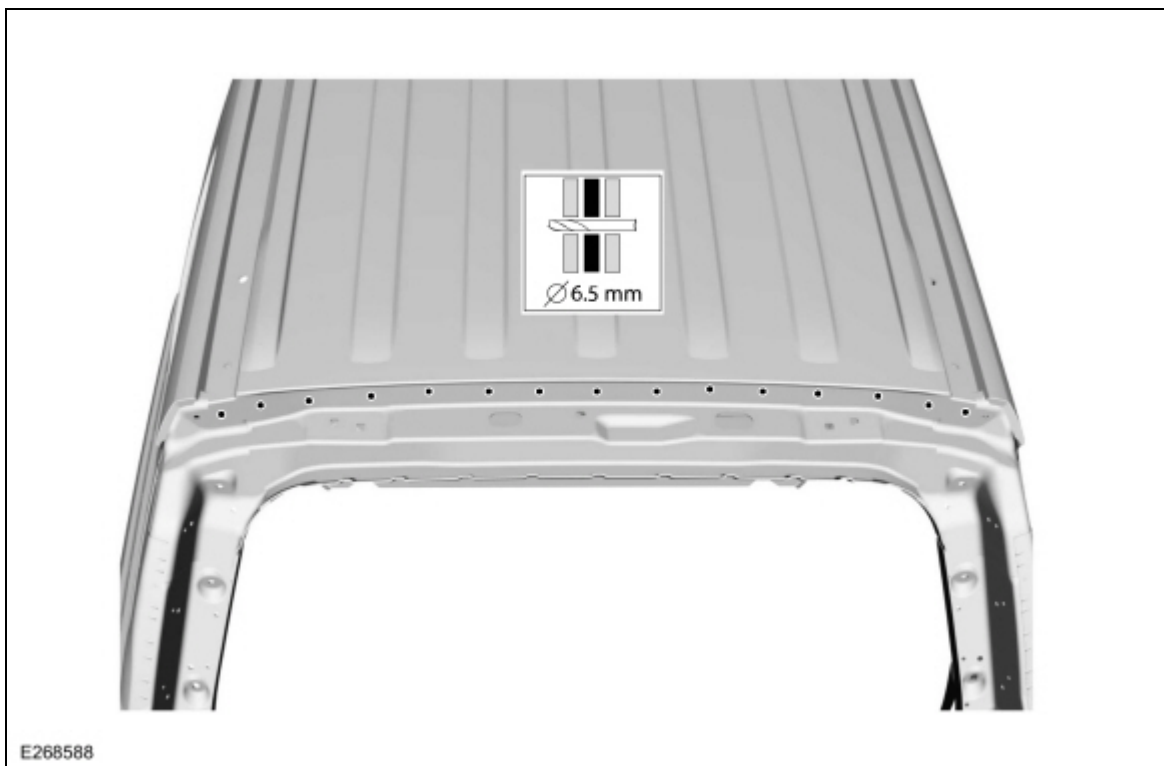
Item	<u>SPR</u> Number	<u>SPR</u> Code	Henrob® Mandrel	Pro-Spot® Mandrel	Blind Rivet	Solid Rivet	Rivnut®
1	W712218-S900	DB	DP09-200/H	SA-0400/SA-0401	-	W790376	-
2	W708713-S900	AS	DZ09-025/H	SA-0400/SA-0401	-	W790376-S900	-
3	W717186-S900	EN	DP11-200/H	SA-0400/SA-0402	-	W790377-S900	-

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





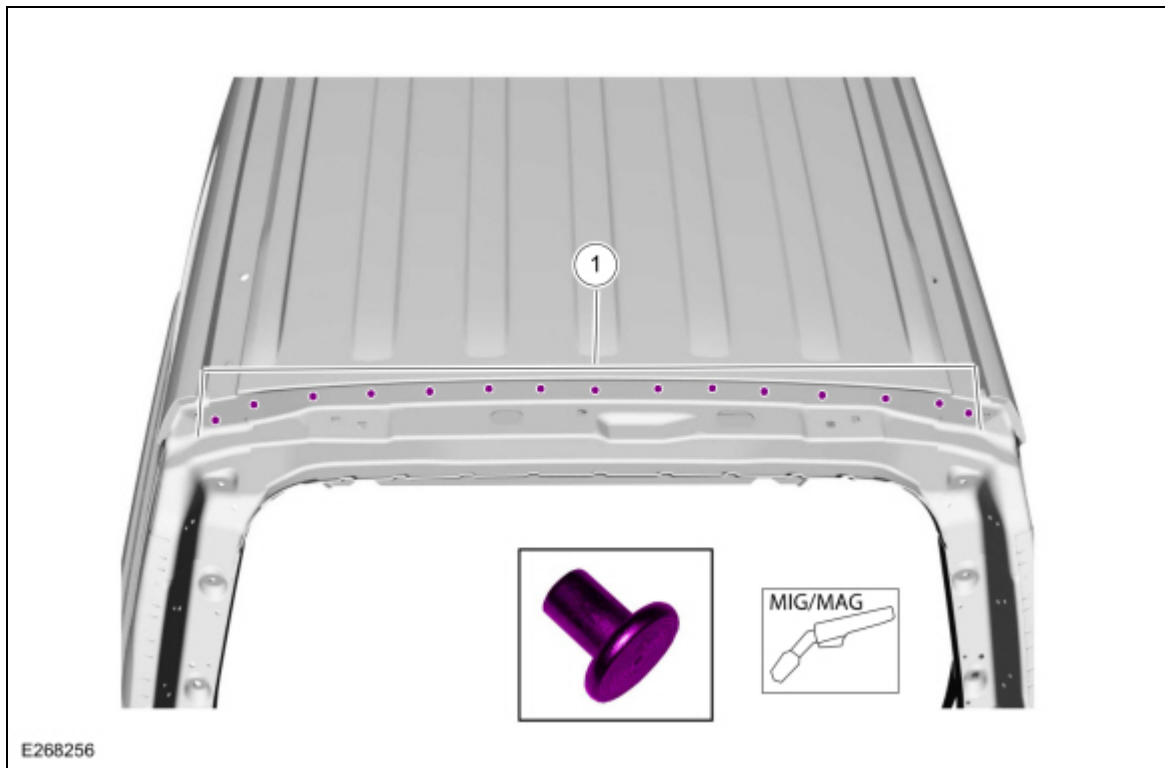
13. Drill for fasteners or MIG plug welds.
Use the General Equipment: 6.5 mm Drill Bit



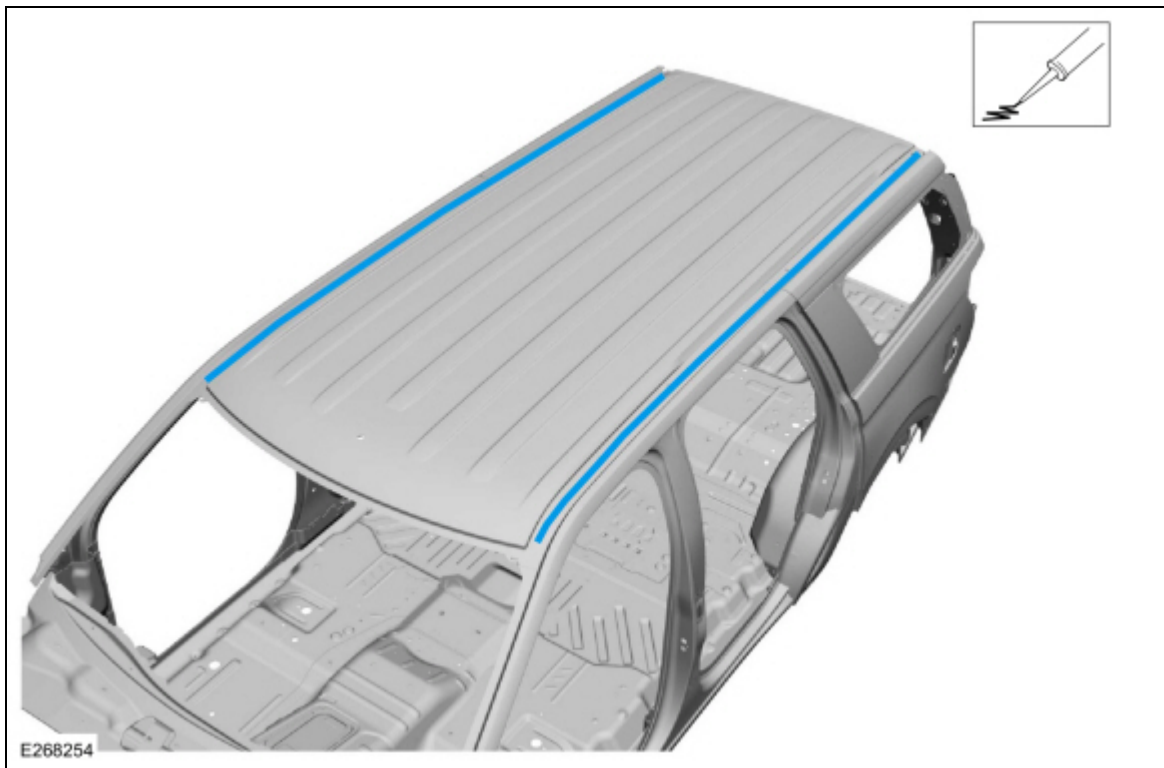
14. **NOTE:** Solid rivets or MIG plug welds may be used in place of SPR in the original SPR location after enlarging hole to 6.5 mm.

Install the fasteners or MIG plug welds.

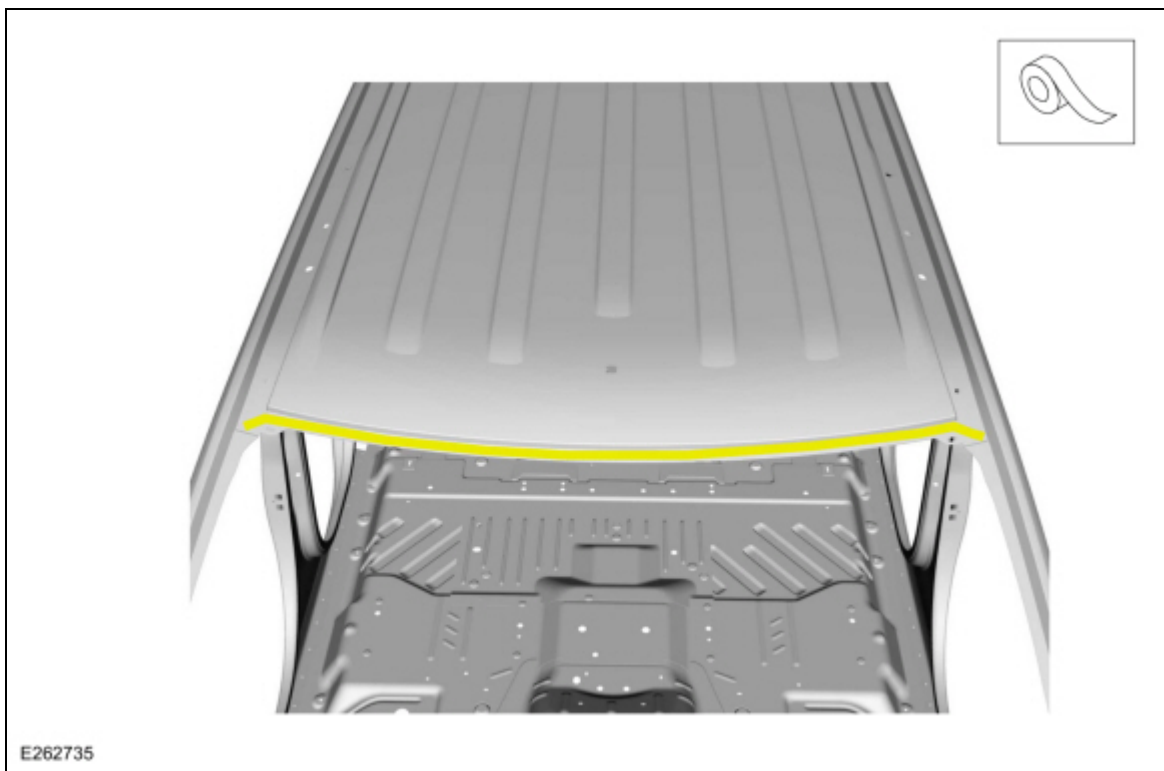
Item	SPR Number	SPR Code	Henrob® Mandrel	Pro-Spot® Mandrel	Blind Rivet	Solid Rivet	Rivnut®
1	-	-	-	-	-	W790377-S900	-



15. Sand and prime the windshield opening channel using a Ford approved epoxy based primer.
16. Apply roof ditch sealer.
Material: Roof Ditch Sealer / 3M™ 08307, LORD Fusor® 129

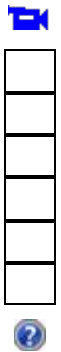


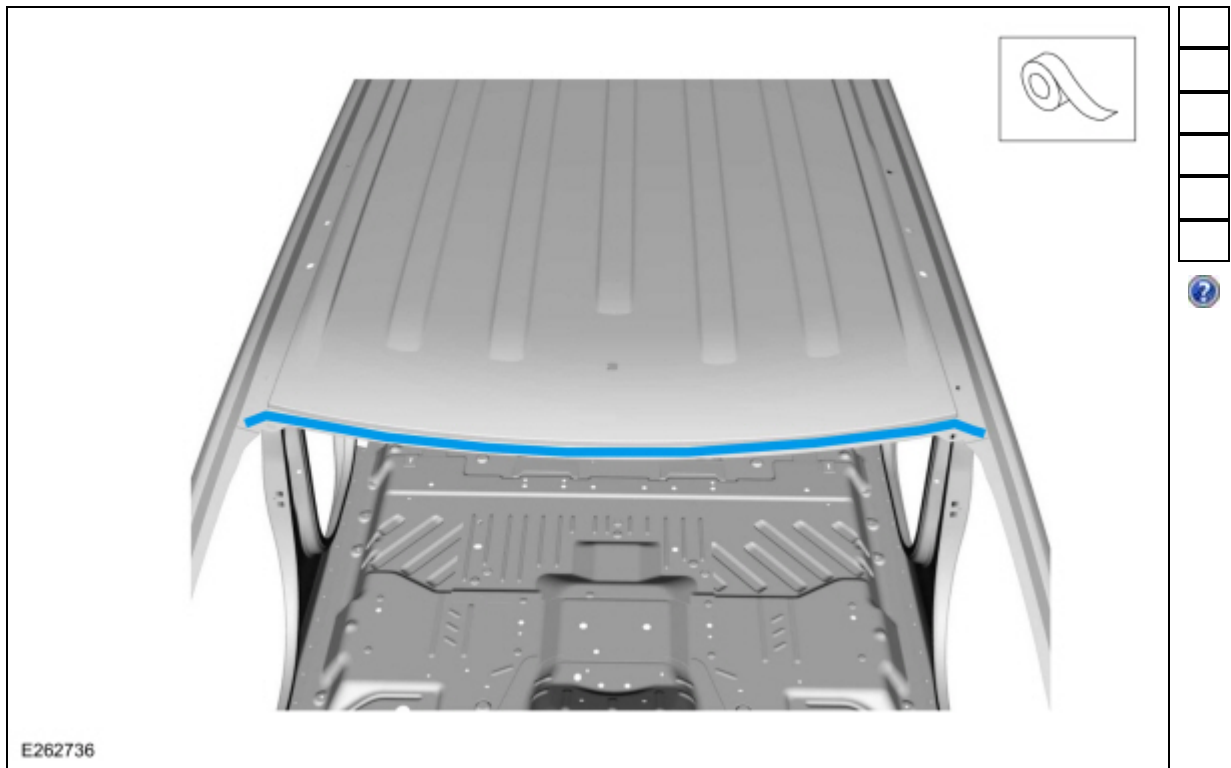
17. Mask off the upper windshield glass channel.



18. Refinish the entire repair area using a Ford approved paint system and standard refinishing techniques.

19. Remove the masking in the windshield glass channel.





20. Install the satellite radio antenna.
Refer to: [Satellite Radio Antenna](#) (415-00 Information and Entertainment System - General Information, Removal and Installation).
21. Install the side curtain air bag.
Refer to: [Side Curtain Airbag](#) (501-20B Supplemental Restraint System, Removal and Installation).
22. Install the headliner.
Refer to: [Headliner](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).
23. Install the windshield.
Refer to: [Fixed Glass](#) (501-11 Glass, Frames and Mechanisms, General Procedures).
24. Install the roof trim (if equipped).
Refer to: [Roof Rail](#) (501-08 Exterior Trim and Ornamentation, Removal and Installation).
25. Install the liftgate.
Refer to: [Liftgate](#) (501-03 Body Closures, Removal and Installation).
26. Repower the **SRS**.
Refer to: [Supplemental Restraint System \(SRS\) Repowering](#) (501-20B Supplemental Restraint System, General Procedures).

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