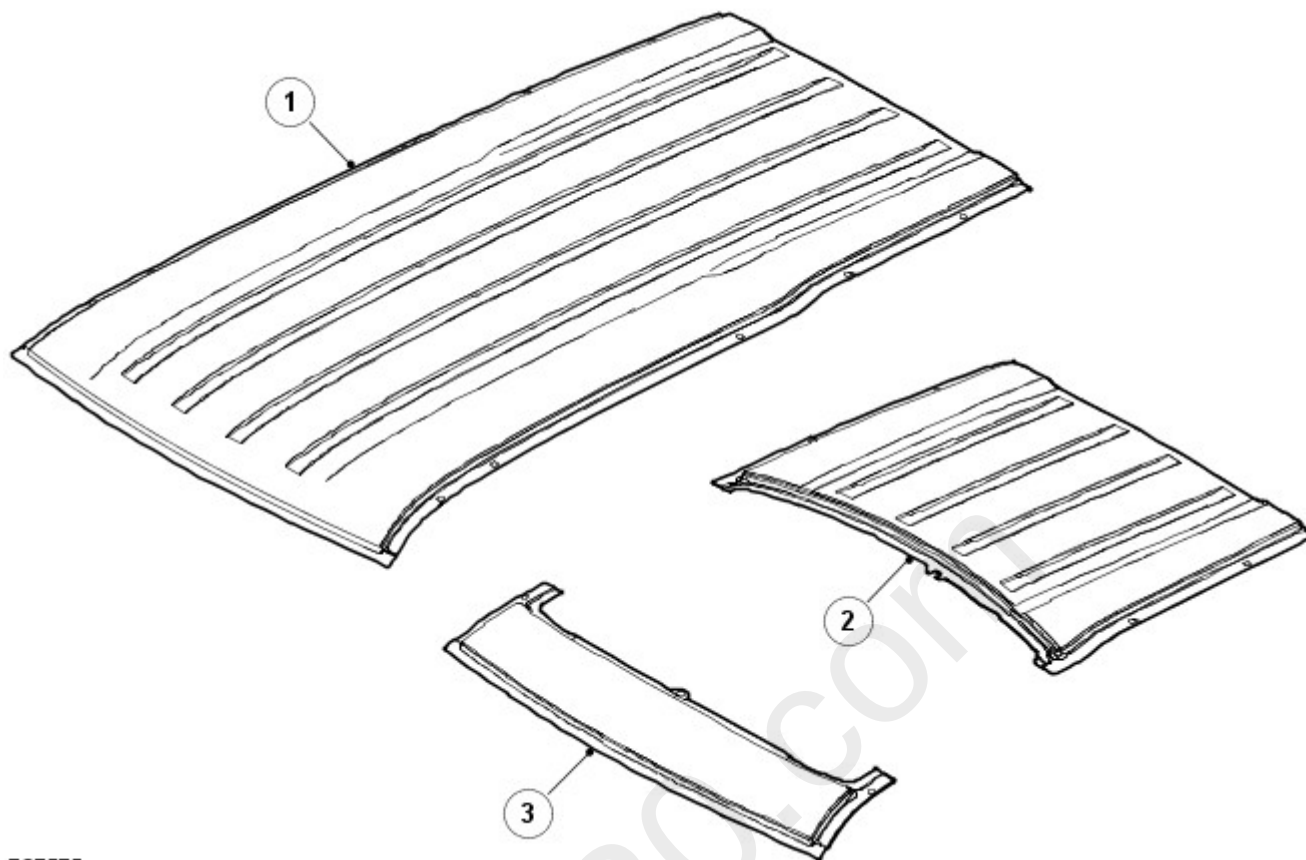


Roof Sheet Metal Repairs - Roof

Description and Operation

Roof service panels



E87575

Item	Description
1	Roof panel
2	Roof rear panel
3	Roof front panel

Time schedules, roof panels

The following times relate to the replacement of the roof panels as single panels. The published times include the removal of Mechanical, Electrical and Trim, (MET), items, plus paint times based on Metallic Clear Over Base Paint, (blends to adjacent panels are not included). A corrosion protection time is included where appropriate.

The times were generated by Thatcham, (the Motor Insurance Repair Research Centre), and are to be used as a guide only, based on new undamaged panels. Job allowances are not included, as a guide Thatcham recommend 0.3 hours to be added to single panel times.

Single panel times

Panel Description	Times
Roof panel	20.3
Roof rear panel	16.4
Roof front panel	14.4

Roof Sheet Metal Repairs - Roof Panel Vehicles Without: Sliding Roof Opening Panel

Removal and Installation

Removal

• NOTE: The roof is serviced as a separate weld on panel, less its reinforcements.

• NOTE: Along the RH and LH sides of the panel, spot welds should be installed adjacent to the originals and not in the same locations.

1. The roof panel is replaced in conjunction with:

- Liftgate
- Windshield

2. For additional information relating to this repair procedure please see the following:

For additional information, refer to: [Body and Frame](#) (501-26 Body Repairs - Vehicle Specific Information and Tolerance Checks, Description and Operation) / [Standard Workshop Practices](#) (100-00 General Information, Description and Operation).

3. Disconnect both battery cables.

4. Remove the liftgate.

For additional information, refer to: [Liftgate](#) (501-03 Body Closures, Removal and Installation).

5. Remove the windshield glass.

For additional information, refer to: [Windshield Glass](#) (501-11 Glass, Frames and Mechanisms, Removal and Installation).

6. Remove both front seats.

For additional information, refer to: [Front Seat](#) (501-10 Seating, Removal and Installation).

7. Remove the rear seat.

8. Remove both side air curtain modules.

For additional information, refer to: [Side Air Bag Module](#) (501-20B Supplemental Restraint System, Removal and Installation).

9. Remove both front safety belt retractors.

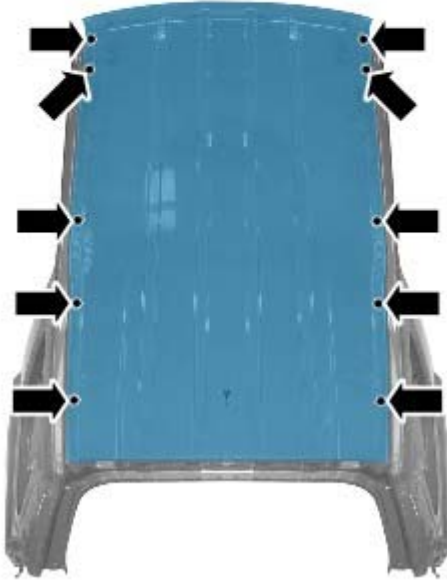
For additional information, refer to: [Front Safety Belt Retractor](#) (501-20A Safety Belt System, Removal and Installation).

10. Remove both rear safety belt retractors.

For additional information, refer to: [Rear Safety Belt Retractor](#) (501-20A Safety Belt System, Removal and Installation).

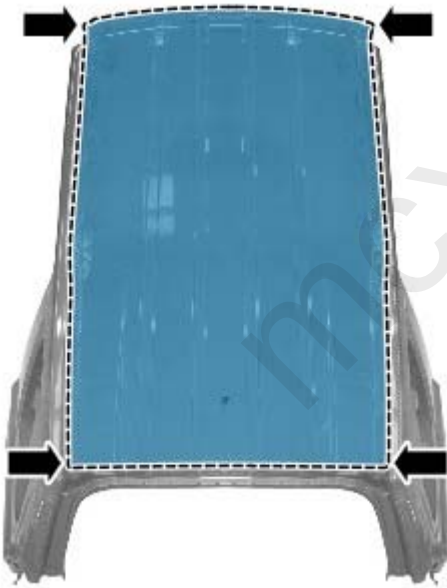
11. Release and lay aside the wiring harness.

12. Remove 10 21mm headed bolts.



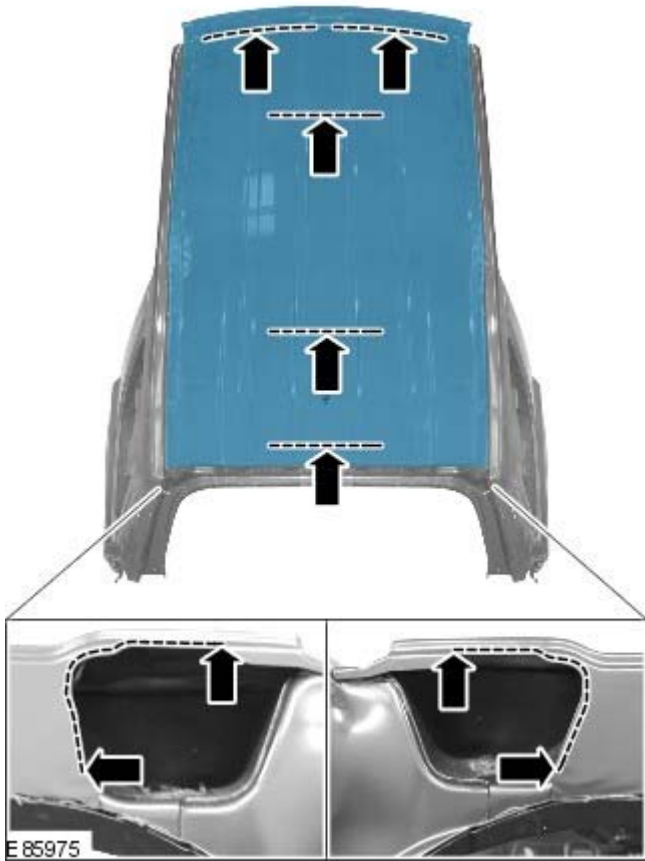
E85973

13. Mill out the spot welds.



E85974

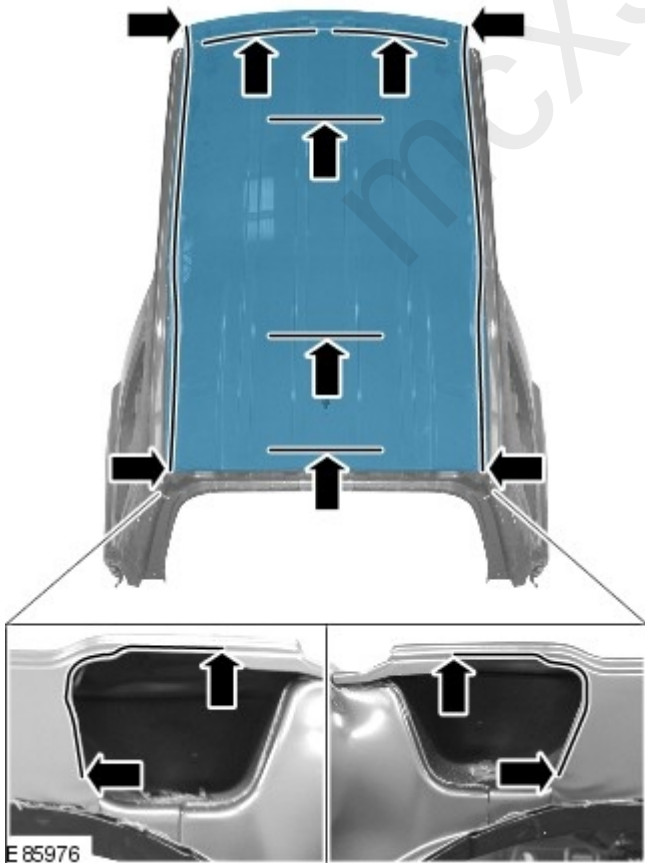
- 14.** Cut through the adhesive to separate the reinforcements from the roof panel.



- 15.** Separate the remaining joints and remove the old panel.

Installation

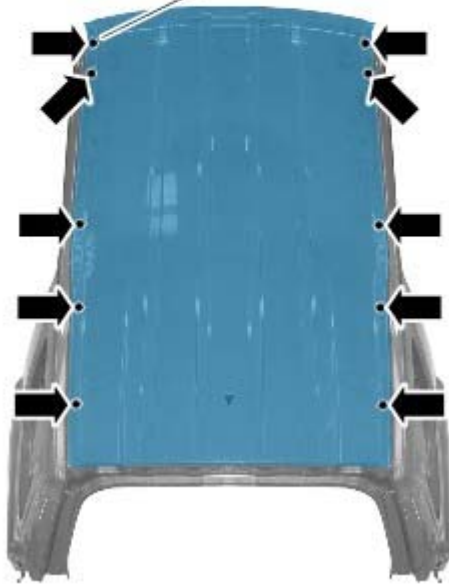
1. Prepare the old and new panel joint surfaces.
2. Apply adhesive, in the areas illustrated.



- 3.** Offer up the new panel and clamp into position. Check

alignment, if correct, proceed to next step, if not, rectify and recheck before proceeding.

4. Install 10 21mm bolts.



E85977



E85978

5. NOTE: Along the RH and LH sides of the panel, spot welds should be installed adjacent to the originals and not in the same locations.

Spot weld.

6. Dress all welded joints.

7. The installation of associated panels and mechanical components is the reverse of removal.

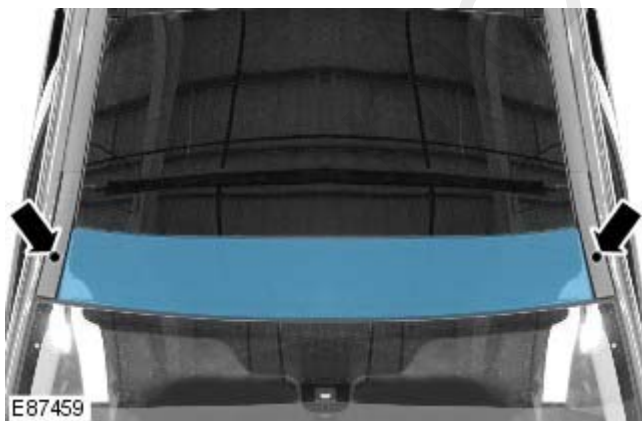
Roof Sheet Metal Repairs - Roof Front Panel Vehicles With: Sliding Roof Opening Panel

Removal and Installation

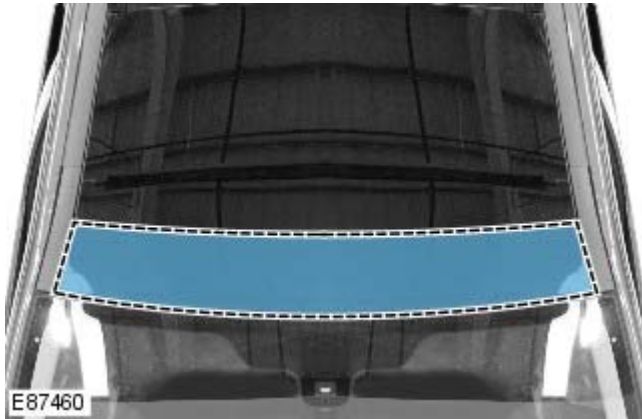
Removal

• NOTE: The roof front panel is serviced as a separate weld-on panel.

1. The roof front panel is replaced in conjunction with:
 - Windshield
 - Roof opening panel
2. For additional information relating to this repair procedure please see the following:
For additional information, refer to: [Body and Frame](#) (501-26 Body Repairs - Vehicle Specific Information and Tolerance Checks, Description and Operation) / [Standard Workshop Practices](#) (100-00 General Information, Description and Operation).
3. Disconnect both battery cables.
4. Remove the windshield glass.
For additional information, refer to: [Windshield Glass](#) (501-11 Glass, Frames and Mechanisms, Removal and Installation).
5. Remove both front seats.
For additional information, refer to: [Front Seat](#) (501-10 Seating, Removal and Installation).
6. Remove the roof opening panel.
For additional information, refer to: [Roof Opening Panel](#) (501-17 Roof Opening Panel, Removal and Installation).
7. Remove both side air curtain modules.
For additional information, refer to: [Side Air Curtain Module](#) (501-20B Supplemental Restraint System, Removal and Installation).
8. Remove both front safety belt retractors.
For additional information, refer to: [Front Safety Belt Retractor](#) (501-20A Safety Belt System, Removal and Installation).
9. Remove both rear safety belt retractors.
For additional information, refer to: [Rear Safety Belt Retractor](#) (501-20A Safety Belt System, Removal and Installation).
10. Release and lay aside the wiring harness.
11. Remove 2 21mm headed bolts, 1 each side.



12. Mill out the spot welds.

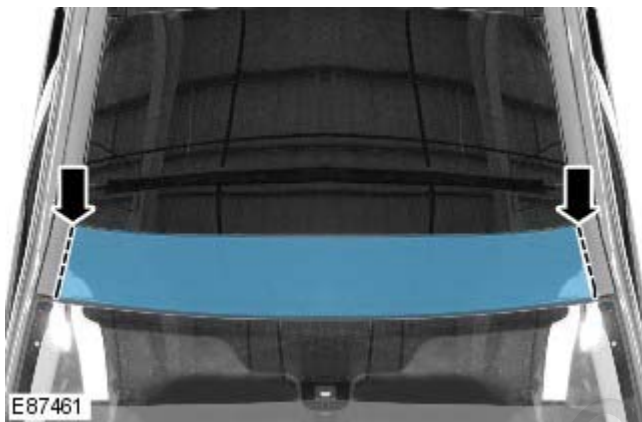


13. Separate the joints and remove the old panel.

Installation

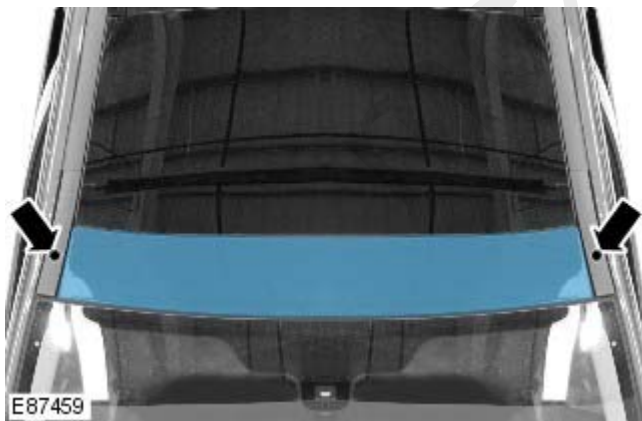
1. Prepare the old and new panel joint surfaces.

2. Apply adhesive, in the areas illustrated.

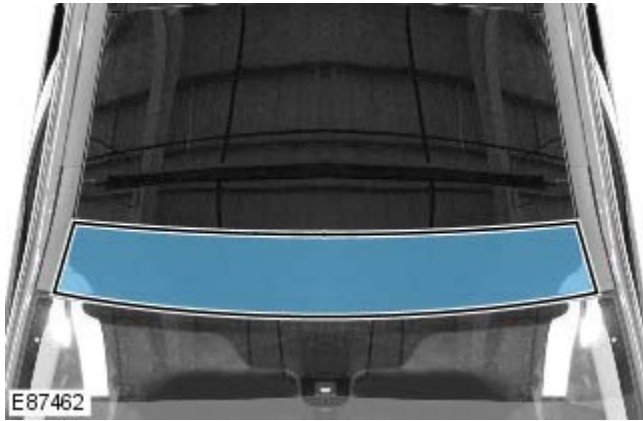


3. Offer up the new panel and clamp into position. Check alignment, if correct, proceed to next step, if not, rectify and recheck before proceeding.

4. Install 2 21mm bolts.



5. Spot weld.



6. Dress all welded joints.

7. The installation of associated panels and mechanical components is the reverse of removal.

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Roof Sheet Metal Repairs - Roof Rear Panel Vehicles With: Sliding Roof Opening Panel

Removal and Installation

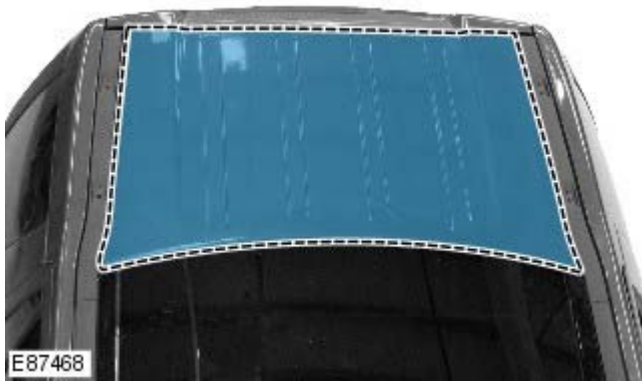
Removal

- NOTE: The roof rear panel is serviced as a separate weld-on panel, less its reinforcements.
- NOTE: Along the RH and LH sides of the panel, spot welds should be installed adjacent to the originals and not in the same locations.

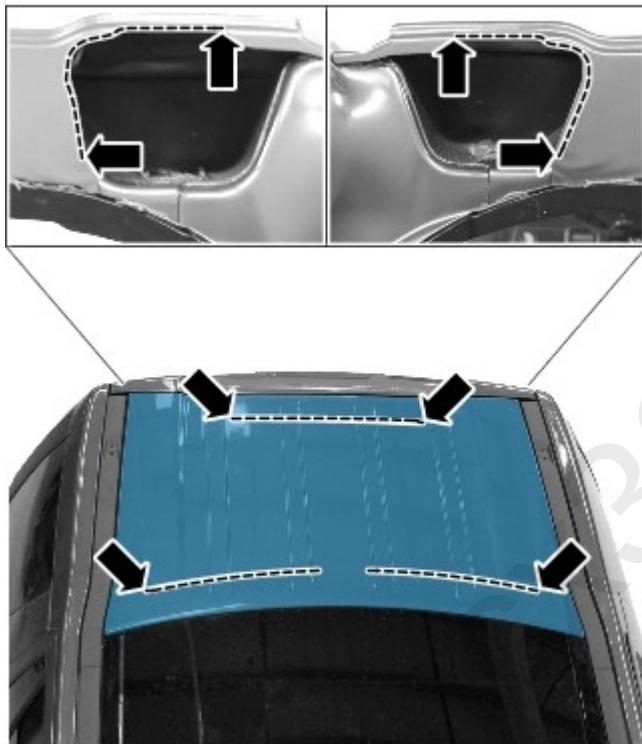
1. The roof rear panel is replaced in conjunction with:
 - Liftgate
 - Roof opening panel
2. For additional information relating to this repair procedure please see the following:
For additional information, refer to: [Body and Frame](#) (501-26 Body Repairs - Vehicle Specific Information and Tolerance Checks, Description and Operation) / [Standard Workshop Practices](#) (100-00 General Information, Description and Operation).
3. Disconnect both battery cables.
4. Remove the liftgate.
For additional information, refer to: [Liftgate](#) (501-03 Body Closures, Removal and Installation).
5. Remove both front seats.
For additional information, refer to: [Front Seat](#) (501-10 Seating, Removal and Installation).
6. Remove the rear seat.
7. Remove the roof opening panel.
For additional information, refer to: [Roof Opening Panel](#) (501-17 Roof Opening Panel, Removal and Installation).
8. Remove both side air curtain modules.
For additional information, refer to: [Side Air Bag Module](#) (501-20B Supplemental Restraint System, Removal and Installation).
9. Remove both front safety belt retractors.
For additional information, refer to: [Front Safety Belt Retractor](#) (501-20A Safety Belt System, Removal and Installation).
10. Remove both rear safety belt retractors.
For additional information, refer to: [Rear Safety Belt Retractor](#) (501-20A Safety Belt System, Removal and Installation).
11. Release and lay aside the wiring harness.
12. Remove 4 21mm headed bolts, 2 each side.



13. Mill out the spot welds.



14. Cut through the adhesive to separate the reinforcements from the roof rear panel.



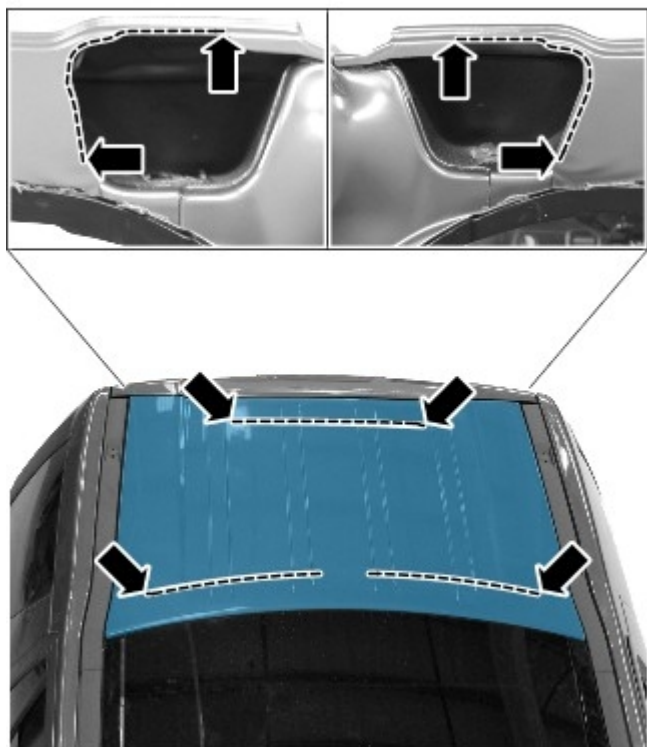
E87465

15. Separate the remaining joints and remove the old panel.

Installation

1. Prepare the old and new panel joint surfaces.

2. Apply adhesive, in the areas illustrated.



E87465

3. Offer up the new panel and clamp into position. Check alignment, if correct, proceed to next step, if not, rectify and recheck before proceeding.

4. Install 4 21mm bolts.



E87467

5. NOTE: Along the RH and LH sides of the panel, spot welds should be installed adjacent to the originals and not in the same locations.

Spot weld.



E87469

6. Dress all welded joints.

7. The installation of associated panels and mechanical