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2020.0 DEFENDER (LE), 501-29

SIDE PANEL SHEET METAL REPAIRS

SIDE PANEL – 90 (G2452617)

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REMOVAL AND INSTALLATION

REMOVAL

The following step(s) applies to:

All vehicles

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**NOTE:**

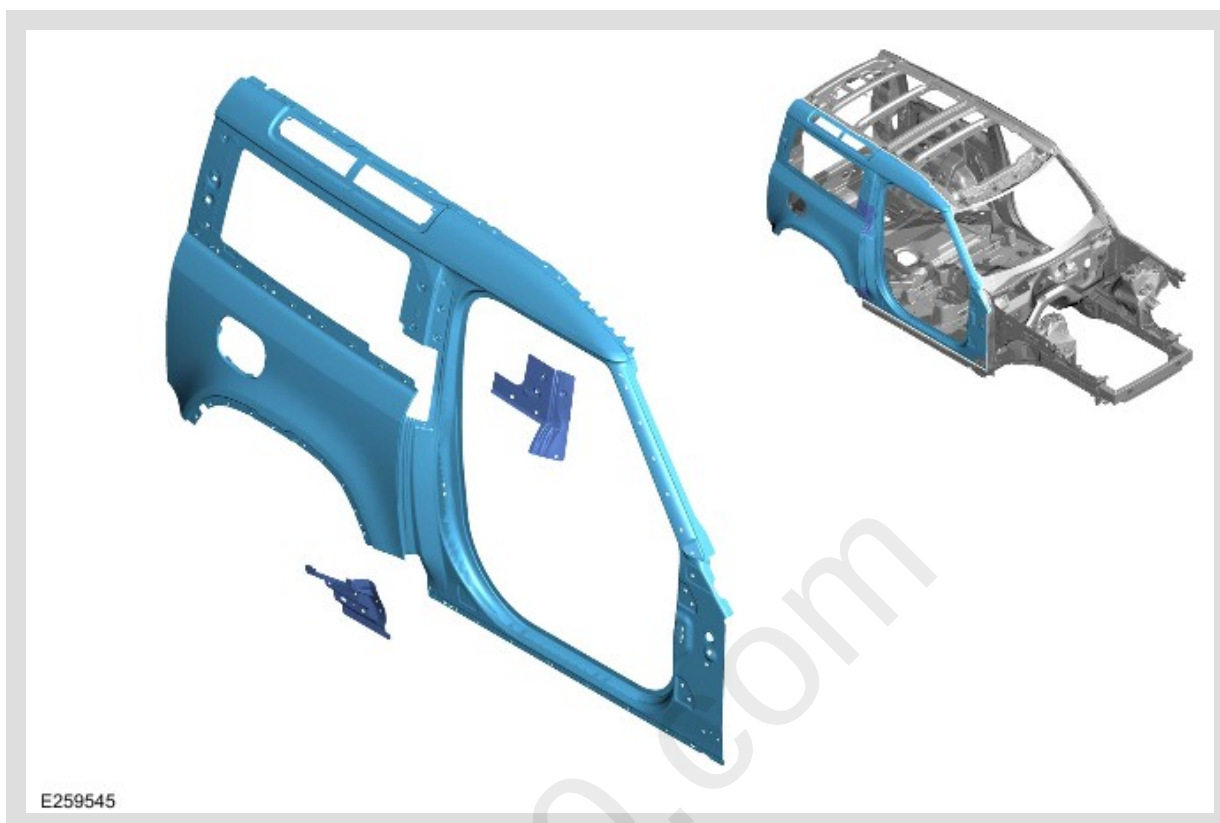
In this procedure the side panel is installed in conjunction with:

- Rear roof
- Roof opening panel frame
- Rear bumper
- A-pillar lower trim panel
- Instrument panel
- Front row seat
- Second row seat
- Front row safety belt retractor
- Second row safety belt retractor
- Fender apron panel
- Front fender mounting bracket lower
- Windshield
- Rear quarter window
- Alpine window
- Windshield header panel upper
- Fuel filler pipe
- Deployable roof ladder
- Side steps and protection tubes.

1.

 NOTE:

Additional items will be required to complete the repair.



The side panel is serviced as indicated.

2.

Before commencing this procedure make sure that you are aware of all Health and Safety requirements. Refer to: [Health and Safety Precautions](#) (100-00 General Information, Description and Operation).

**NOTES:**

- Where Breakstem Fastener (BSF) removal is instructed remove the fastener shaft with a 4 mm punch and remove the head with a 6.5 mm drill bit. Clean all the drilled holes to make sure they are free from debris.
- Where Self Piercing Rivet (SPR) removal is instructed use either the Jaguar Land Rover (JLR)) approved SPR tool or a 5.3 mm drill bit. Clean all the drilled holes to make sure they are free from debris.
- Where Flow Form Rivet (FFR) removal is instructed, remove the head and then remove the shaft with a punch. Clean the holes to make sure they are free from debris.
- Any joints sealed as part of vehicle manufacture must be sealed as part of the repair.

When installing the side panel make sure that you are aware of the methods, tools and fixings used in this procedure.

Refer to: [Body Repairs](#) (501-25A Body Repairs - General Information, Description and Operation).

Refer to: [Adhesives, Fixings and Consumables](#) (501-25A Body Repairs - General Information, Description and Operation).

4. For additional information on the fixings required to complete this procedure

Refer to: [Specifications - 110](#) (501-29 Side Panel Sheet Metal Repairs, Specifications).

5. For additional removal information

Refer to: [Rear Roof Panel - 90, Vehicles With: Roof Opening Panel](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

6. For additional removal information

Refer to: [Roof Opening Panel Frame](#) (501-17 Roof Opening Panel, Removal and Installation).

7. For additional removal information

Refer to: [Rear Bumper](#) (501-19 Bumpers, Removal and Installation).

8. For additional removal information

Refer to: [A-Pillar Lower Trim Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

9. For additional removal information

Refer to: [Instrument Panel Upper Trim](#) (501-12 Instrument Panel and Console, Removal and Installation).

Refer to: [Instrument Panel Lower Trim](#) (501-12 Instrument Panel and Console, Removal and Installation).

10. For additional removal information

Refer to: [Front Row Seat - Vehicles With: Power Seats](#) (501-10 Seating, Removal and Installation).

Refer to: [Front Row Seat - Vehicles Without: Power Seats](#) (501-10 Seating, Removal and Installation).

11. For additional removal information

Refer to: [Second Row Seat - 90](#) (501-10 Seating, Removal and Installation).

12. For additional removal information

Refer to: [Front Row Seatbelt Retractor - 90](#) (501-20A Seatbelt System, Removal and Installation).

13. For additional removal information

Refer to: [Second Row Seatbelt Retractor - 90](#) (501-20A Seatbelt System, Removal and Installation).

14. For additional removal information

Refer to: [Fender Apron Panel - 90](#) (501-27 Front End Sheet Metal Repairs, Removal and Installation).

15. For additional removal information

Refer to: [Front Fender Mounting Bracket Lower - 90](#) (501-27 Front End Sheet Metal Repairs, Removal and Installation).

16. For additional removal information

Refer to: [Windshield](#) (501-11 Glass, Frames and Mechanisms, Removal and Installation).

17. For additional removal information

Refer to: [Rear Quarter Window](#) (501-11 Glass, Frames and Mechanisms, Removal and Installation).

18. For additional removal information

Refer to: [Alpine Window](#) (501-11 Glass, Frames and Mechanisms, Removal and Installation).

19. For additional removal information

Refer to: [Windshield Header Panel Upper - 90](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

20. For additional removal information

Refer to: Fuel Tank Filler Pipe - INGENIUM I4 2.0L Petrol - PHEV (310-01 Fuel Tank and Lines - INGENIUM I4 2.0L Petrol/INGENIUM I4 2.0L Petrol - PHEV, Removal and Installation).

21. For additional removal information

Refer to: [Deployable Roof Ladder - Part number: VPLER0172](#) (102-03 Exterior, Removal and Installation).

22. For additional removal information

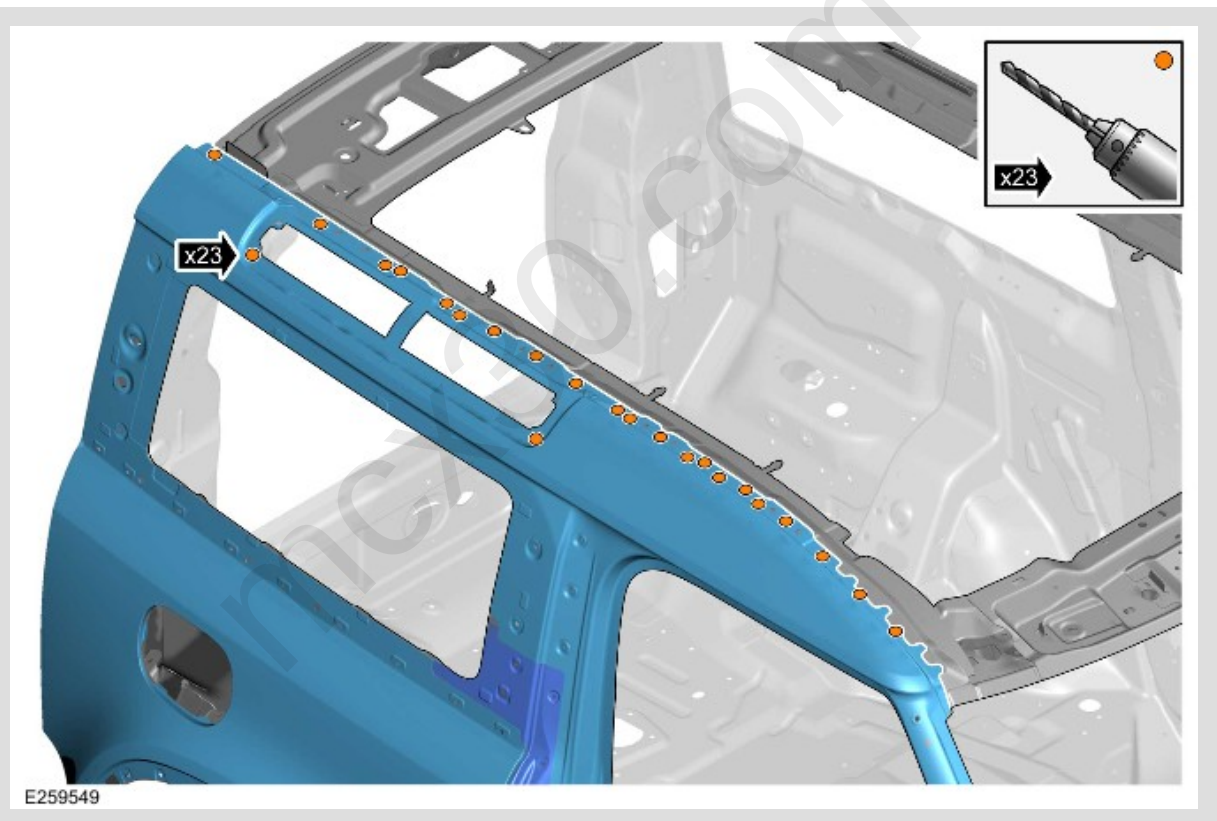
Refer to: [Fixed Side Steps and Side Tubes - Part number: 90: VPLEP0433, VPLEP0391, 110: VPLEP0434, VPLEP0392](#) (102-03 Exterior, Removal and Installation).

Refer to: [Deployable Side Steps - Part number: 110: VPLEP0393, VPLEP0394, VPLEP0422](#), (102-03 Exterior, Removal and Installation).

23. Release and position the floor carpet to one side.
24. Release and position the wiring harness to one side.
25. Remove the front door upper and lower hinges from the A-pillar.
26. Remove the front door striker from the B-pillar.

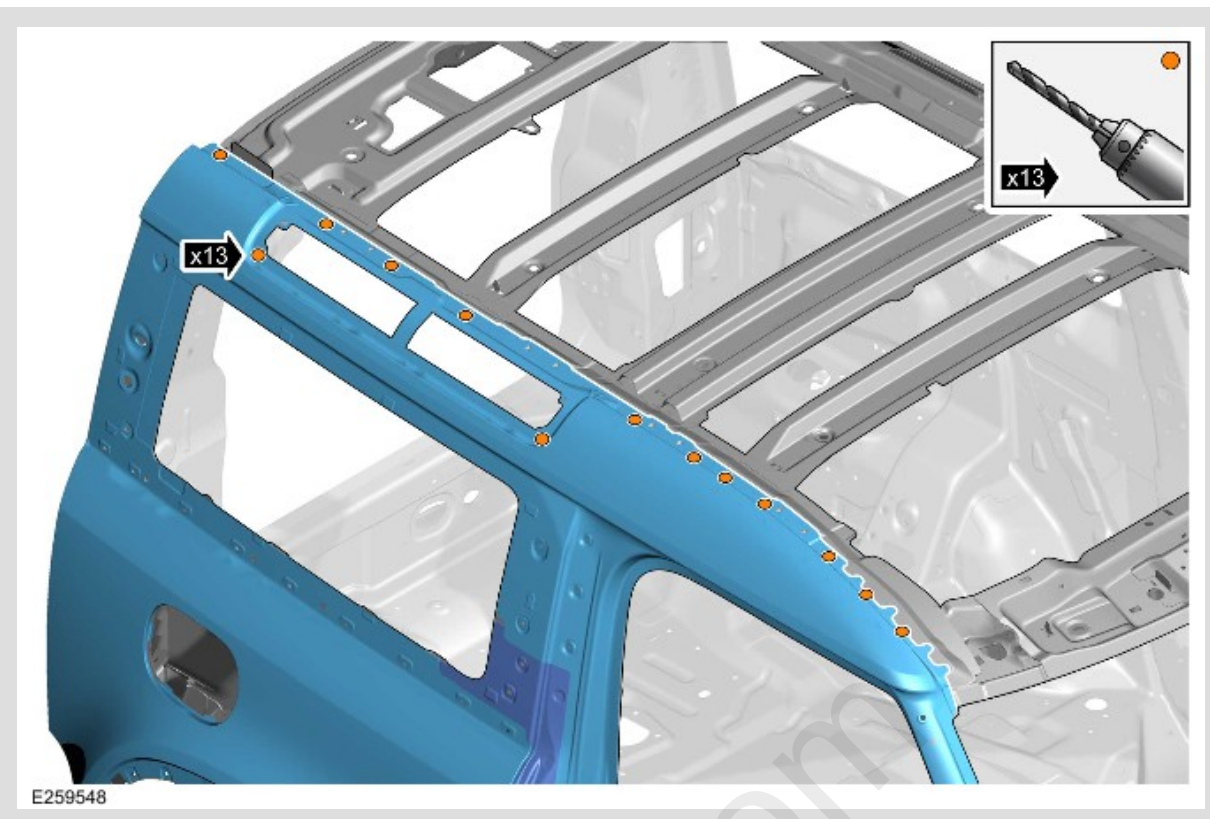
The following step(s) applies to:
Vehicles with roof opening panel

27.



Remove the Self piercing Rivets (SPRs) as indicated.

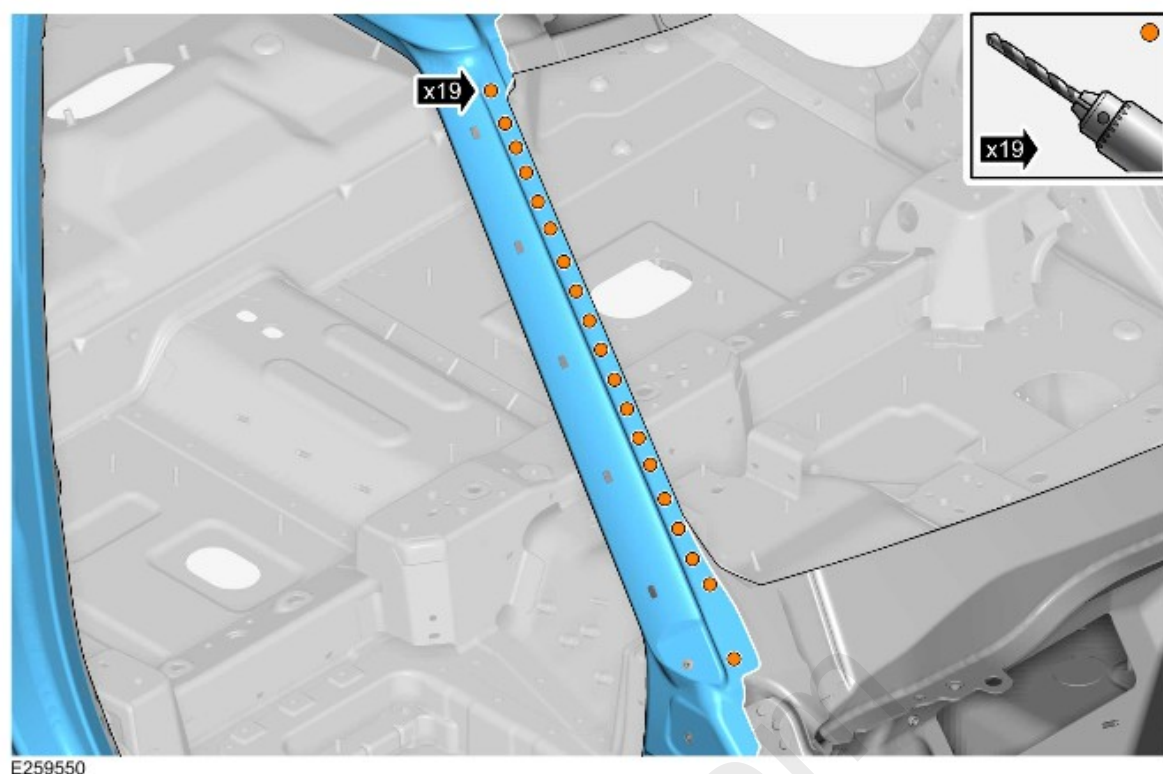
The following step(s) applies to:
Vehicles without roof opening panel



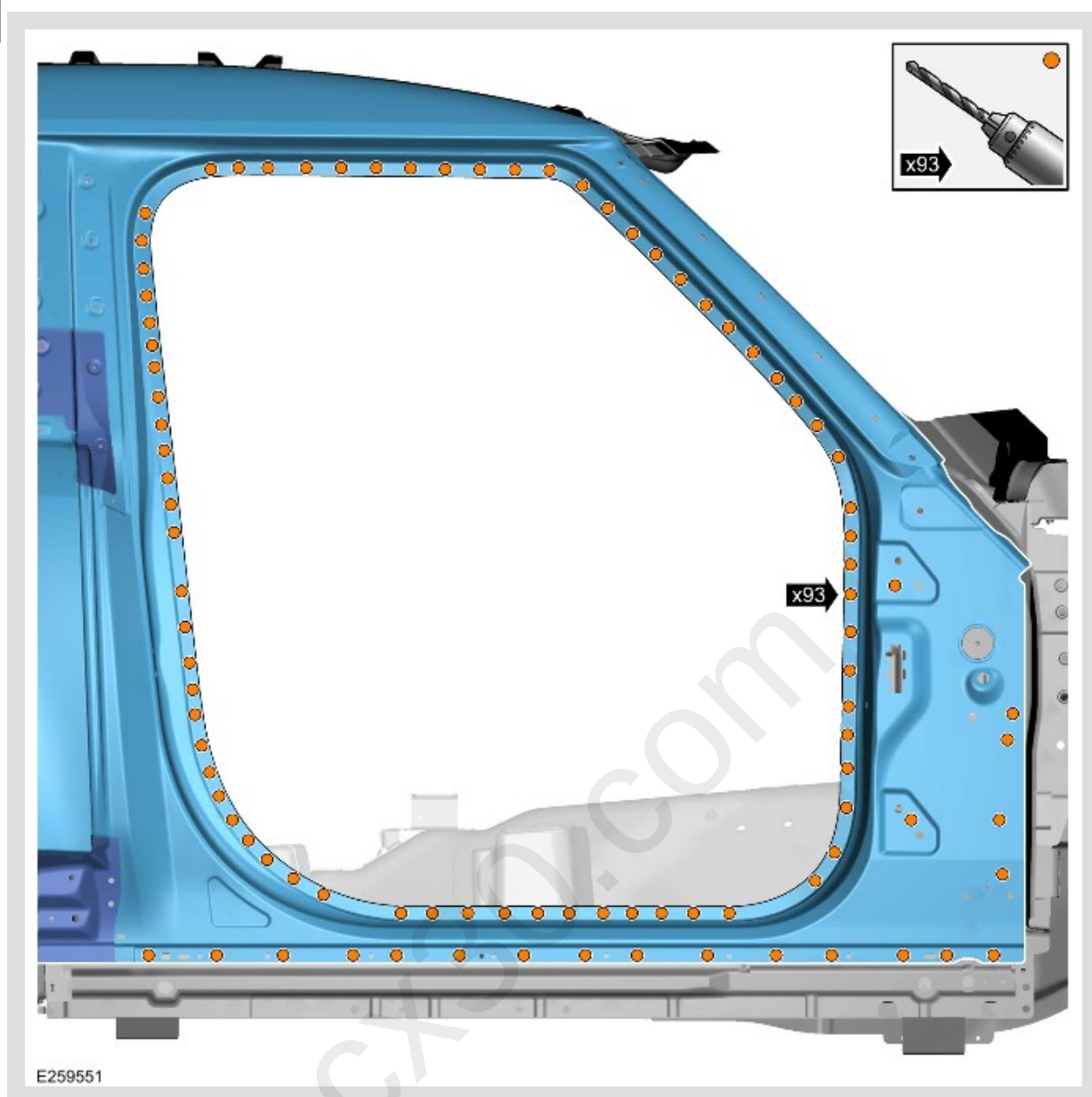
Remove the SPRs as indicated.

The following step(s) applies to:

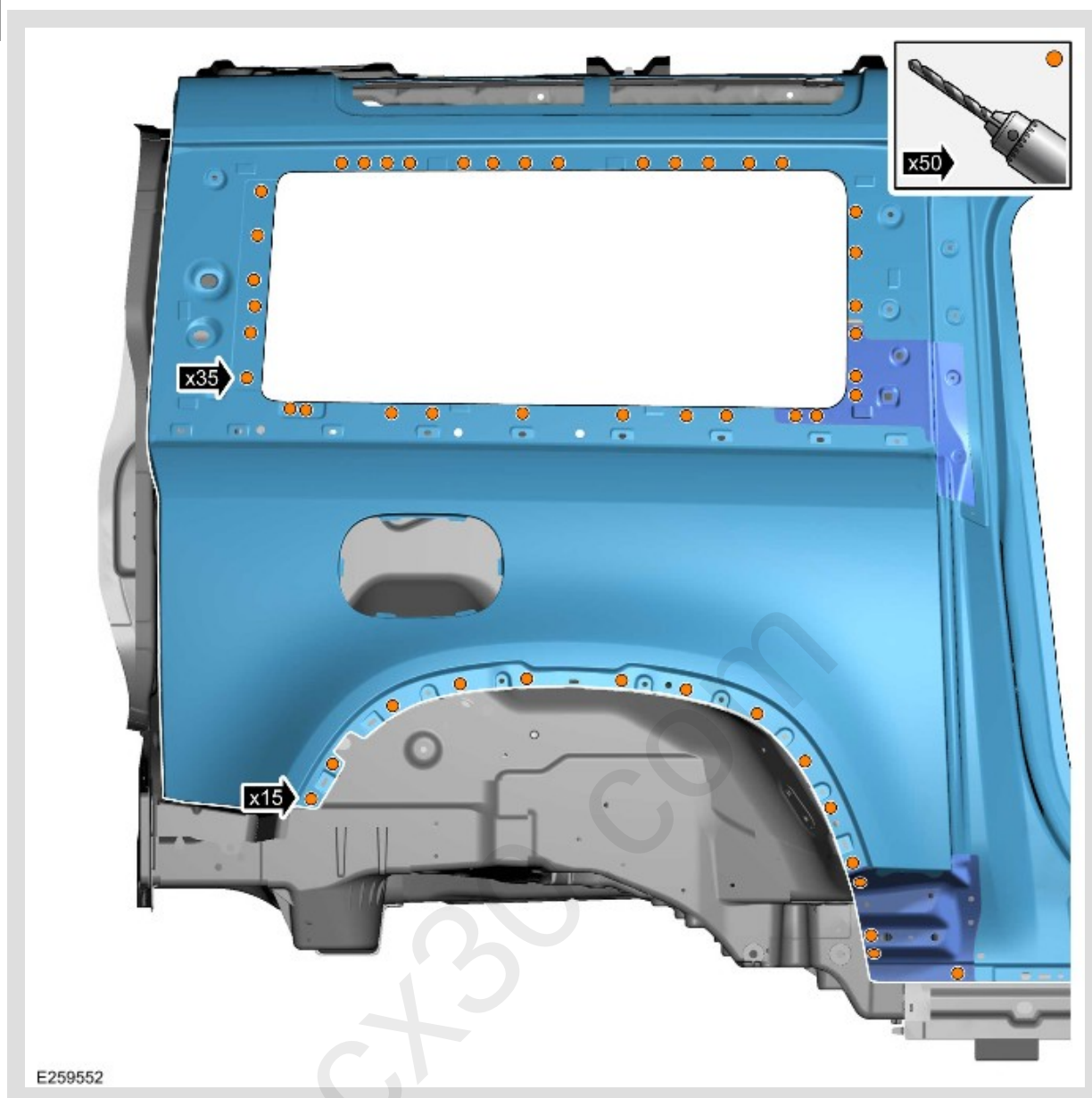
All vehicles



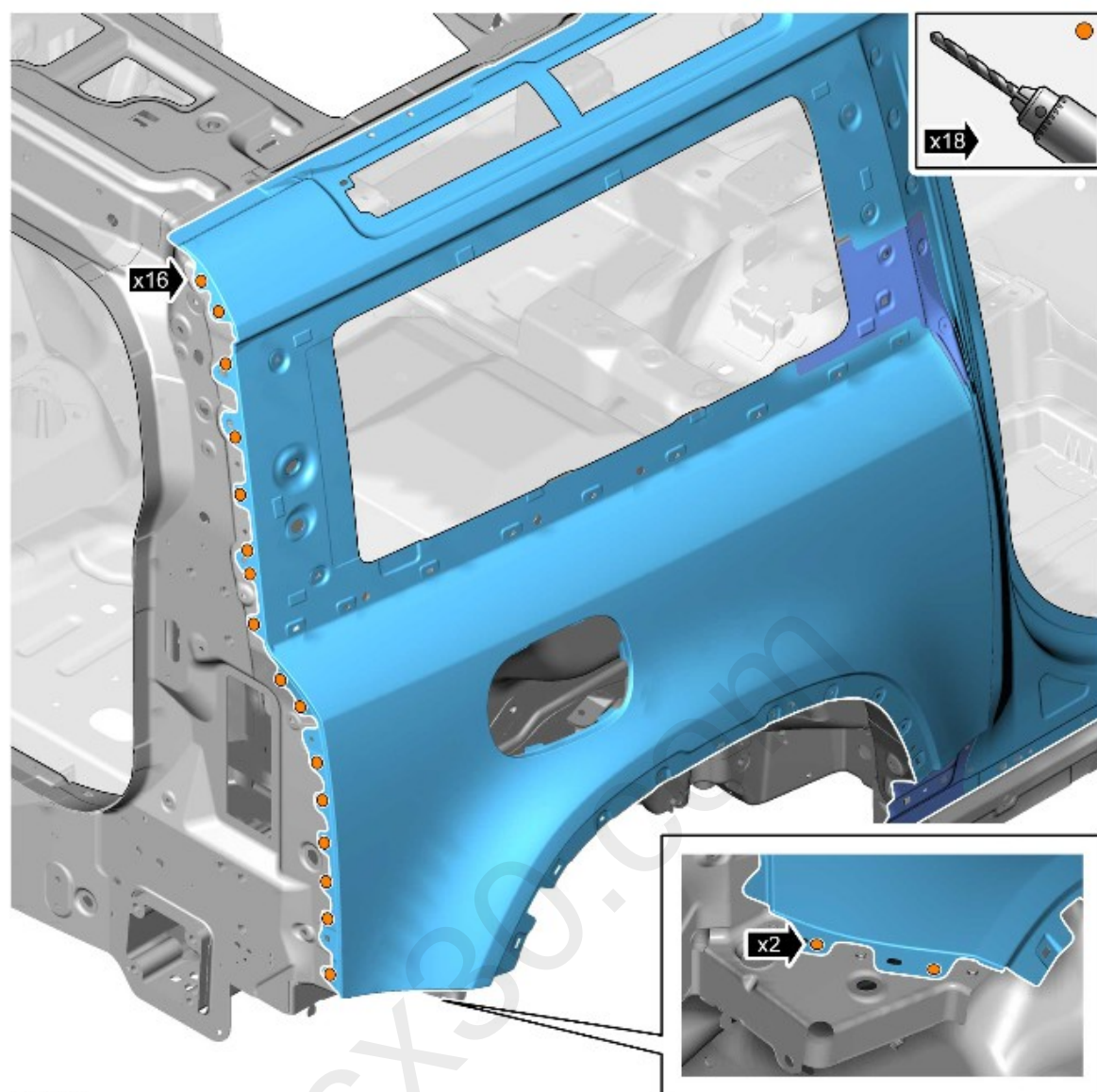
Remove the SPRs as indicated.



Remove the SPRs as indicated.



Remove the SPRs as indicated.

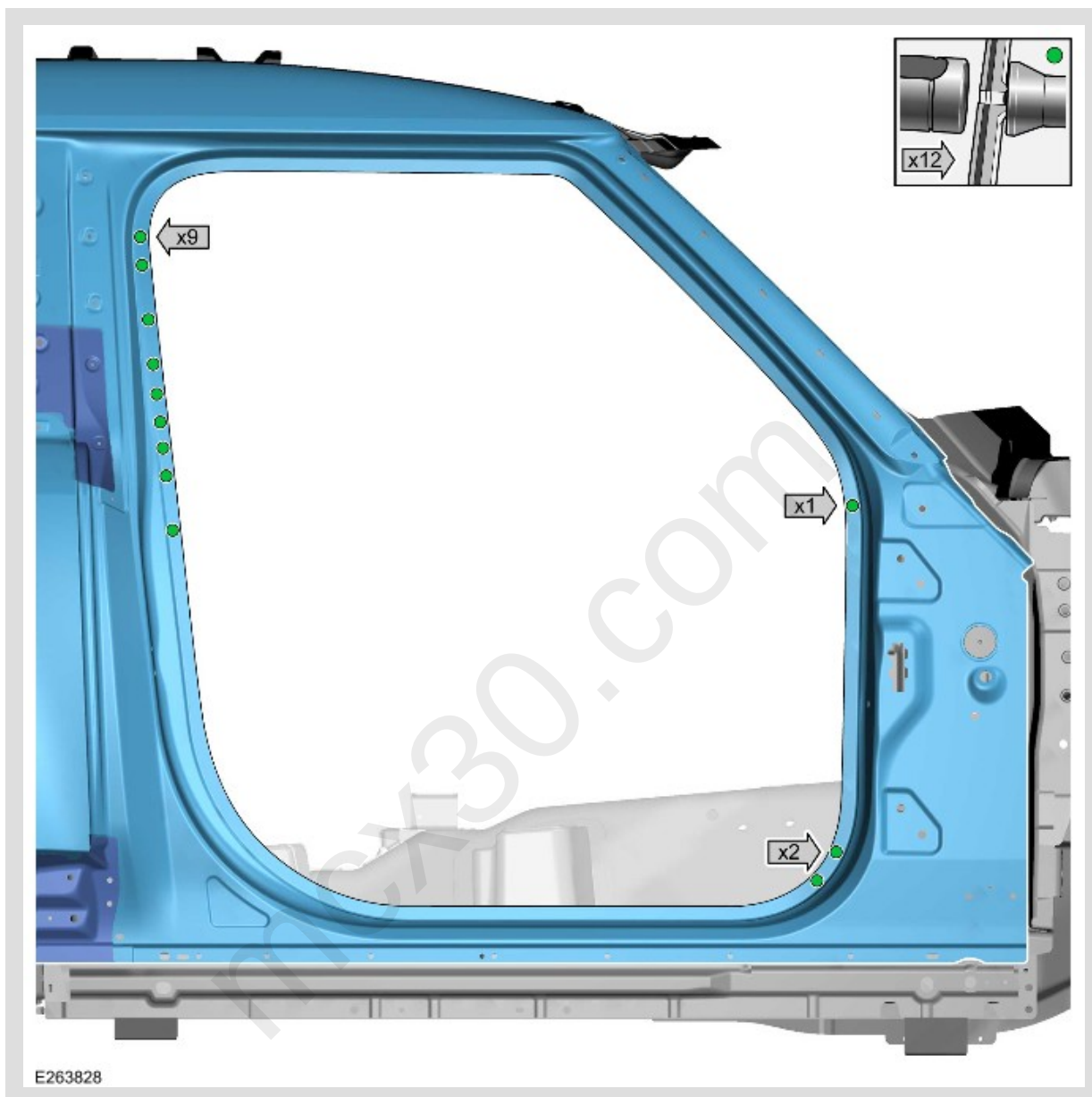


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Remove the SPRs as indicated.

NOTE:

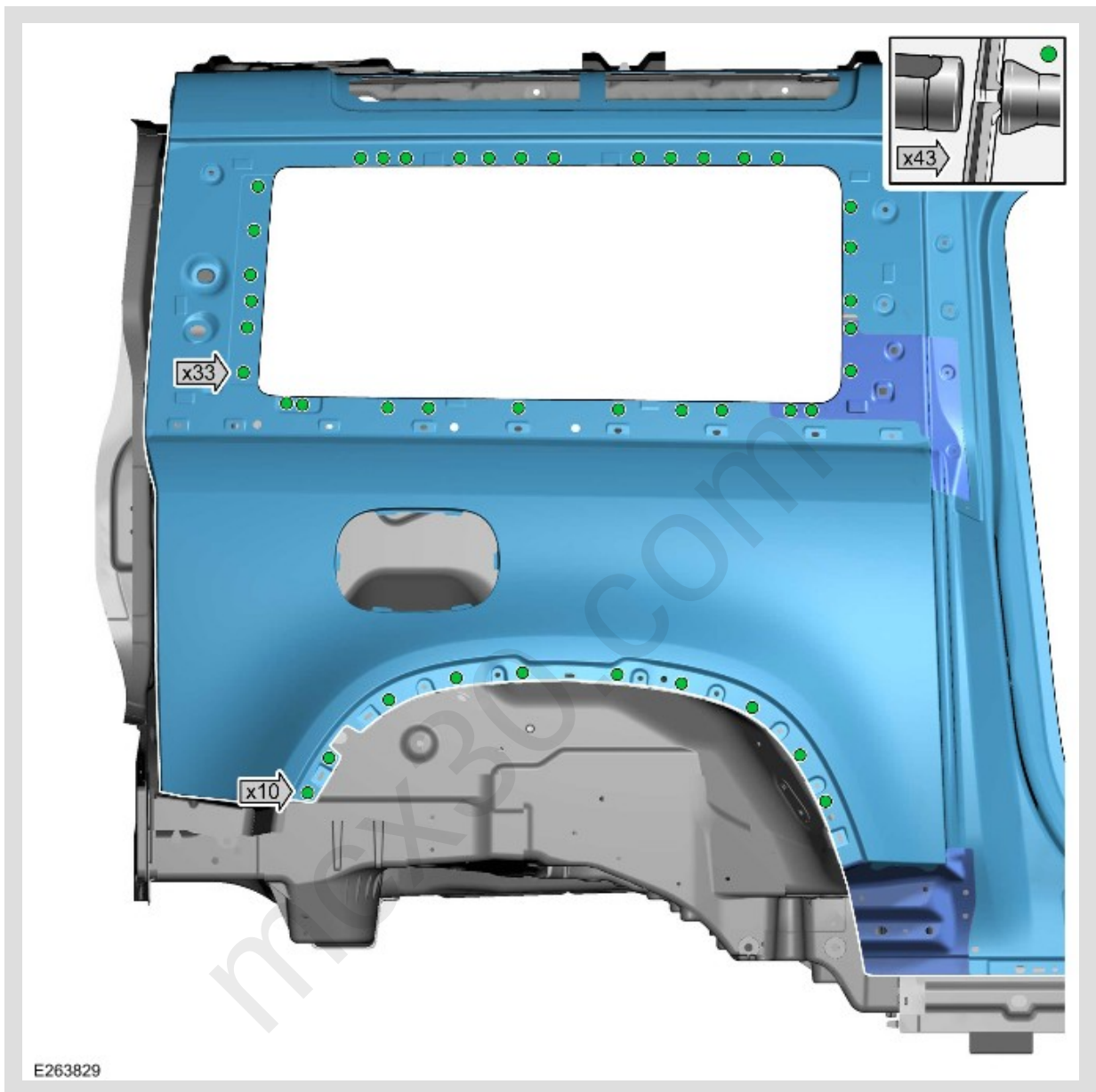
Where Flow Form Rivet (FFR) installation is indicated. Make sure that the panel is planished before removal.



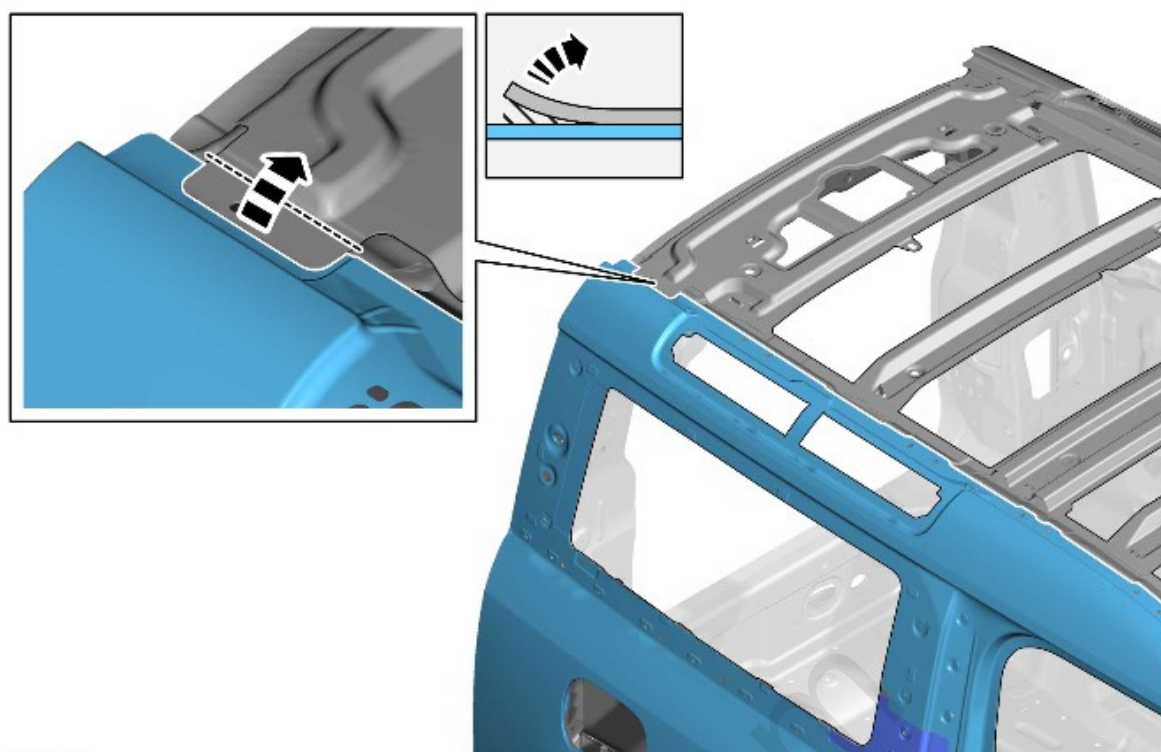
Planish the panel as indicated.

 NOTE:

Where Flow Form Rivet (FFR) installation is indicated. Make sure that the panel is planished before removal.



Planish the panel as indicated.



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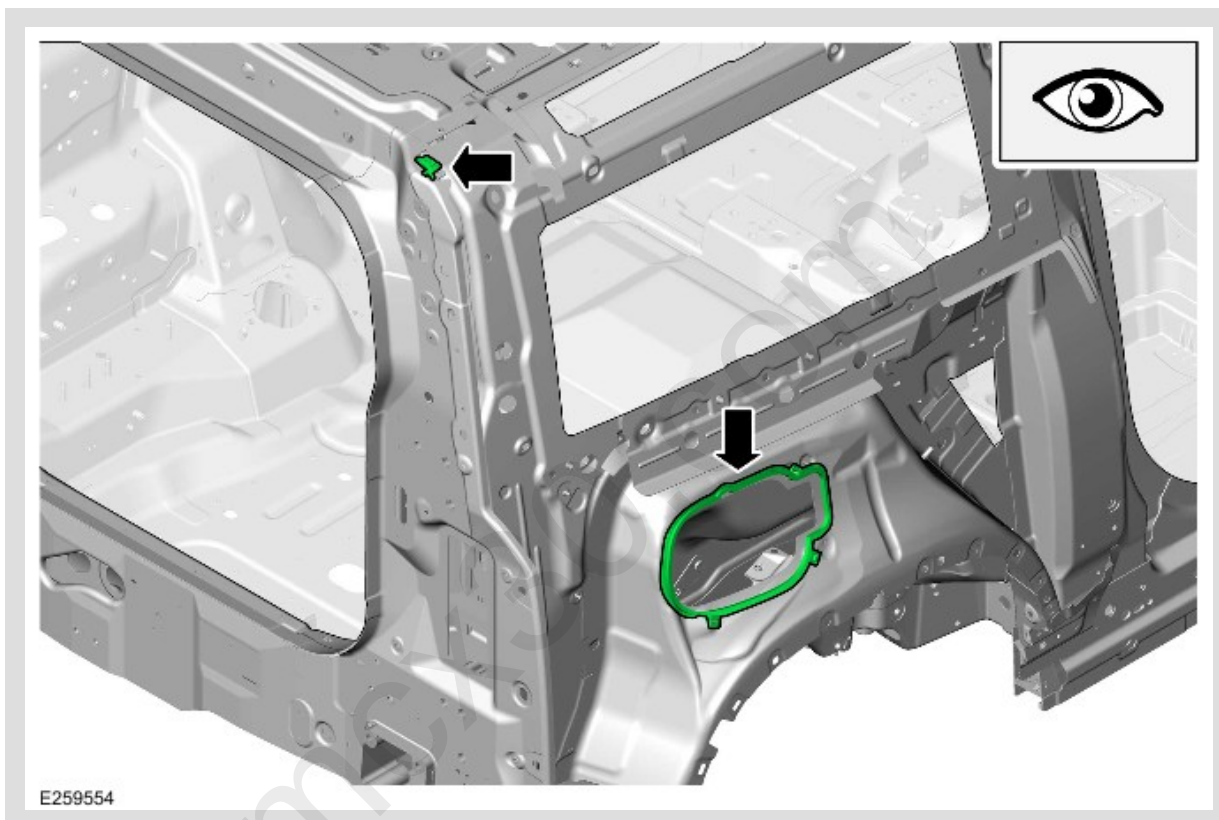
Build an expansion space as indicated.

**ⓘ CAUTION:**

This step will require the aid of another technician as the panel will be heavy.

△ NOTE:

Avoid where possible damaging the Noise, Vibration and Harshness (NVH) material located behind the side panel.



Carefully separate the joints and remove the side panel assembly.

INSTALLATION**The following step(s) applies to:**

All vehicles

ⓘ CAUTION:

Where structural adhesive is to be applied between surfaces it is essential compression is applied to the joints during the curing period.

NOTES:

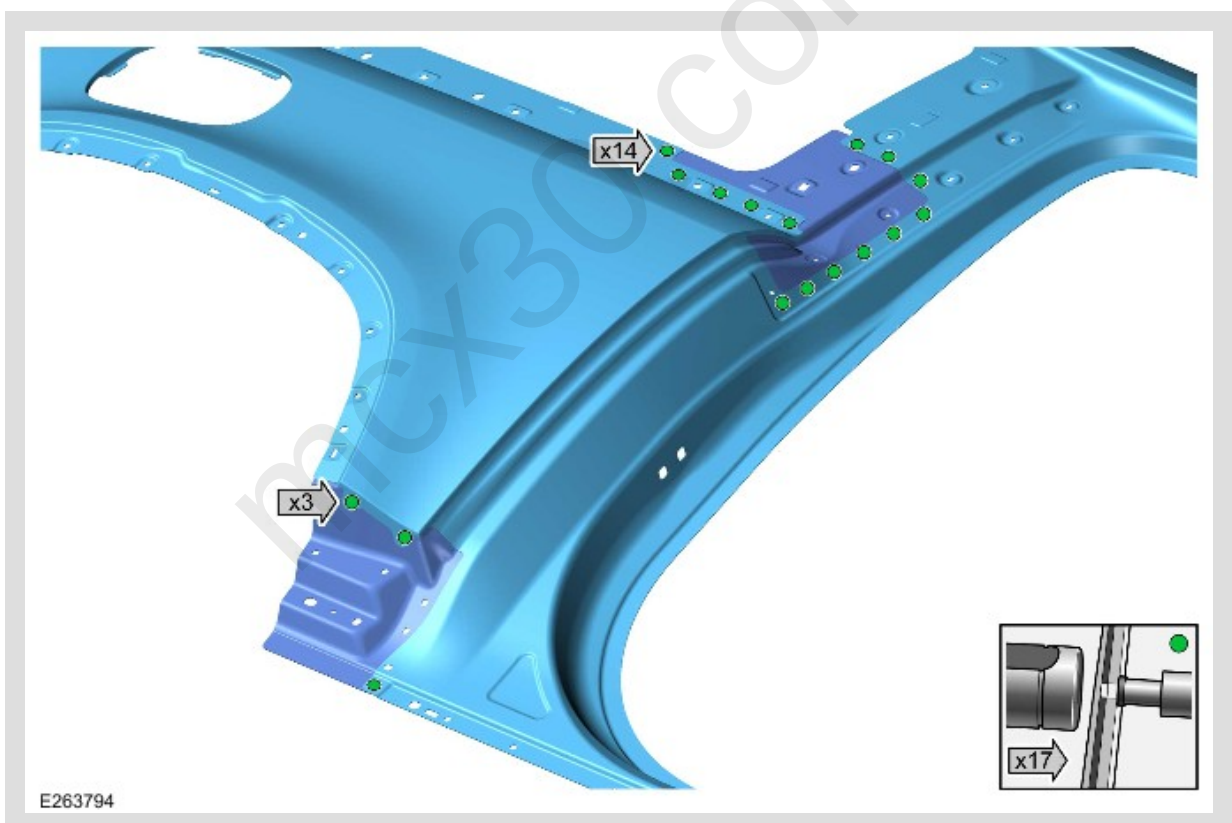
- Breakstem Fastener (BSF) installation involves using the JLR approved BSF installation tool and requires a hole diameter of 6.5 mm.
- Self Piercing Rivet (SPR) installation requires using the JLR approved SPR tool.
- Flow Form Rivet (FFR) installation requires using the JLR approved FFR installation tool.
- Refer to Adhesive, Fixings and Consumables for further information on Flow Form Rivets (FFRs).

1. Remove the rivet remnants.

2. Dress the flanges where necessary.

3. Offer up the new side panel upper and lower reinforcements and clamp into position. Check alignment, if correct proceed to next step, if not rectify and check the alignment again before proceeding.

4.



Punch calibrated holes where the Flow Form Rivets (FFRs) are to be installed as indicated.

5. Remove the new side panel upper and lower reinforcements.

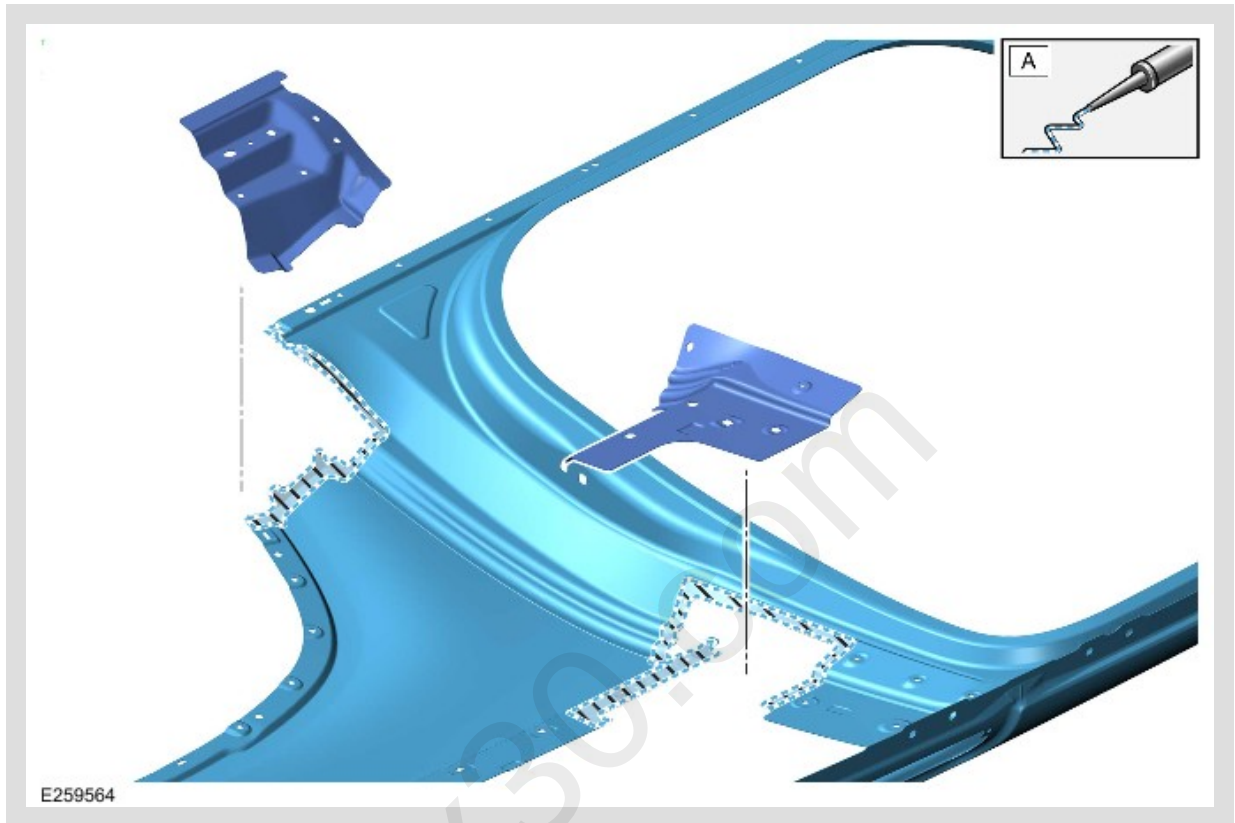
6. Dress the flanges where necessary.

7. Clean and prepare the panel surfaces.

8.

 NOTE:

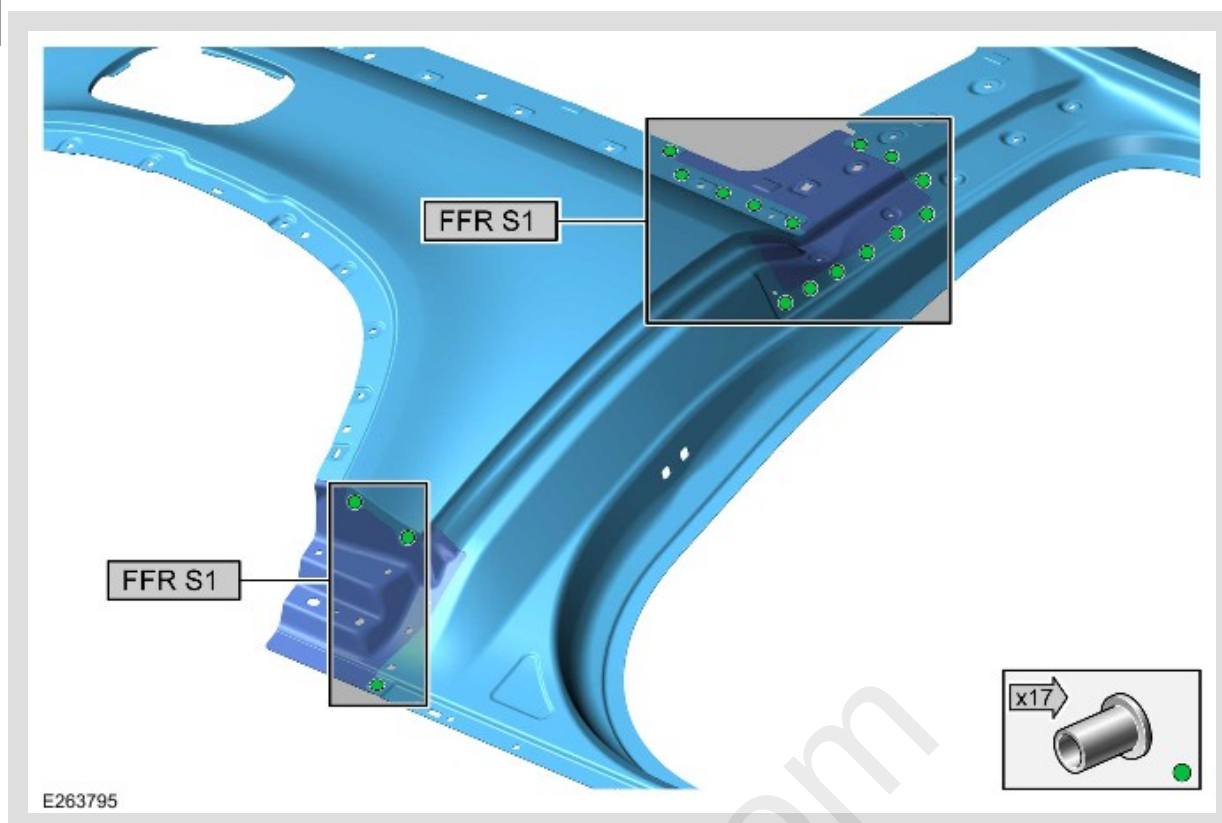
Make sure a continuous bead of adhesive surrounds the fixing holes.



Apply a 5 mm zig zag bead of JLR recommended bonding material as indicated.

9. Offer up the new side panel upper and lower reinforcements and clamp into position. Check alignment, if correct proceed to next step, if not rectify and check the alignment again before proceeding.

10.



Install the FFRs as indicated.

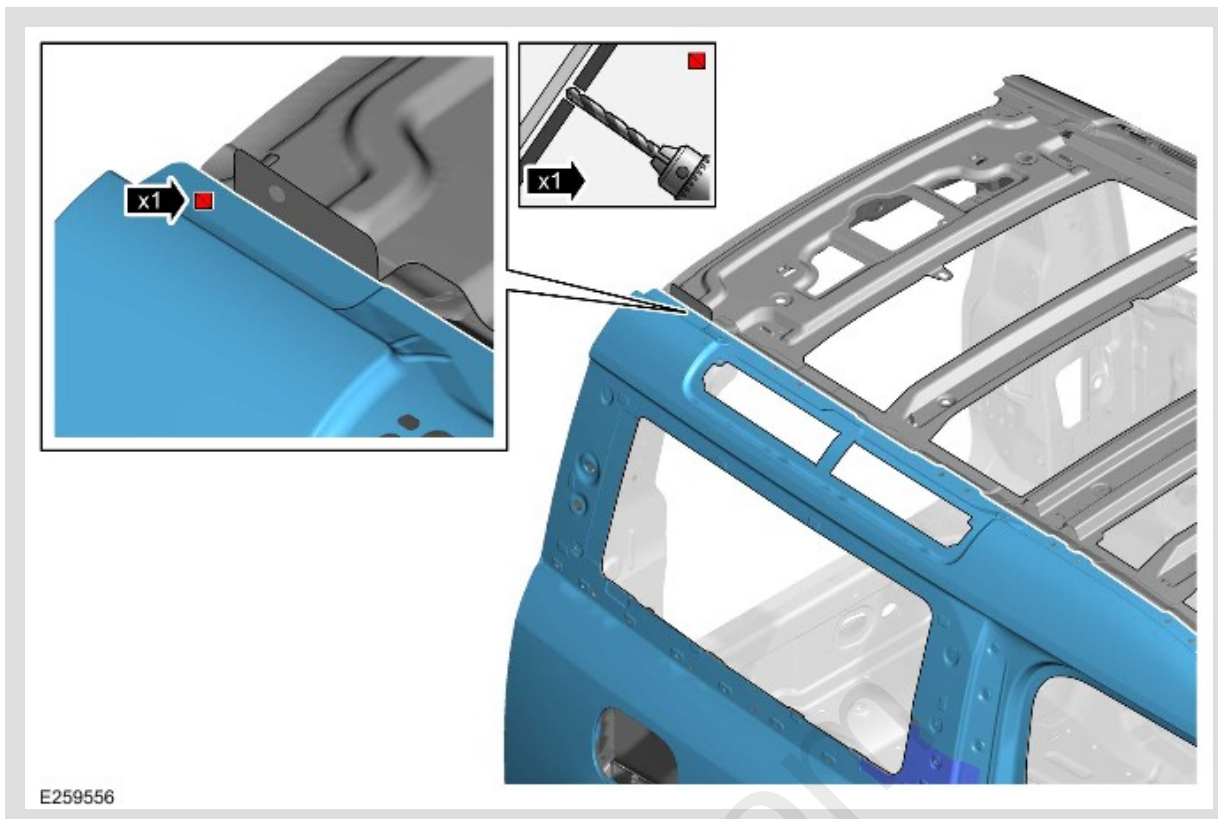
11.



⚠ CAUTION:

This step will require the aid of another technician as the panel will be heavy.

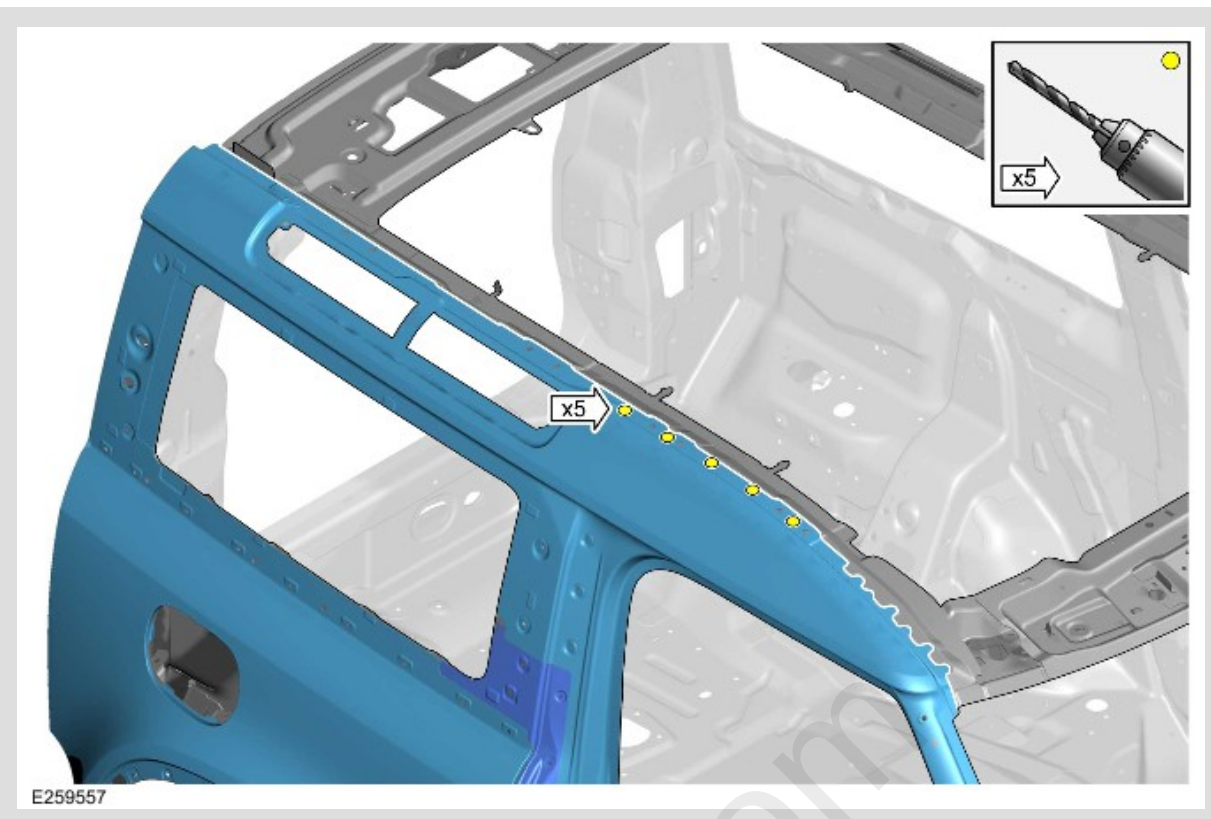
Offer up the new side panel assembly and clamp into position. Check alignment, if correct proceed to next step, if not rectify and check the alignment again before proceeding.



Drill a hole where the Metal Inert Gas (MIG) plug weld is to be installed as indicated.

The following step(s) applies to:

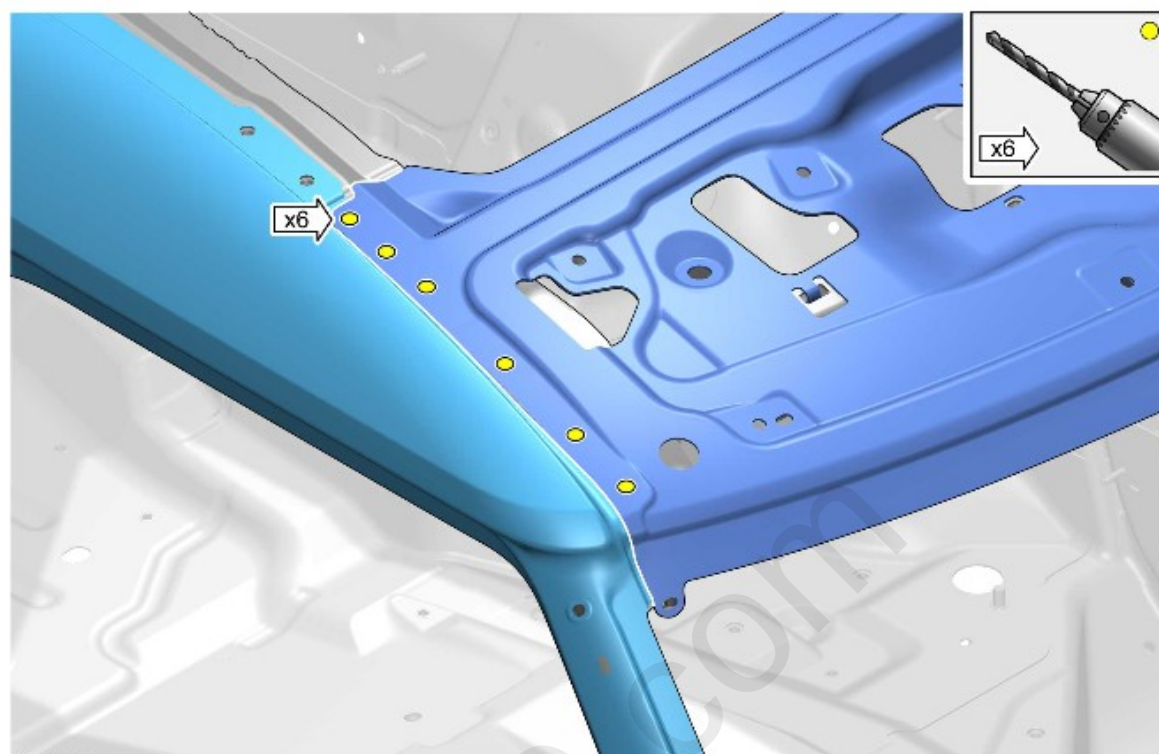
Vehicles with roof opening panel



Drill holes where the Breakstem Fasteners (BSFs) are to be installed as indicated.

NOTE:

When installing the side panel in conjunction with the windshield header panel upper.

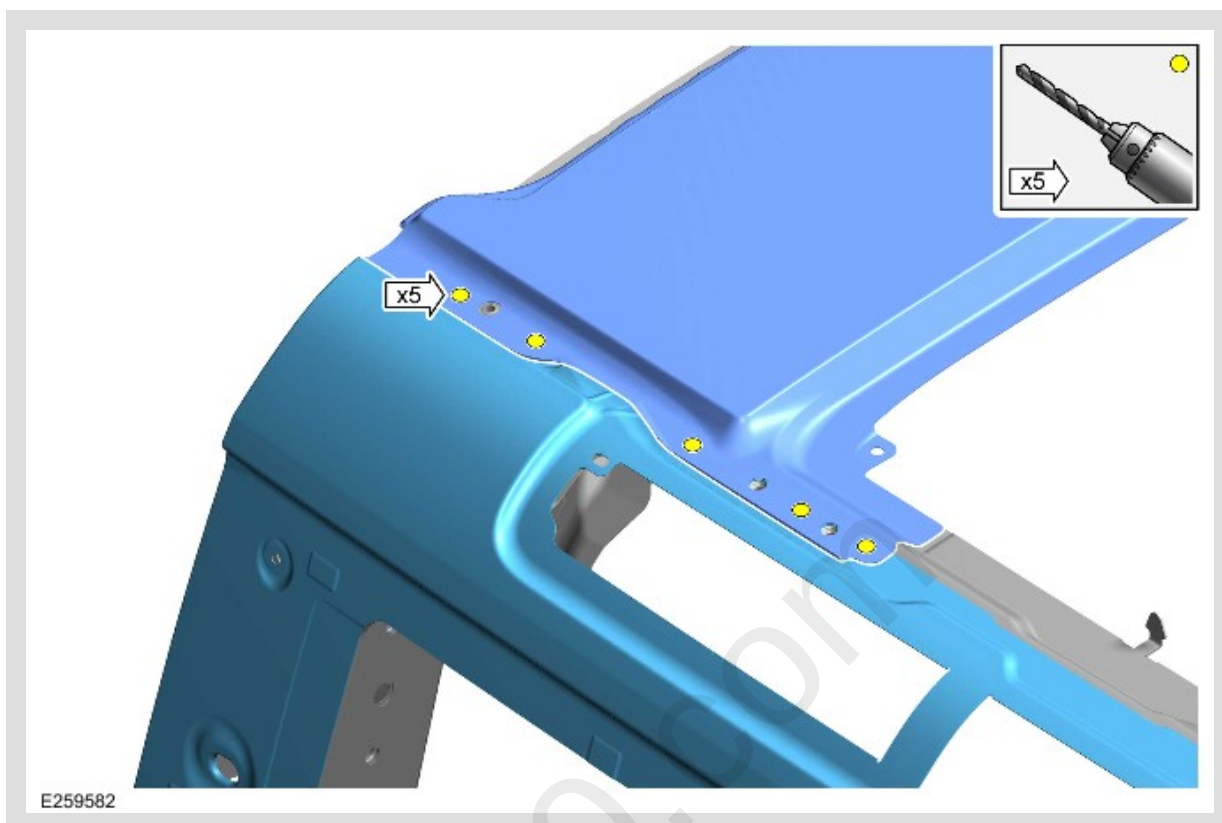


Drill holes where the BSFs are to be installed as indicated.

15.

 NOTE:

When installing the side panel in conjunction with the rear roof panel.



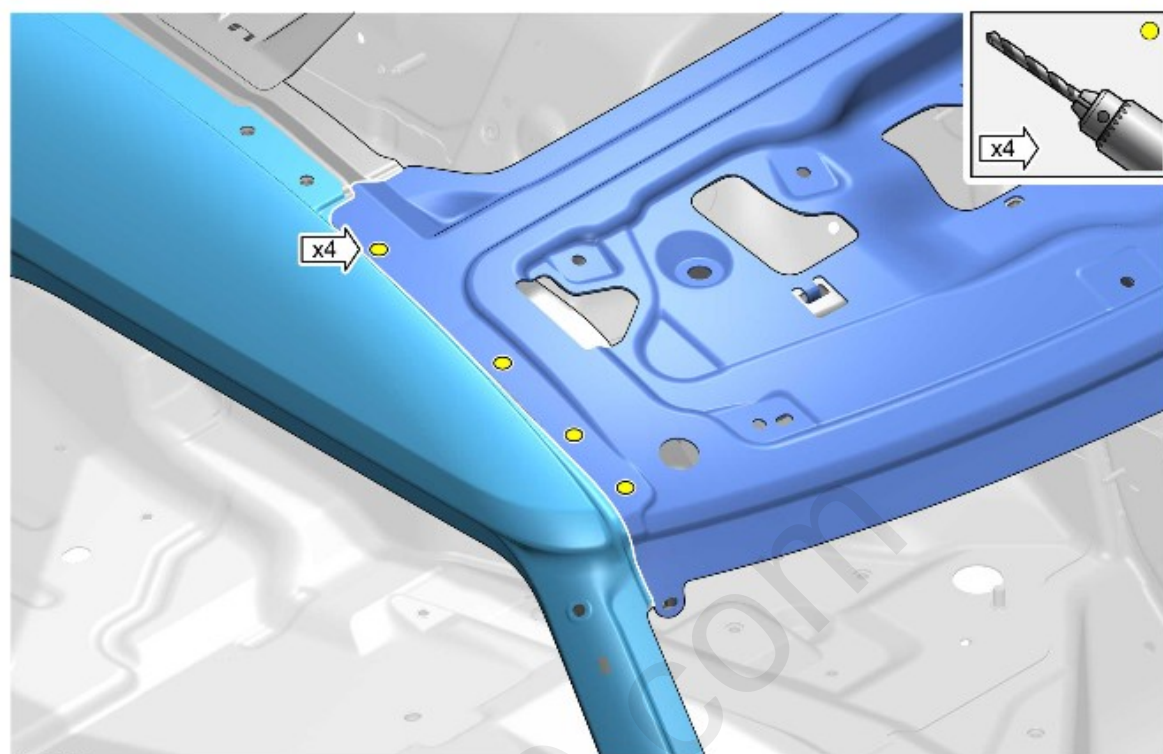
Drill holes where the BSFs are to be installed as indicated.

The following step(s) applies to:

Vehicles without roof opening panel

NOTE:

When installing the side panel in windshield header panel upper.

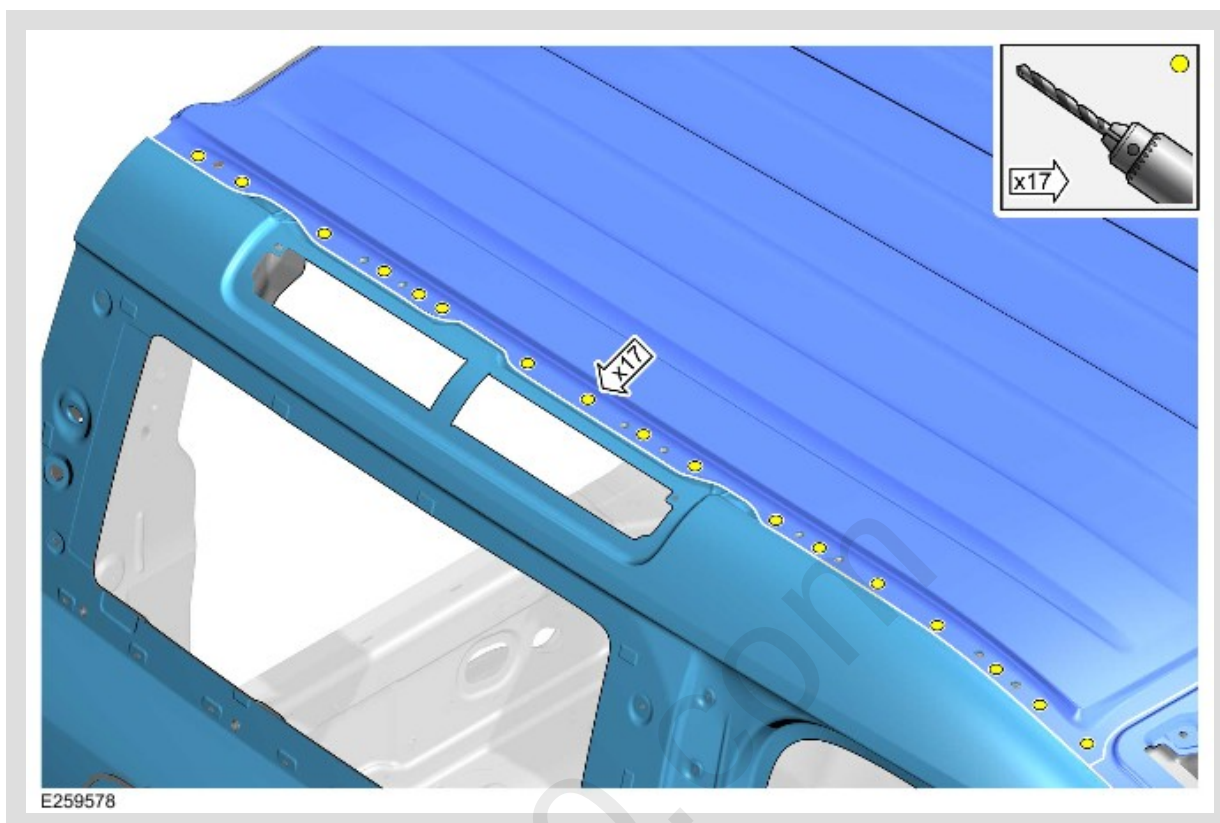


Drill holes where the BSFs are to be installed as indicated.

17.

 NOTE:

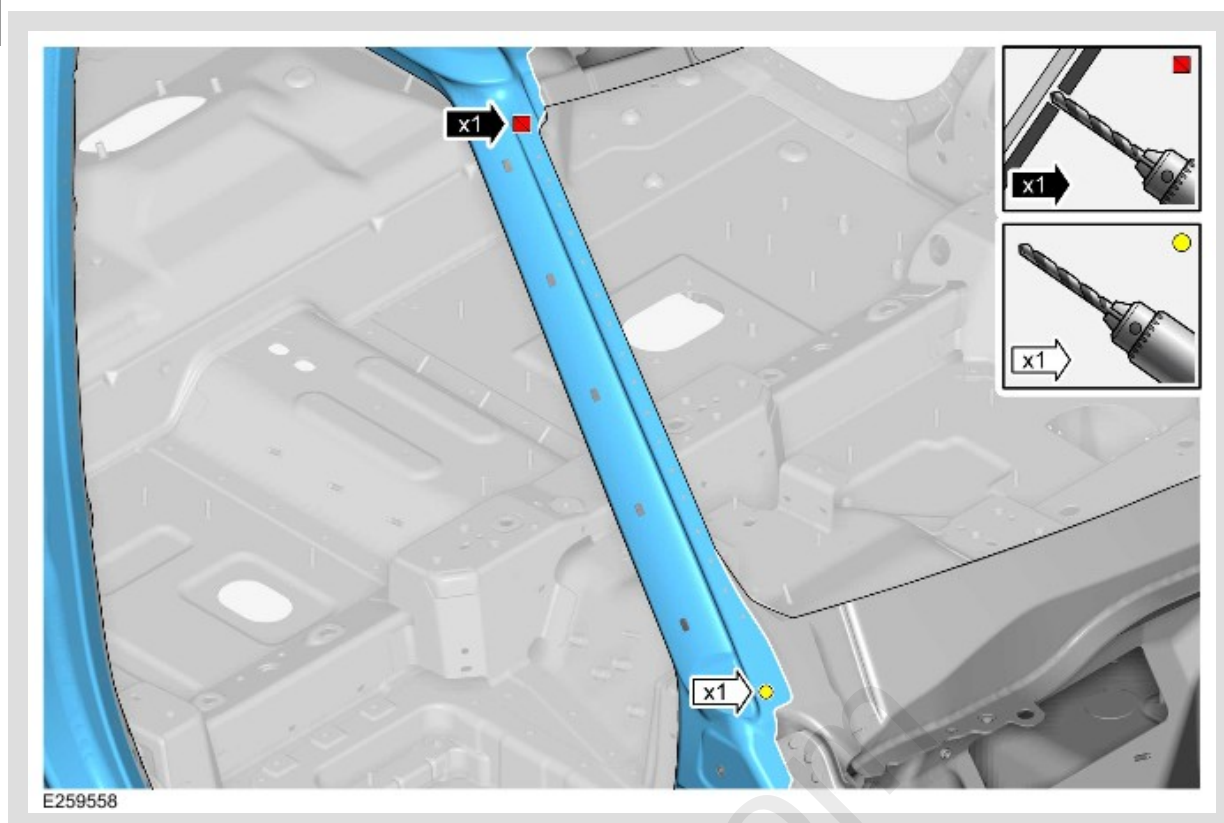
When installing the side panel in conjunction with the roof panel.



Drill holes where the BSFs are to be installed as indicated.

The following step(s) applies to:

All vehicles



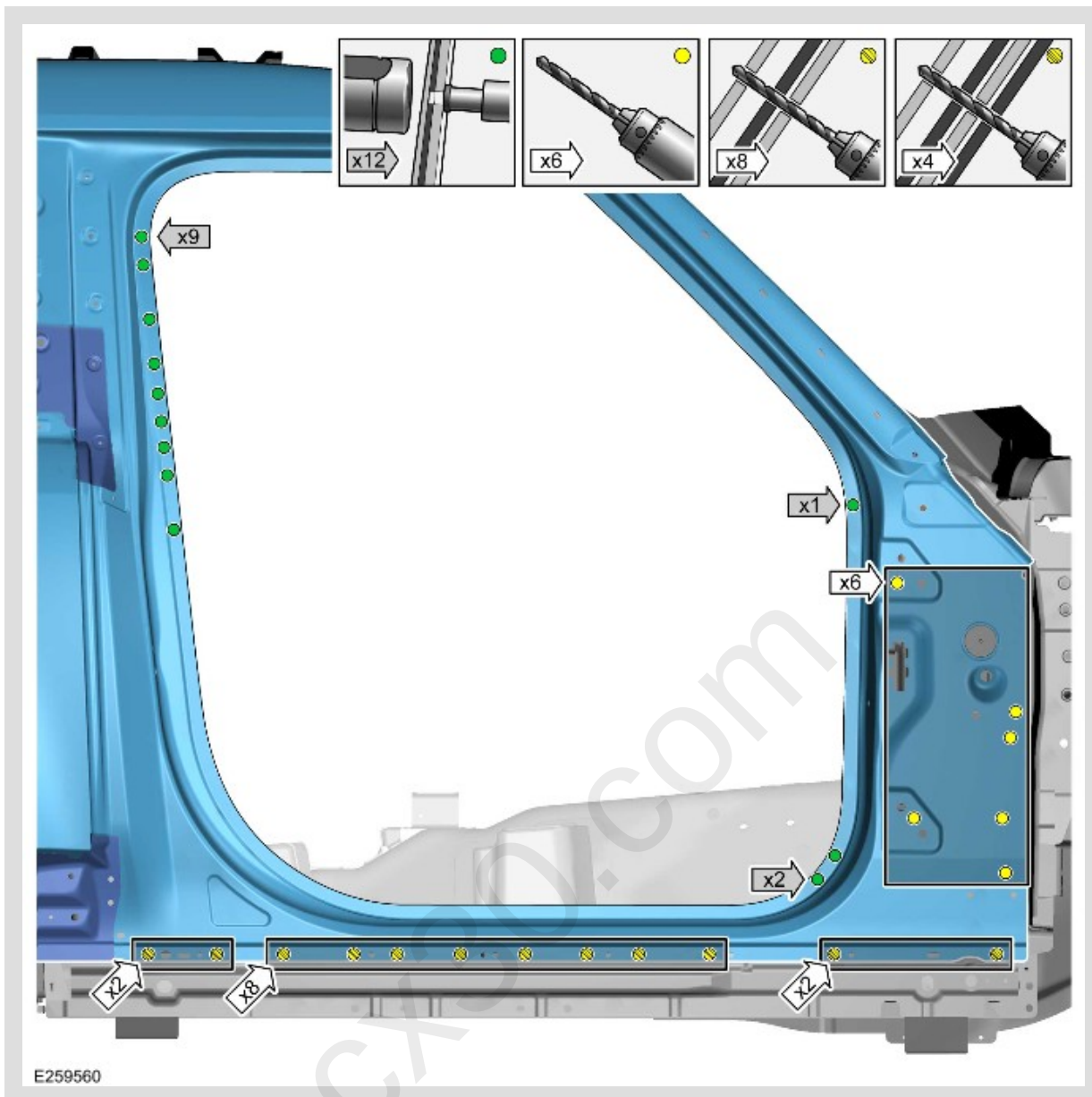
Drill holes where the BSF and MIG plug welds are to be installed as indicated.

 NOTE:

Make sure that the JLR recommended countersink tool is used for this step.



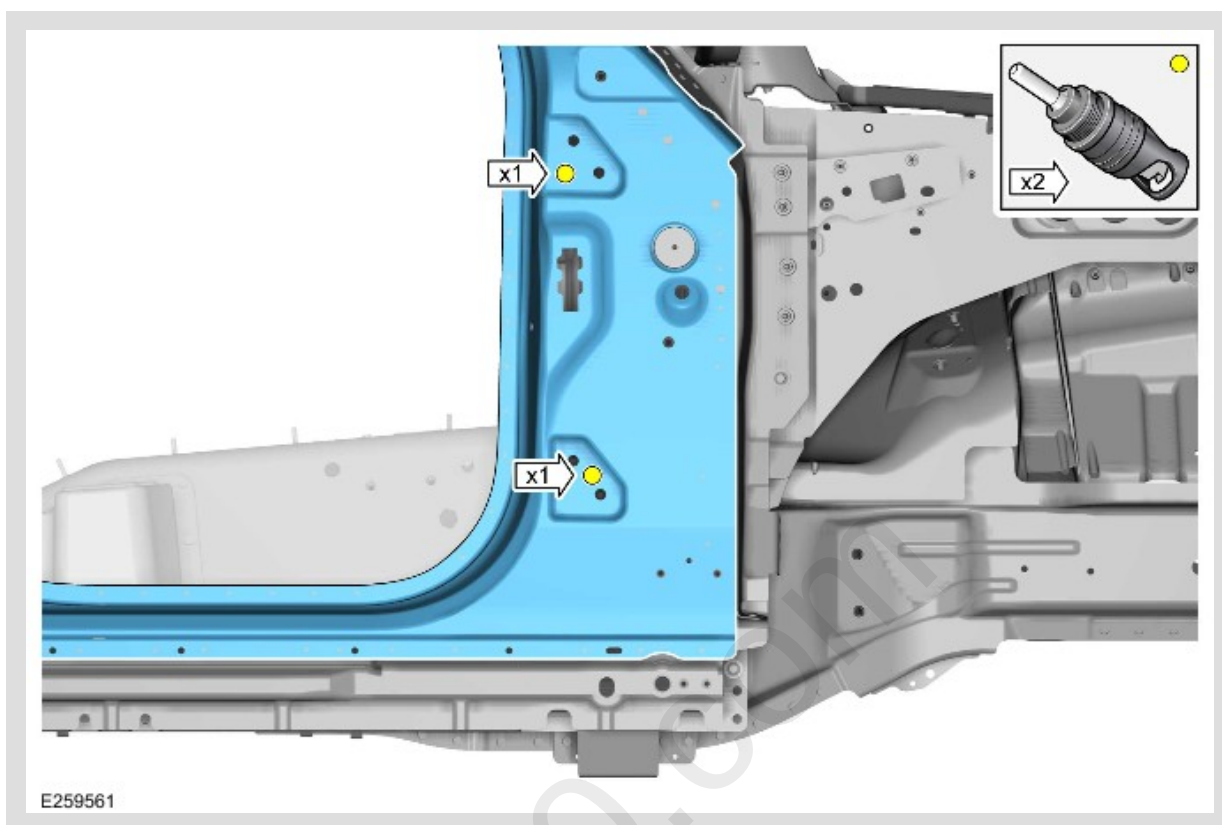
Countersink the hole to a depth of 2 mm as indicated.



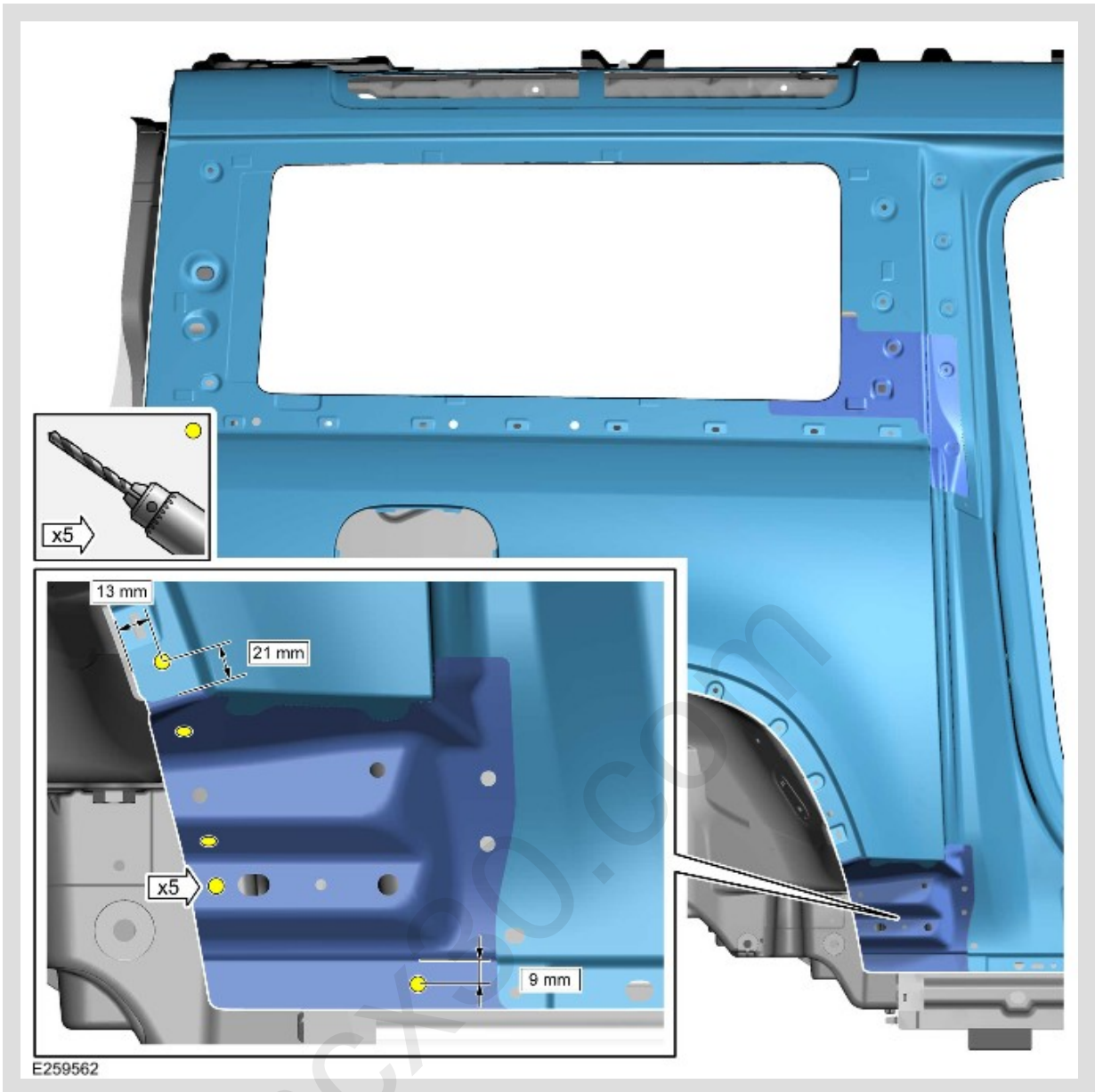
Drill holes where the BSFs are to be installed as indicated. Punch calibrated holes where the FFRs are to be installed as indicated.

 NOTE:

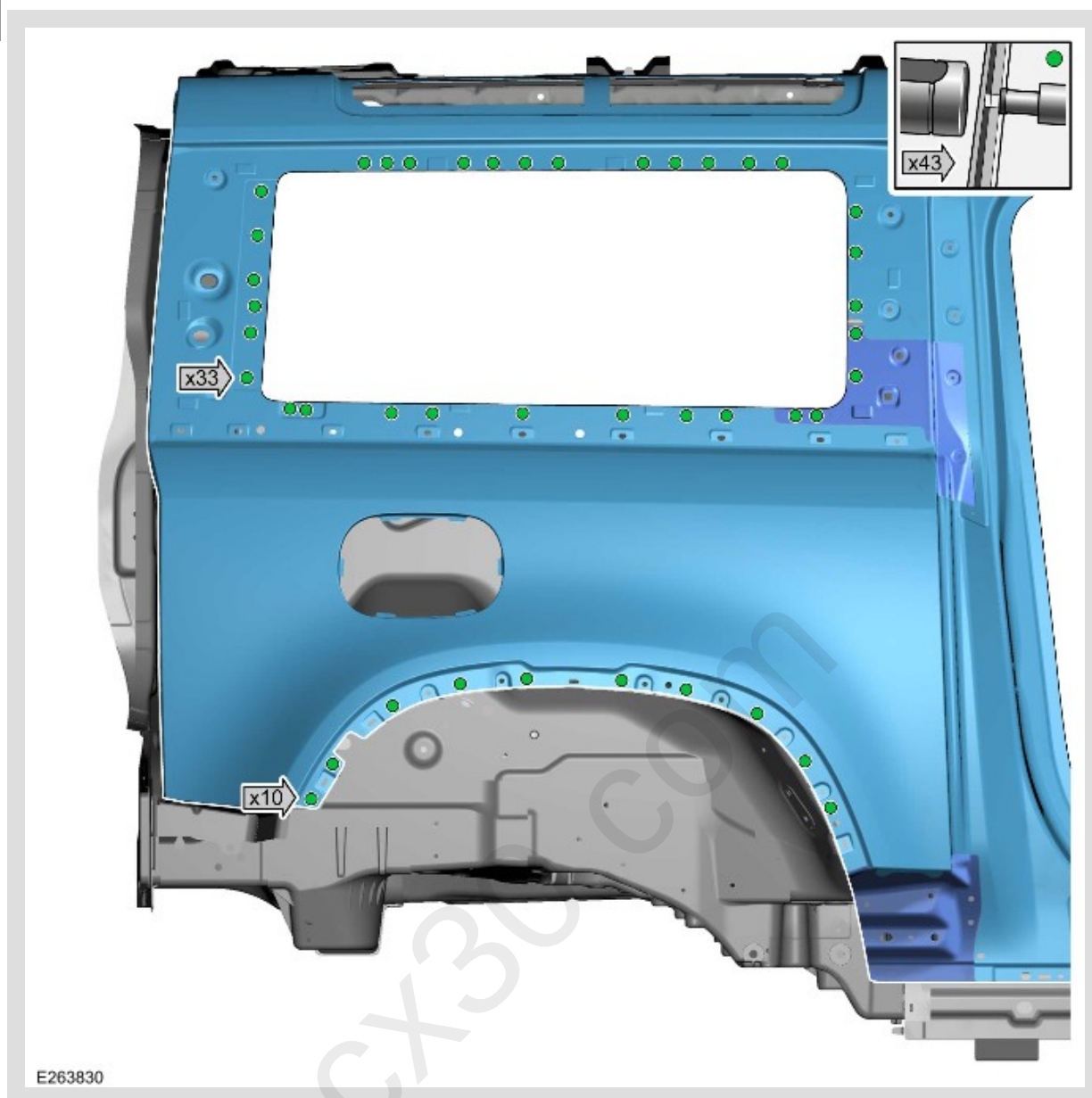
Make sure that the JLR recommended countersink tool is used for this step.



Countersink the hole to a depth of 2 mm as indicated.

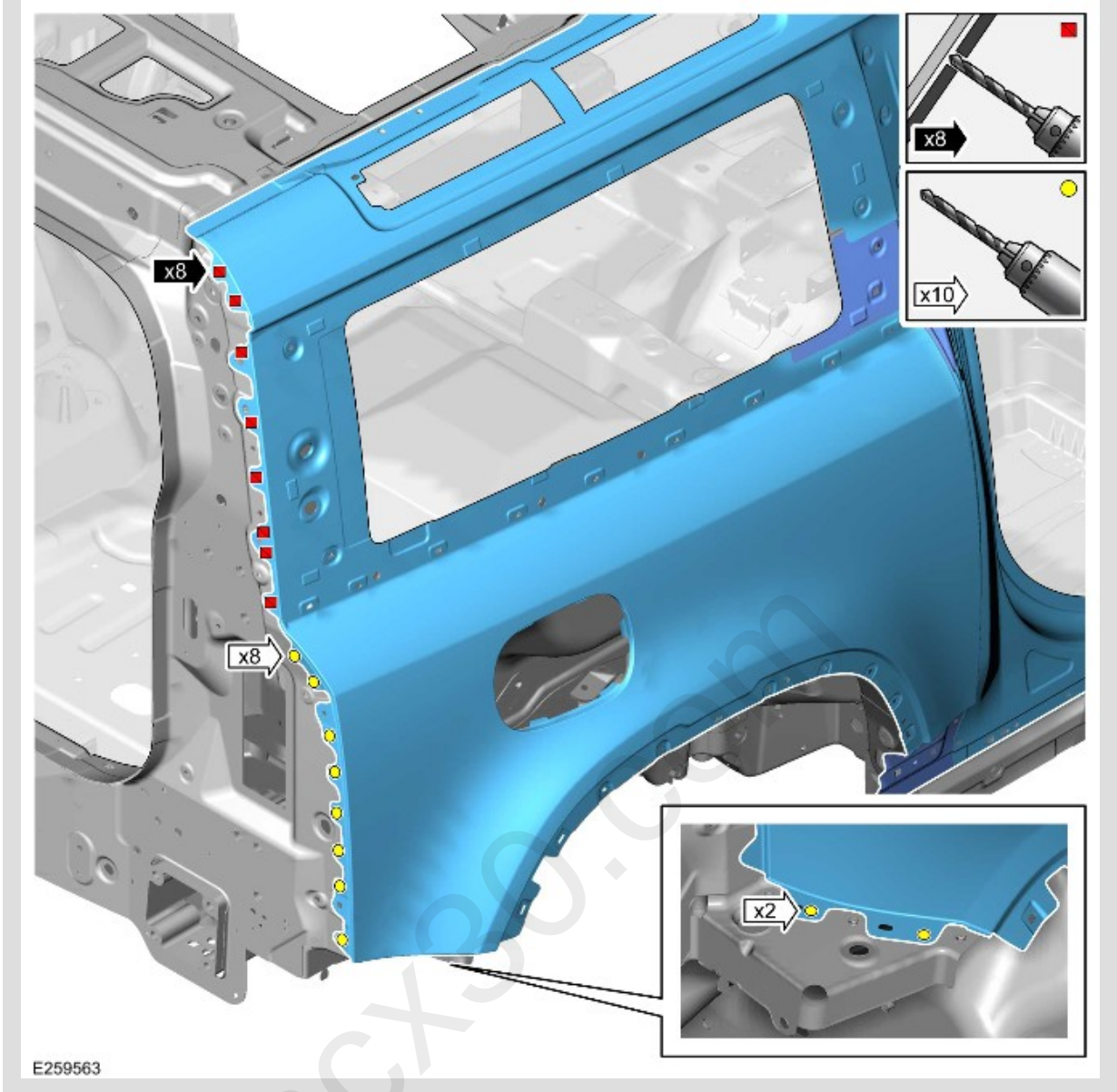


Drill holes where the BSFs are to be installed as indicated.



Punch calibrated holes where the FFRs are to be installed as indicated.

24.



Drill holes where the BSFs and MIG plug welds are to be installed as indicated.

25.



ⓘ CAUTION:

This step will require the aid of another technician as the panel will be heavy.

Remove the new side panel assembly.

26.

Deburr the drilled holes.

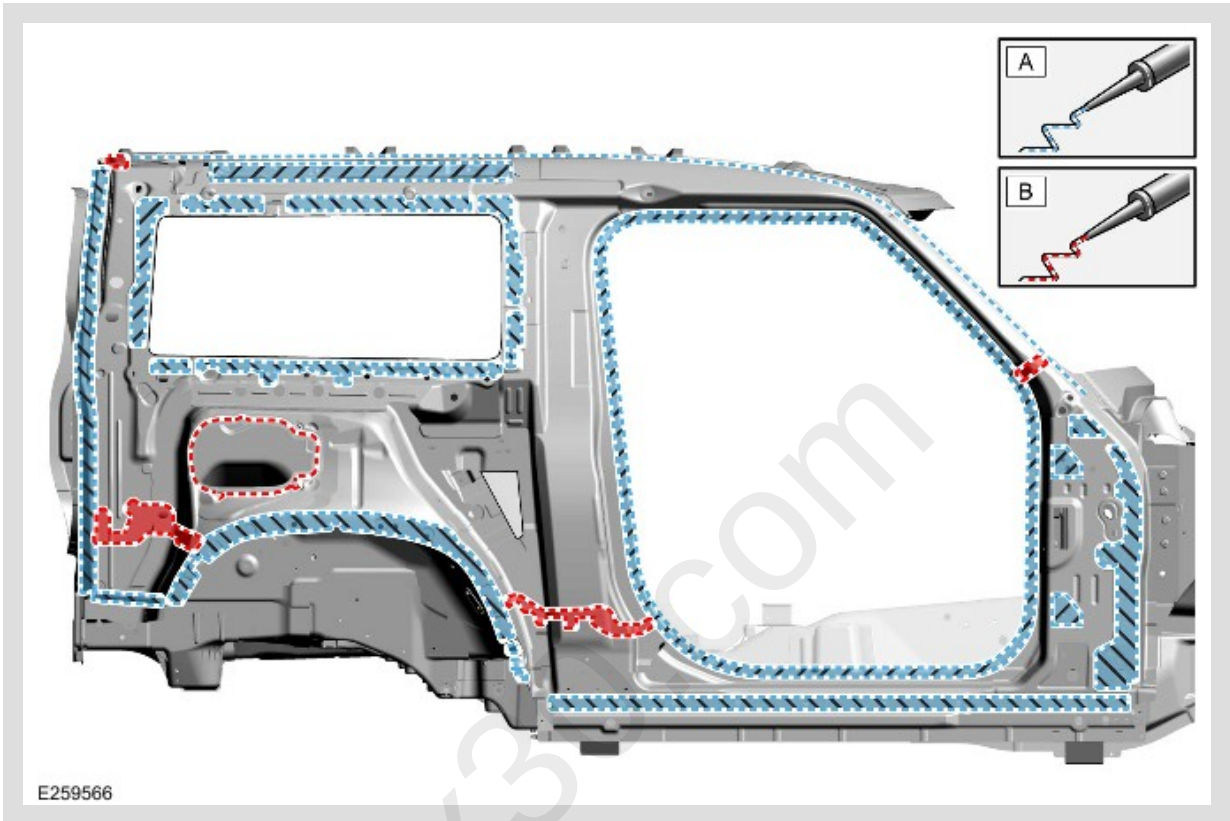
27.

Clean and prepare the panel surfaces including the NVH material.

NOTE:

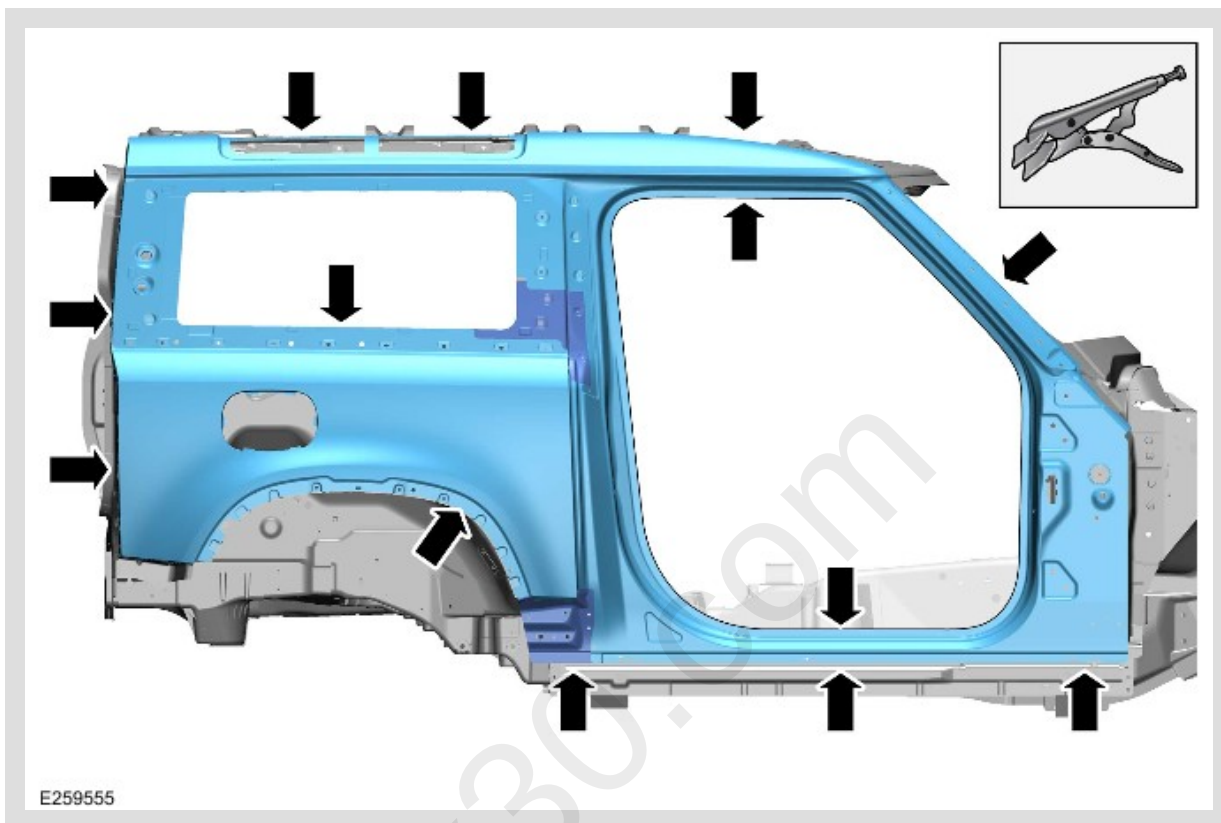
Make sure a continuous bead of adhesive surrounds the fixing holes.

- A: Apply a 5 mm zig zag bead of JLR recommended bonding material as indicated.
- B: Apply a 5 mm zig zag bead of JLR recommended flexible sealant as indicated.



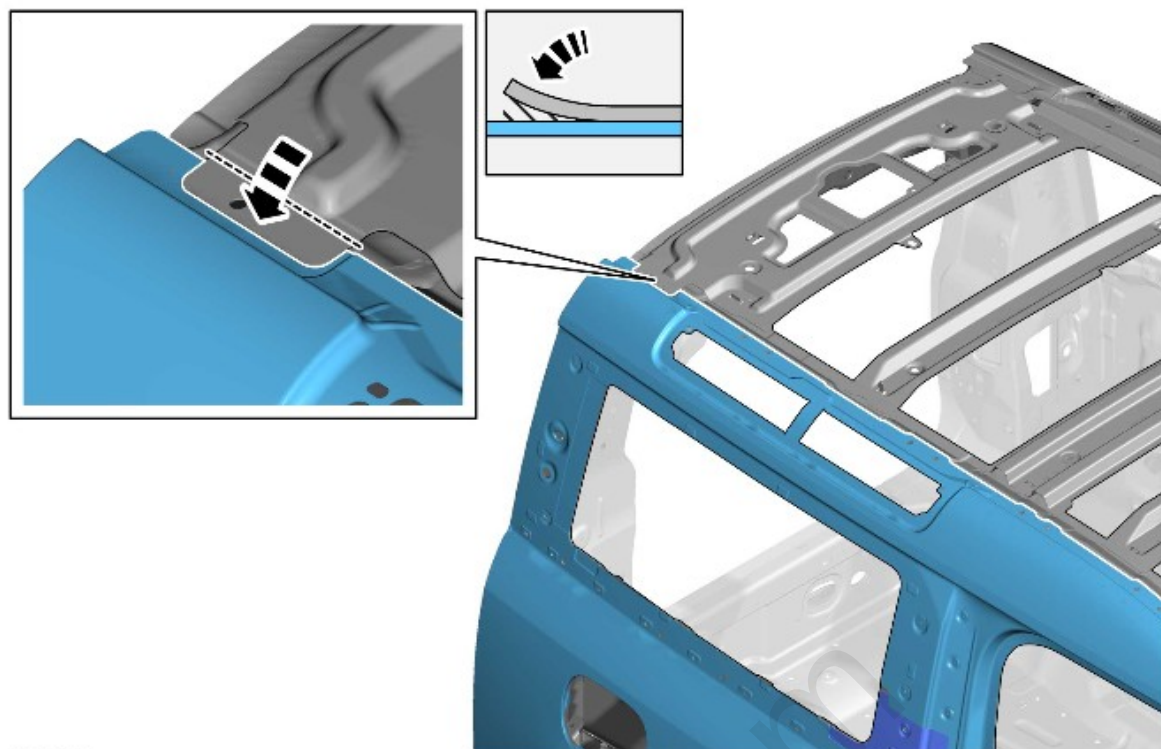
**⚠ CAUTION:**

This step will require the aid of another technician as the panel will be heavy.



Offer up the new side panel assembly and clamp into position as indicated. Check alignment, if correct proceed to next step, if not rectify and check the alignment again before proceeding.

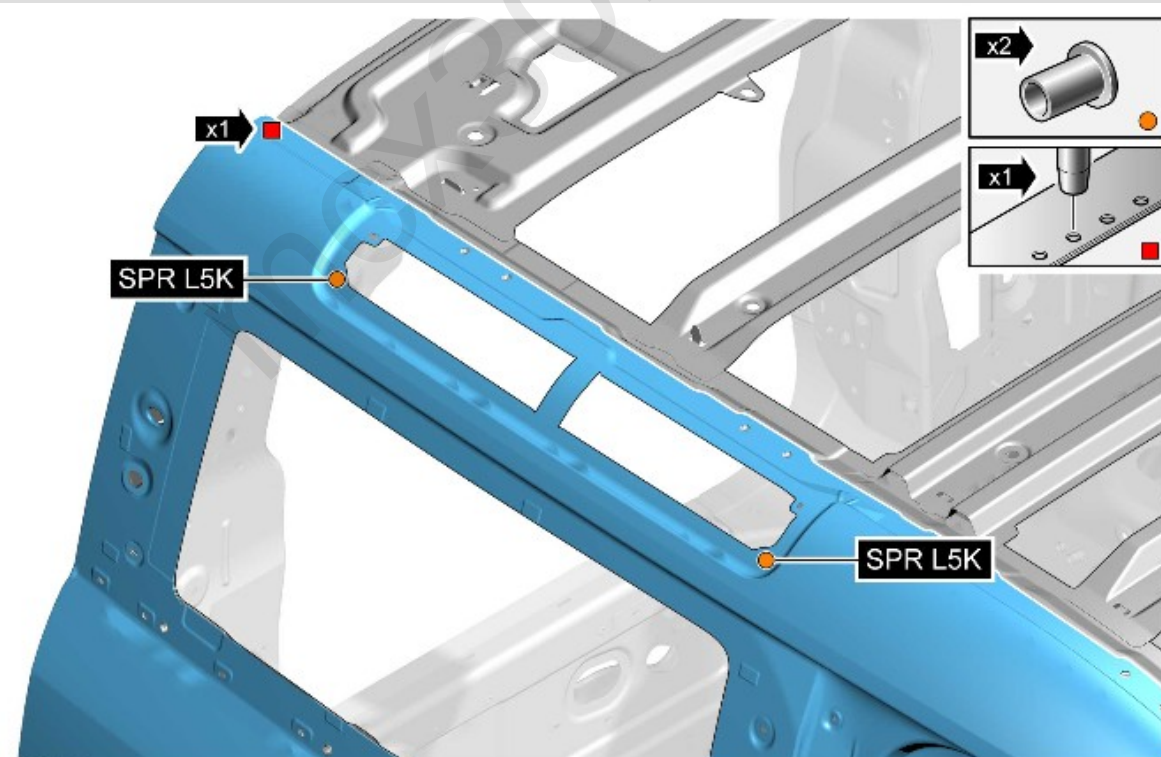
30.



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Close the expansion space as indicated.

31.



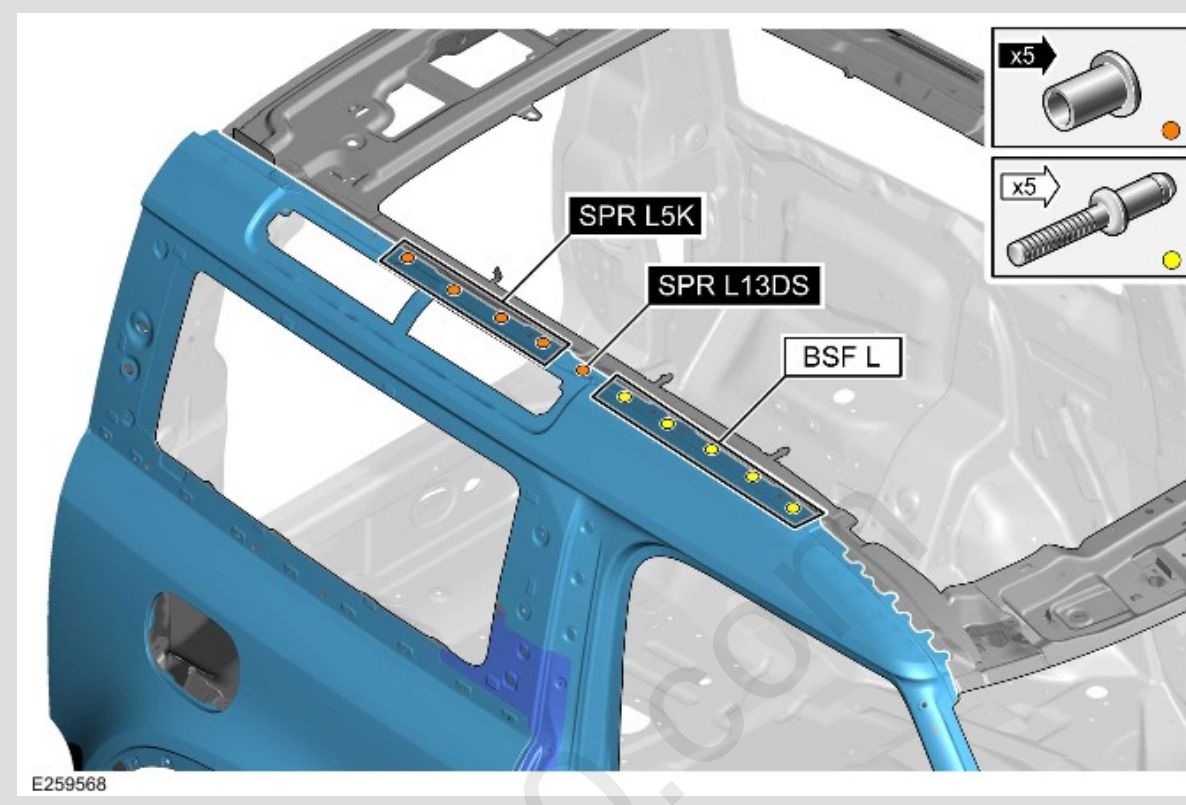
E259567

Install the MIG plug weld and SPRs as indicated.

The following step(s) applies to:

Vehicles with roof opening panel

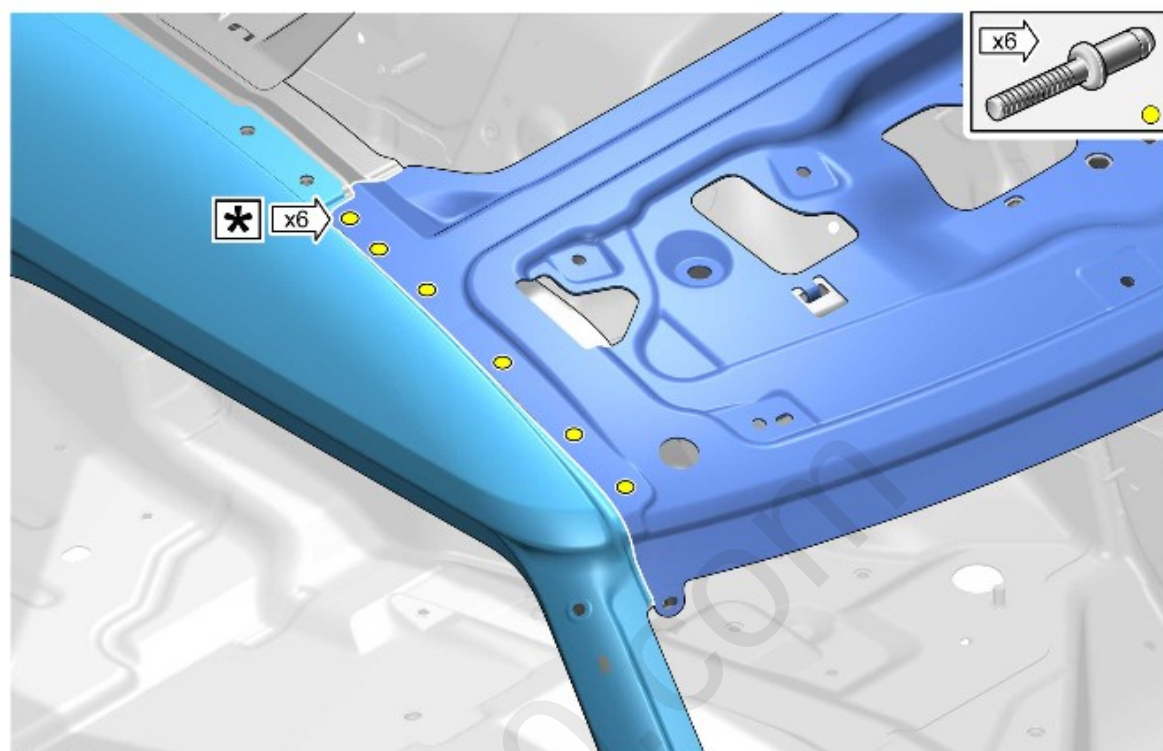
32.



Install the BSFs and SPRs as indicated.

ⓘ CAUTION:

*Breakstem Fasteners (BSFs) to be installed in conjunction with the windshield header panel upper.



E261104

*When installing the side panel in conjunction with the windshield header panel upper.

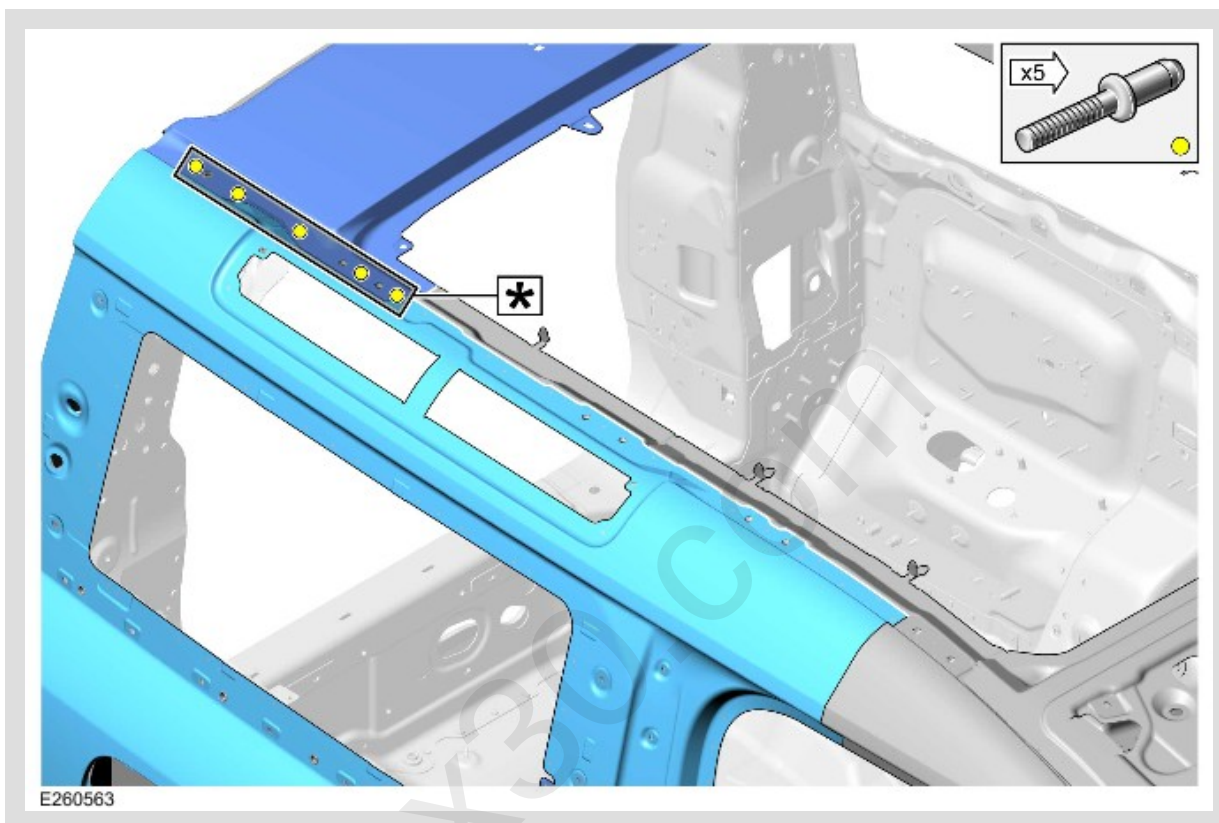
Refer to: [Windshield Header Panel Upper - 90](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

⚠ CAUTION:

Breakstem Fasteners (BSFs) to be installed in conjunction with the rear roof panel.

△ NOTE:

When installing the side panel in conjunction with the rear roof panel.



Install the BSFs as indicated. For additional information

Refer to: [Rear Roof Panel - 90, Vehicles With: Roof Opening Panel](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

The following step(s) applies to:

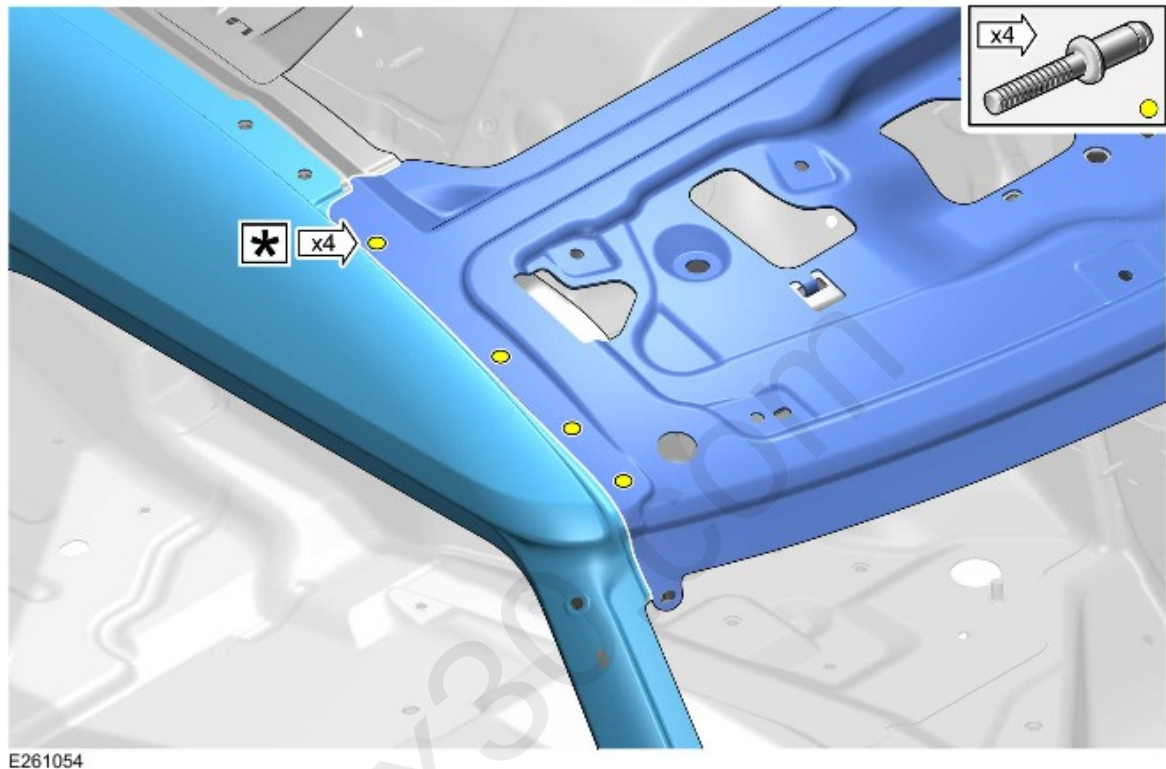
Vehicles without roof opening panel

⚠ CAUTION:

Breakstem Fasteners (BSFs) to be installed in conjunction with the windshield header panel upper.

△ NOTE:

When installing the side panel in conjunction with the windshield header panel upper.



Install the BSFs as indicated. For additional information

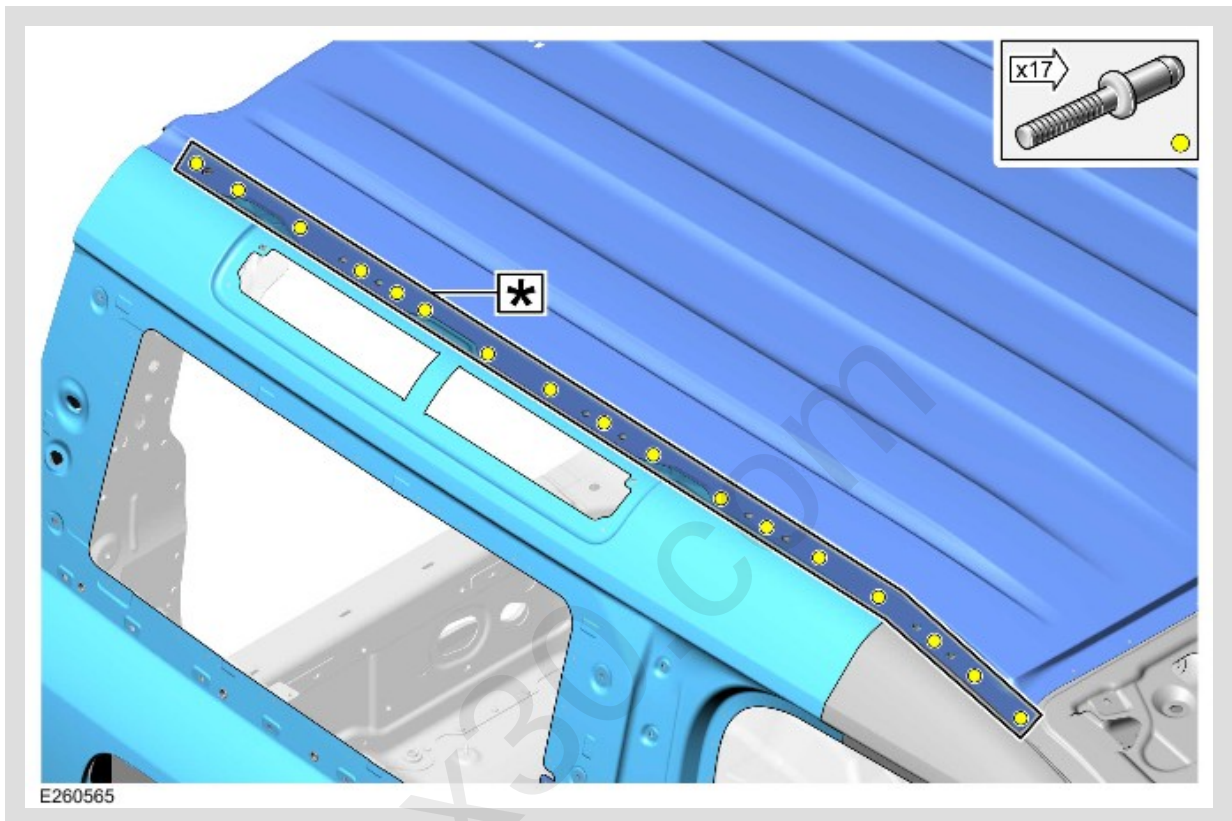
Refer to: [Windshield Header Panel Upper - 90](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

⚠ CAUTION:

* Breakstem Fasteners (BSFs) to be installed in conjunction with the roof panel.

△ NOTE:

When installing the side panel in conjunction with the roof panel.



Install the BSFs as indicated. For additional information

Refer to: [Roof Panel - 90, Vehicles Without: Roof Opening Panel](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

The following step(s) applies to:

All vehicles

37.

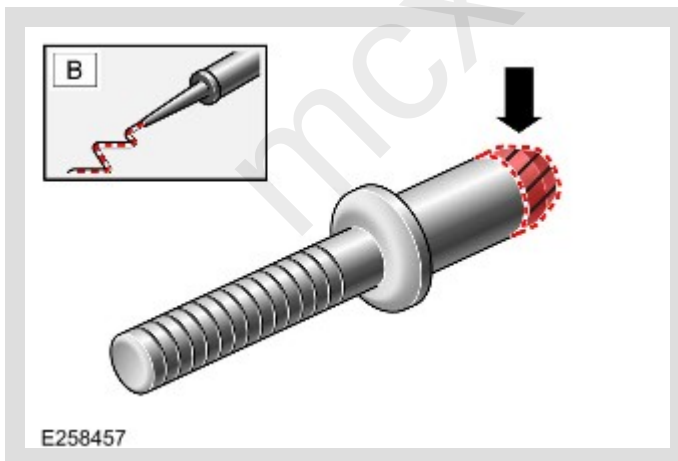


Install the BSF, MIG plug weld and SPRs as indicated.

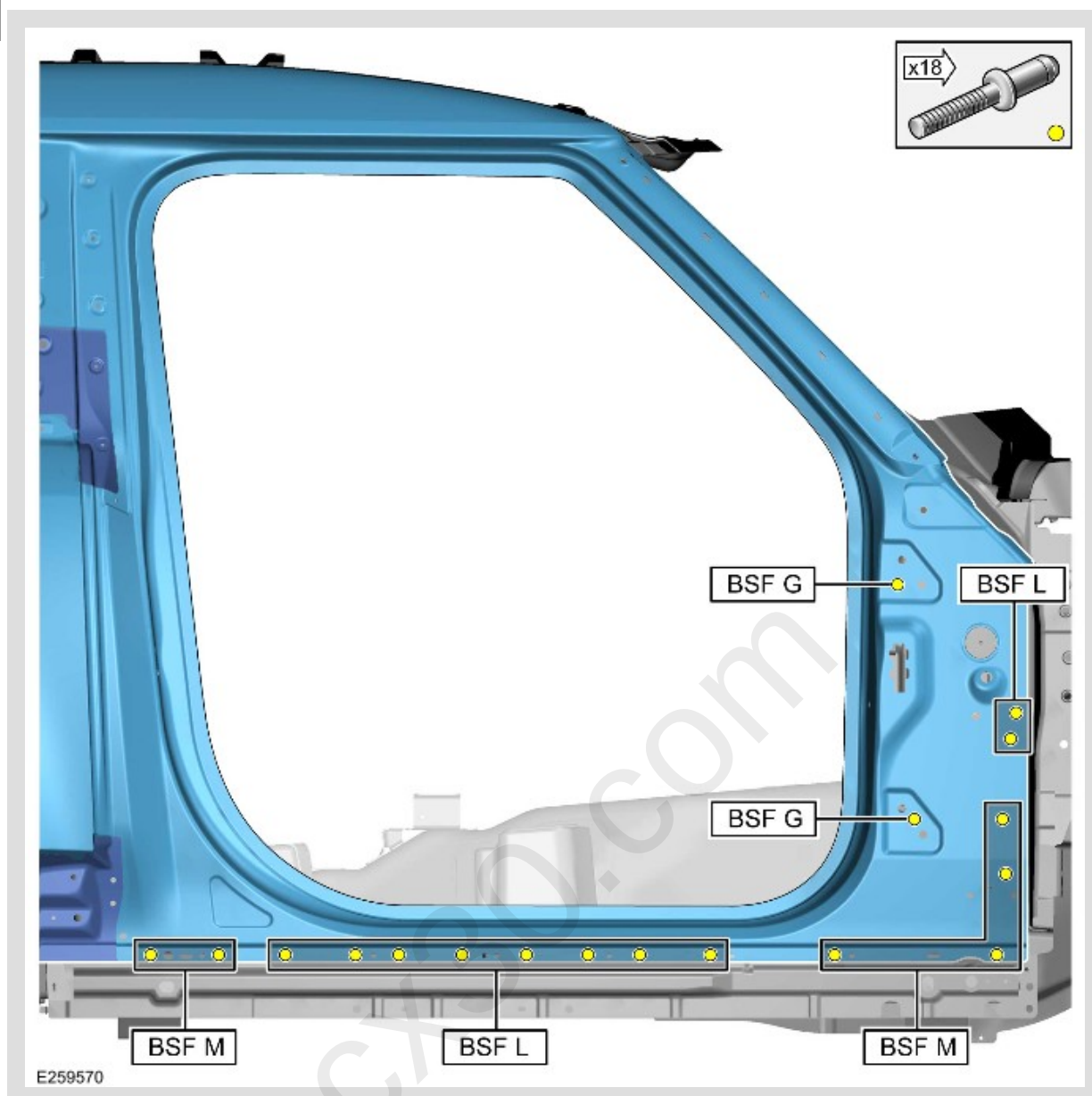
38.

NOTE:

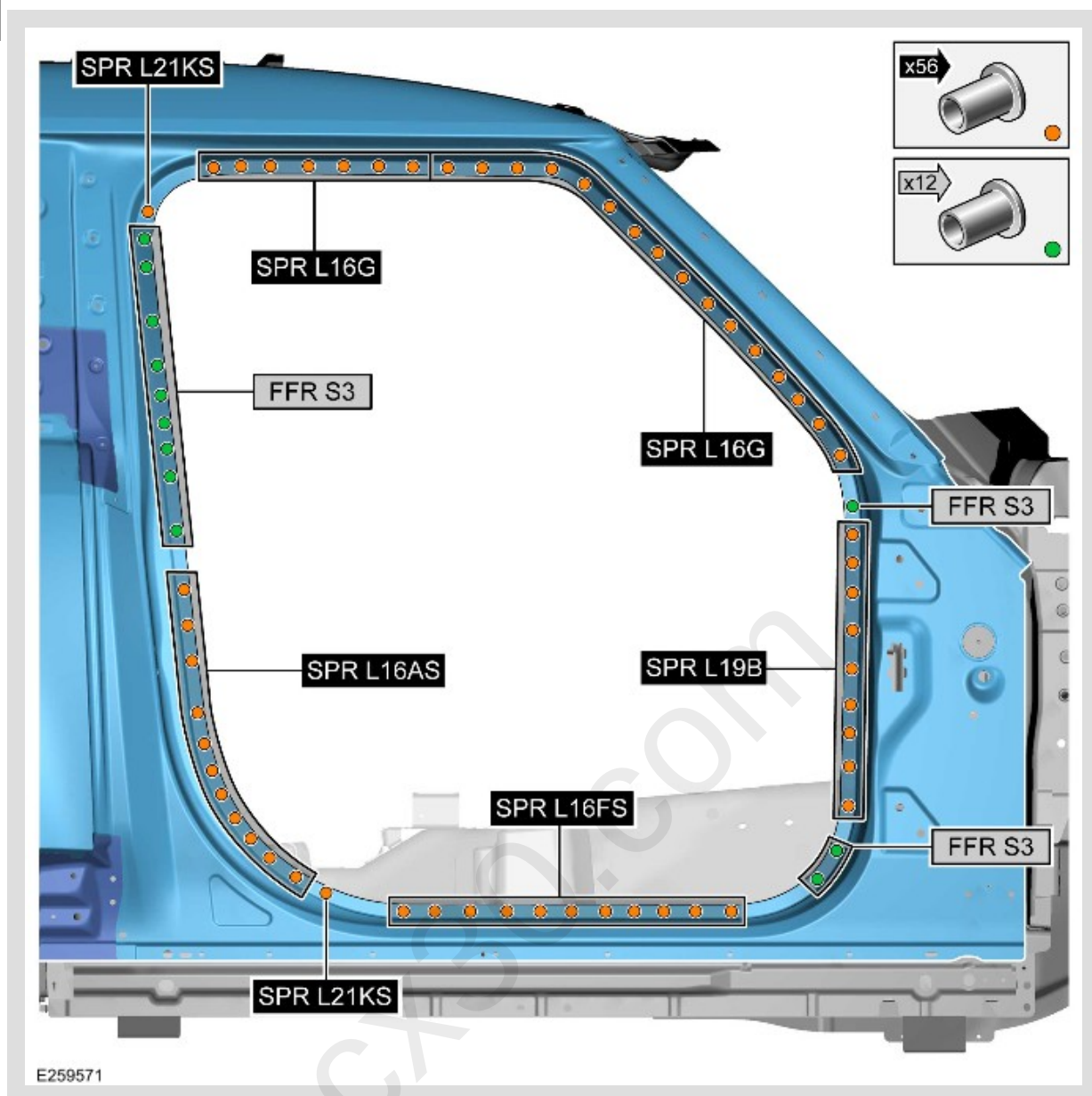
When installing Breakstem Fasteners (BSFs) into the rocker panel.



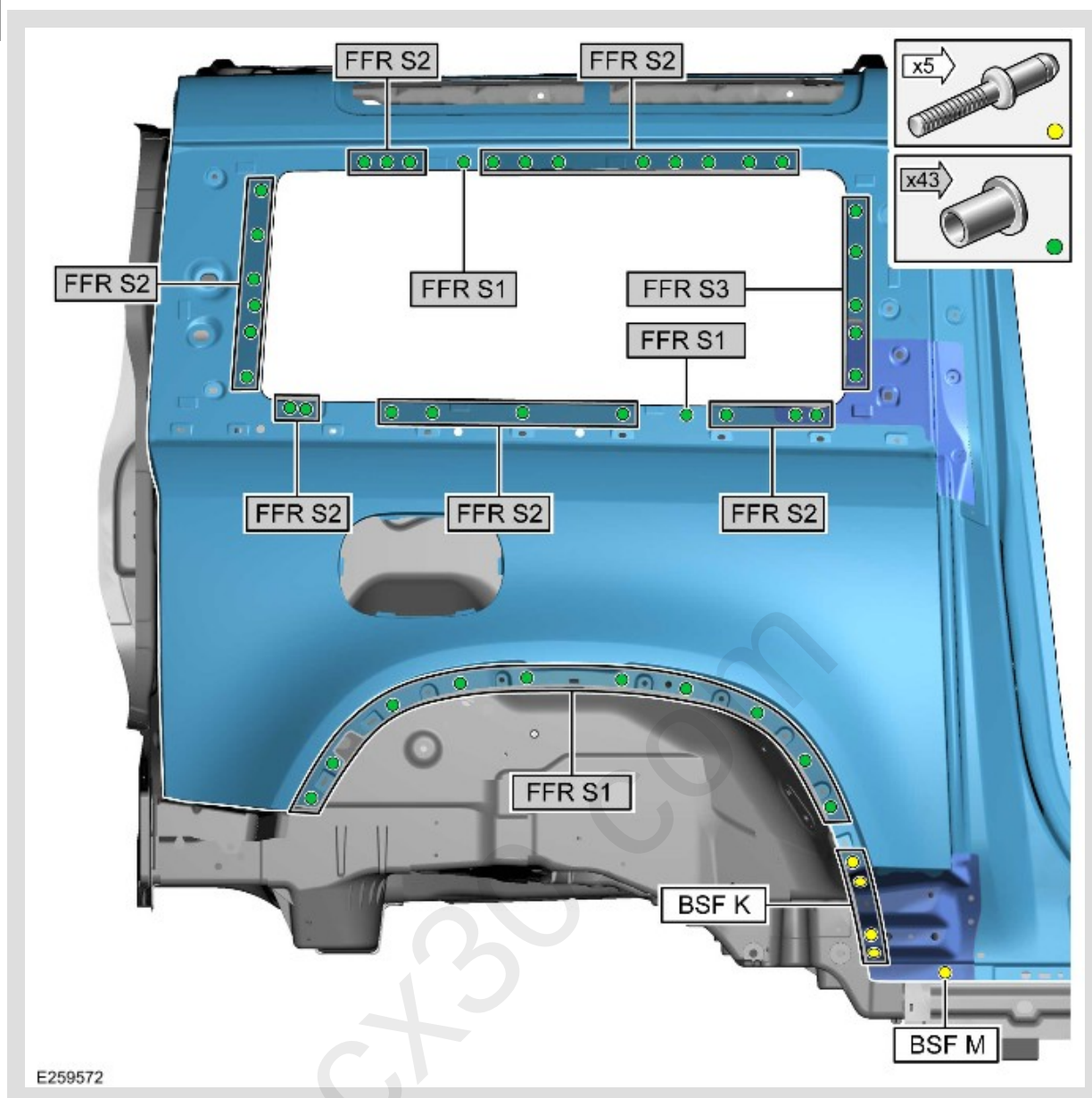
Apply a small amount of JLR recommended flexible sealant to the BSFs before installation as indicated.



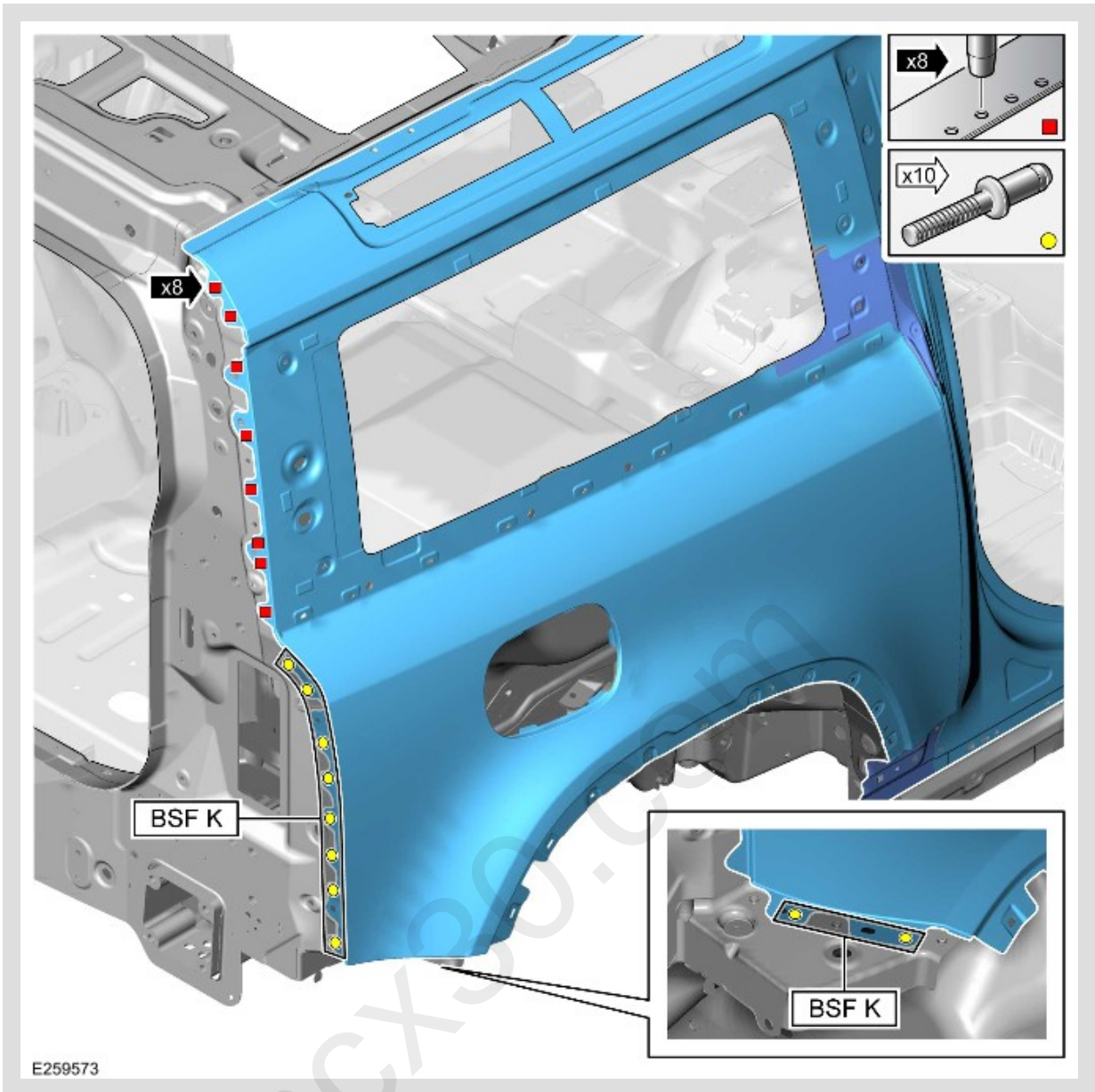
Install the BSFs as indicated.



Install the SPRs and FFRs as indicated.



Install the BSFs and FFRs as indicated.



Install the BSFs and MIG plug welds as indicated.

43. Dress the MIG plug welds.

44. Install the front door upper and lower door hinges and tighten the bolts.

Torque: 35Nm

45. Install the front door striker and tighten the bolts.

Torque: 25Nm

46. Remove any excess adhesive.

47. Make sure that any open or exposed panel joints are correctly sealed.

48. Make sure that all installed fixings are sealed using a JLR recommended sealer.

49. Make sure corrosion protection is applied to all areas affected by the repair.



NOTE:

The installation of associated panels and components is the reversal of the removal procedure.

50. For additional installation information.

Refer to: [Fixed Side Steps and Side Tubes - Part number: 90: VPLEP0433, VPLEP0391, 110: VPLEP0434, VPLEP0392](#) (102-03 Exterior, Removal and Installation).

Refer to: [Deployable Side Steps - Part number: 110: VPLEP0393, VPLEP0394, VPLEP0422](#), (102-03 Exterior, Removal and Installation).

51. For additional installation information.

Refer to: [Deployable Roof Ladder - Part number: VPLER0172](#) (102-03 Exterior, Removal and Installation).

52. For additional installation information.

Refer to: [Fuel Tank Filler Pipe - INGENIUM I4 2.0L Petrol - PHEV \(310-01 Fuel Tank and Lines - INGENIUM I4 2.0L Petrol/INGENIUM I4 2.0L Petrol - PHEV, Removal and Installation\)](#).

53. For additional installation information.

Refer to: [Windshield Header Panel Upper - 90](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).

54. For additional installation information.

Refer to: [Alpine Window](#) (501-11 Glass, Frames and Mechanisms, Removal and Installation).

55. For additional installation information.

Refer to: [Rear Quarter Window](#) (501-11 Glass, Frames and Mechanisms, Removal and Installation).

56. For additional installation information.

Refer to: [Windshield](#) (501-11 Glass, Frames and Mechanisms, Removal and Installation).

57. For additional installation information.

Refer to: [Front Fender Mounting Bracket Lower - 90](#) (501-27 Front End Sheet Metal Repairs, Removal and Installation).

58. For additional installation information.

Refer to: [Fender Apron Panel - 90](#) (501-27 Front End Sheet Metal Repairs, Removal and Installation).

59. For additional installation information.

Refer to: [Second Row Seatbelt Retractor - 90](#) (501-20A Seatbelt System, Removal and Installation).

60. For additional installation information.

Refer to: [Front Row Seatbelt Retractor - 90](#) (501-20A Seatbelt System, Removal and Installation).

61. For additional installation information.

Refer to: [Second Row Seat - 90](#) (501-10 Seating, Removal and Installation).

62. For additional installation information.

Refer to: [Front Row Seat - Vehicles With: Power Seats](#) (501-10 Seating, Removal and Installation).

Refer to: [Front Row Seat - Vehicles Without: Power Seats](#) (501-10 Seating, Removal and Installation).

63. For additional installation information.

Refer to: [Instrument Panel Upper Trim](#) (501-12 Instrument Panel and Console, Removal and Installation).

Refer to: [Instrument Panel Lower Trim](#) (501-12 Instrument Panel and Console, Removal and Installation).

64. For additional installation information.

Refer to: [A-Pillar Lower Trim Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

65. For additional installation information.

Refer to: [Rear Bumper](#) (501-19 Bumpers, Removal and Installation).

66. For additional installation information.

Refer to: [Roof Opening Panel Frame](#) (501-17 Roof Opening Panel, Removal and Installation).

67. For additional installation information.

Refer to: [Rear Roof Panel - 90, Vehicles With: Roof Opening Panel](#) (501-28 Roof Sheet Metal Repairs, Removal and Installation).
