

501-29 Side Panel Sheet Metal Repairs
Removal and Installation

2021 F-150

Procedure revision date: 10/23/2020

Front Door Skin Panel

Special Tool(s) / General Equipment

6.5 mm Drill Bit
Scraper for Straight Edges
Grinder
Self-Piercing Rivet (SPR) Remover/Installer
Belt Sander
Blind Rivet Gun
Hot Air Gun
Knife
Locking Pliers

Materials

Name	Specification
Metal Bonding Adhesive TA-1, TA-1-B, 3M™ 08115, LORD Fusor® 108B	-
Seam Sealer TA-2-B, 3M™ 08308, LORD Fusor® 803DTM	-
Flexible Foam Repair 3M™ 08463, LORD Fusor® 121	-

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.

-  **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).

NOTE: *LH side shown, RH side similar.*

NOTE: *Regular cab shown, SuperCab and SuperCrew cab similar.*

2. Inspect the door hinges for excessive wear or damage. Install new or rebuild as necessary.



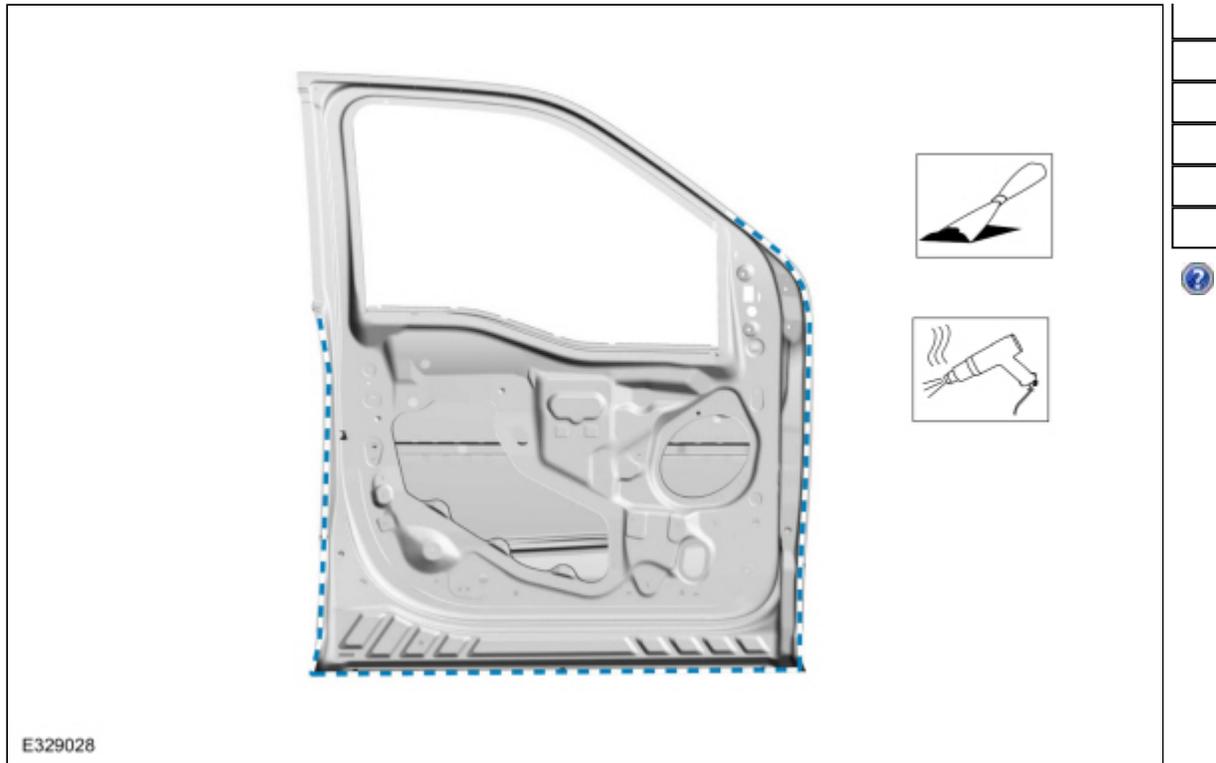
3. Remove the exterior door handle.

Refer to: [Exterior Front Door Handle](#) (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

4. Remove the door window glass.
Refer to: [Front Door Window Glass](#) (501-11 Glass, Frames and Mechanisms, Removal and Installation).
5. Remove the outside mirror assembly.
Refer to: [Exterior Mirror - Vehicles With: Long Arm Mirrors](#) (501-09 Rear View Mirrors, Removal and Installation).
Refer to: [Exterior Mirror - Vehicles With: Short Arm Mirrors](#) (501-09 Rear View Mirrors, Removal and Installation).
6. Remove the door.
Refer to: [Front Door - Regular Cab/SuperCrew](#) (501-03 Body Closures, Removal and Installation).
Refer to: [Front Door - SuperCab](#) (501-03 Body Closures, Removal and Installation).
7. Remove the door trim.
Refer to: [Front Door Upper Moulding](#) (501-08 Exterior Trim and Ornamentation, Removal and Installation).
8. Remove all door assembly weather stripping.



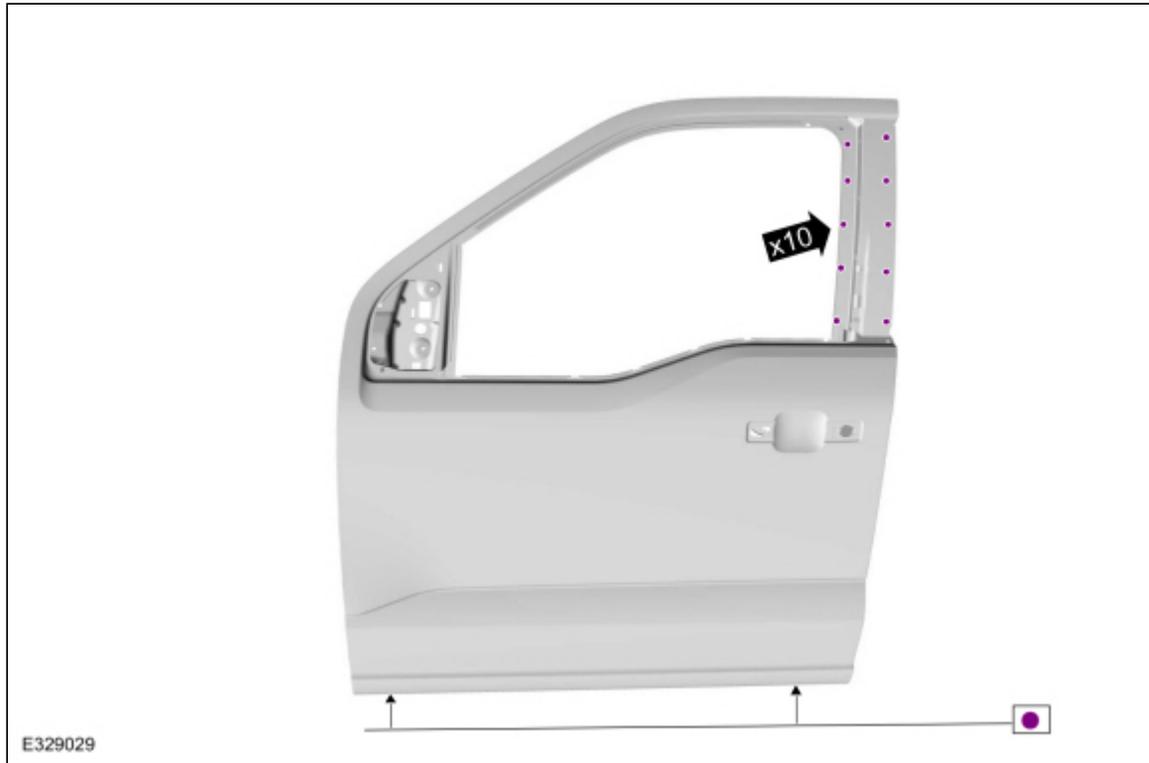
9. Remove the seam sealer from the door hem flange.
Use the General Equipment: Hot Air Gun
Use the General Equipment: Scraper for Straight Edges



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

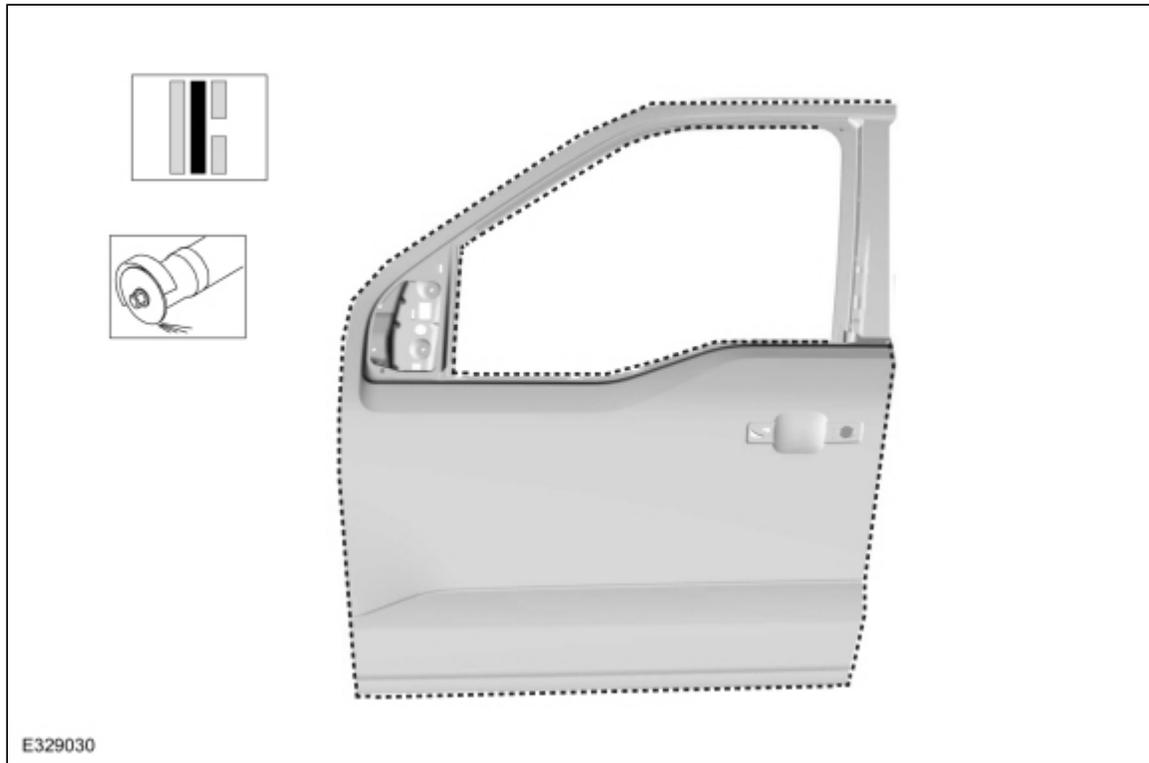




- 11. Carefully grind the **outer layer only** of the door skin hem flange as indicated.
Use the General Equipment: Grinder

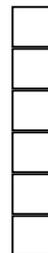






12. **NOTE:** *The use of heat may help in door skin removal.*

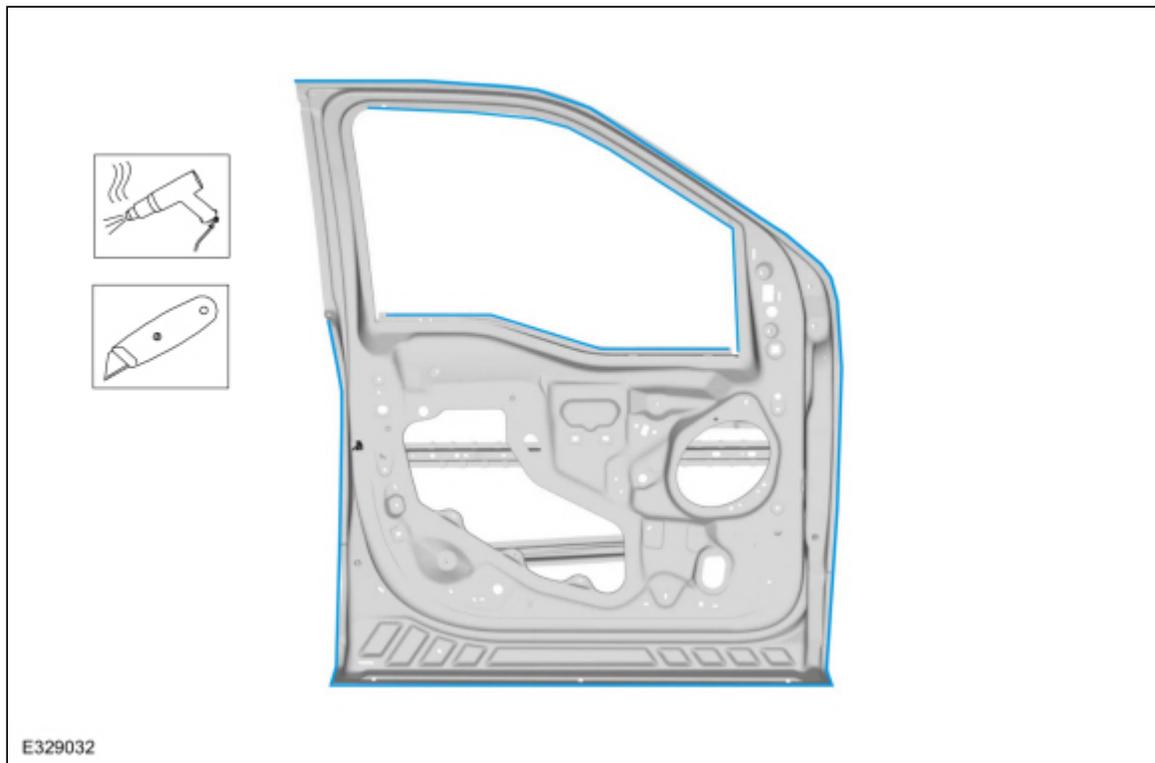
Remove the door skin outer panel.
Use the General Equipment: Hot Air Gun





- 13. Remove the remaining portion of the door outer panel hem flange.
Use the General Equipment: Knife
Use the General Equipment: Hot Air Gun





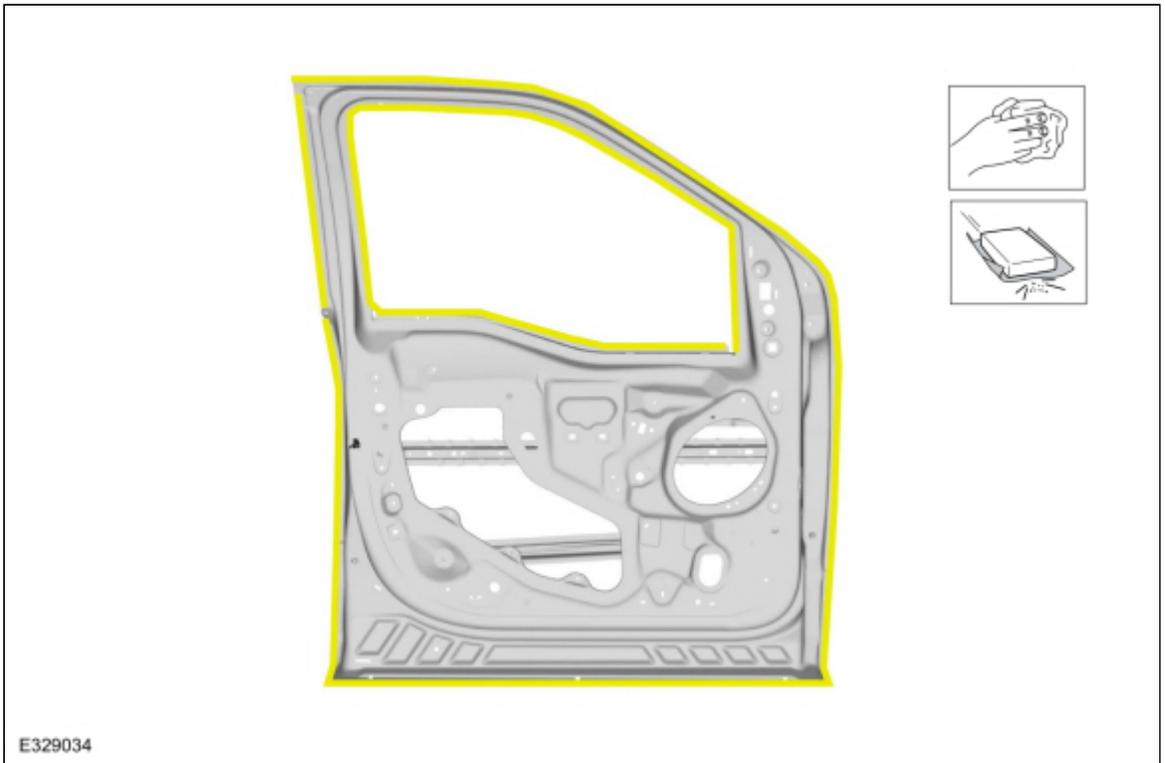
Installation

NOTICE: Do not install SPR fasteners directly in old SPR fastener location. SPR fasteners must be installed adjacent to the original location. Failure to follow this direction may compromise the structural integrity of the repair.

NOTE: Solid rivets or blind rivet fasteners may be used in place of SPR fasteners after enlarging existing holes to 6.5 mm.

1. Using a hammer and dolly dedicated to aluminum repair, straighten any door shell distortion as necessary.
2. 80-120 grit sand paper.
Sand to remove all adhesive from the contact area and clean.



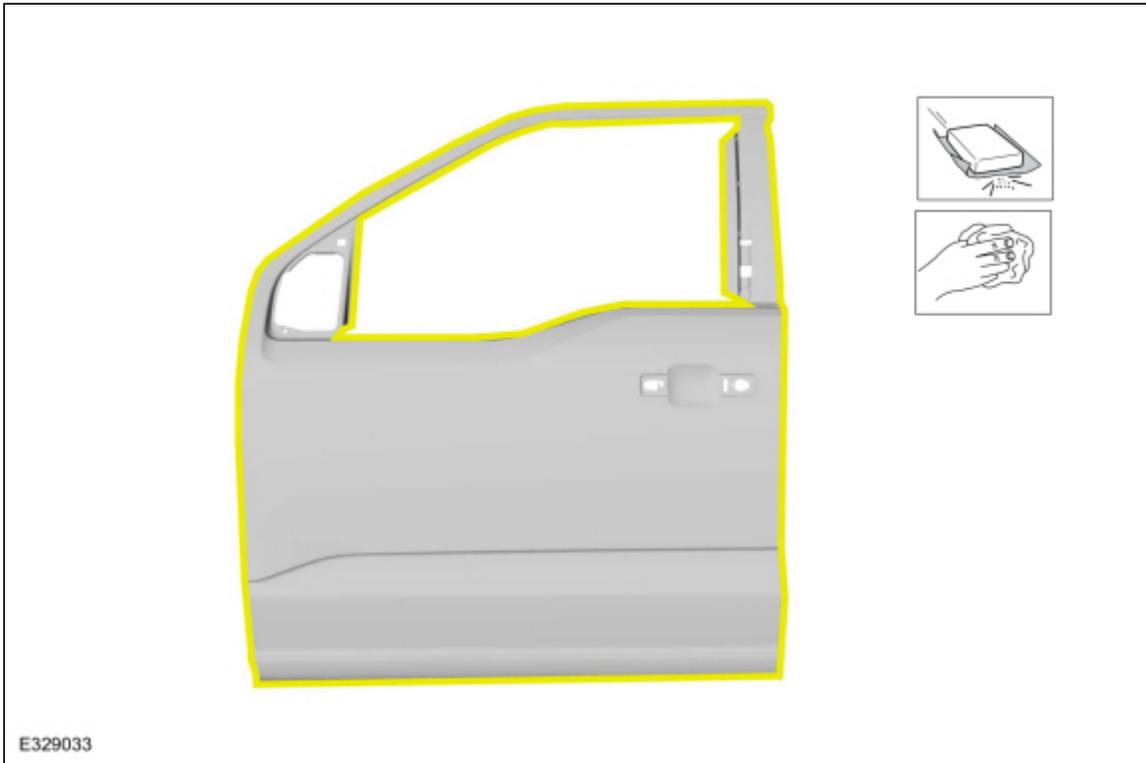


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- 3. 80-120 grit sand paper.
Sand to remove the e-coat from the mating surface and clean.

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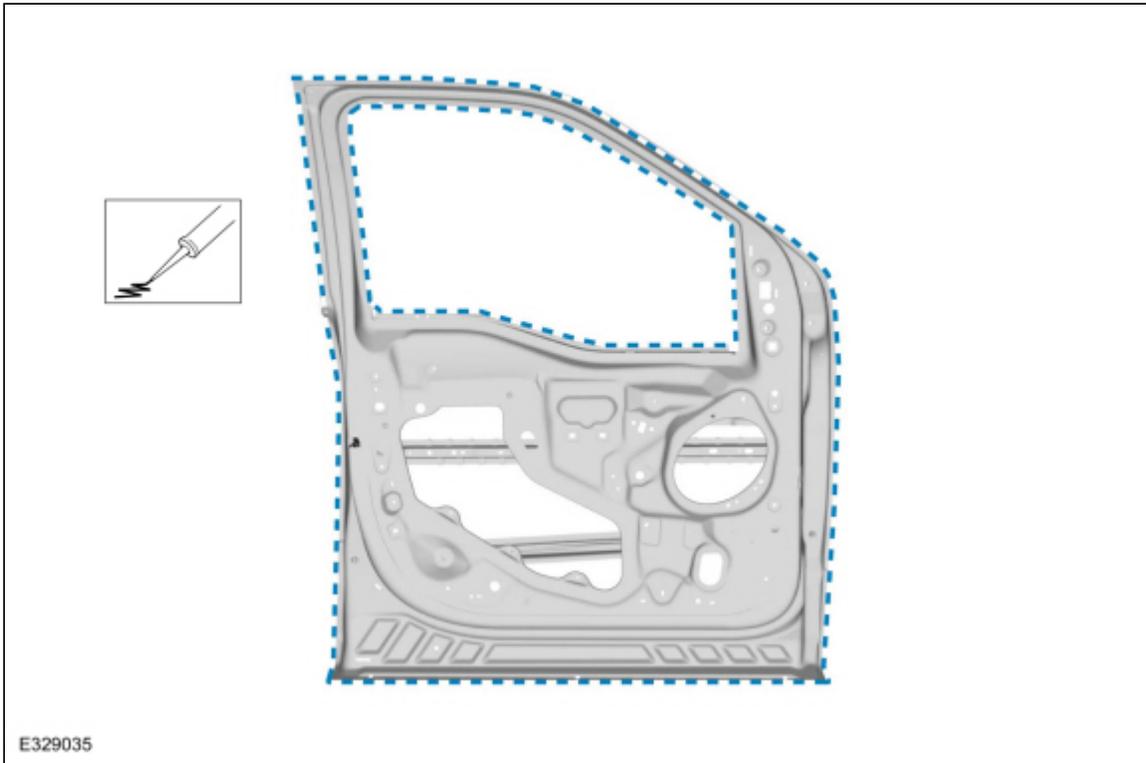
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4. Apply adhesive.

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





- 5. **NOTICE:** To prevent work-hardening of the metal do not use the hammer and dolly method for closing the hem flange. A hem flanging tool designed to work with aluminum is the preferred method.

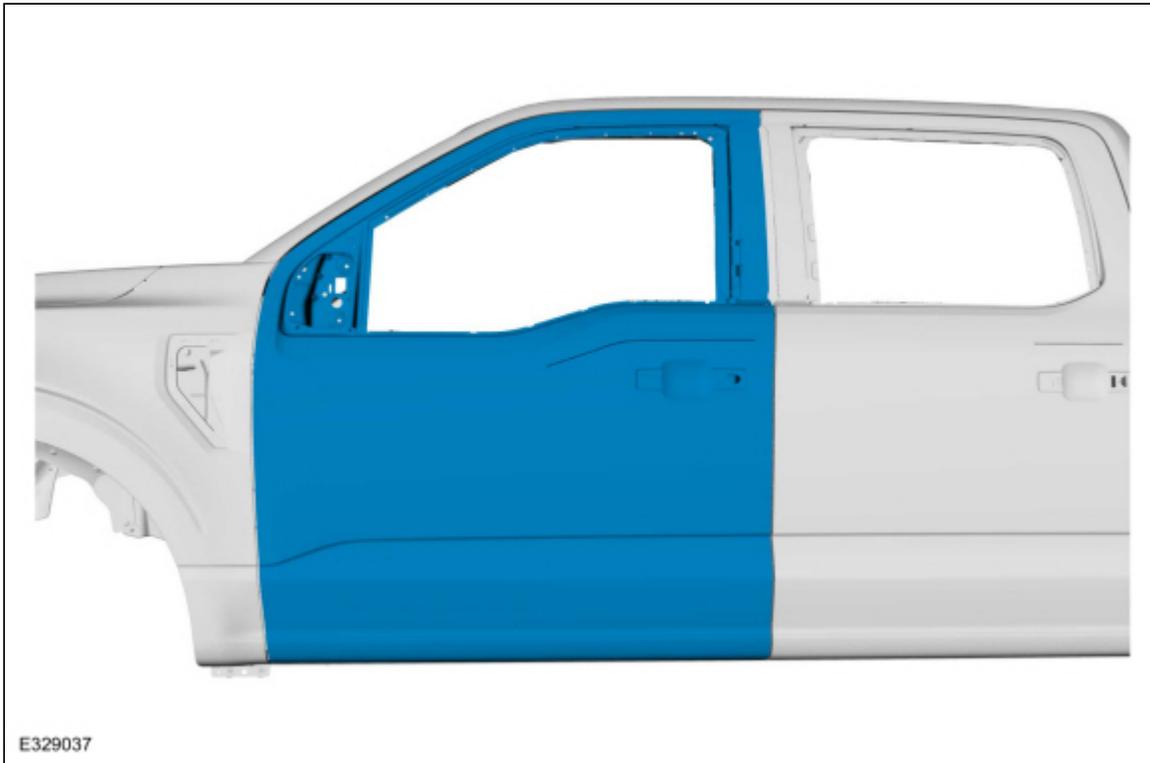
Install, clamp and partially close the flange. Remove the clamp after partially closing the flange.
Use the General Equipment: Locking Pliers





6. Install the door on the vehicle.

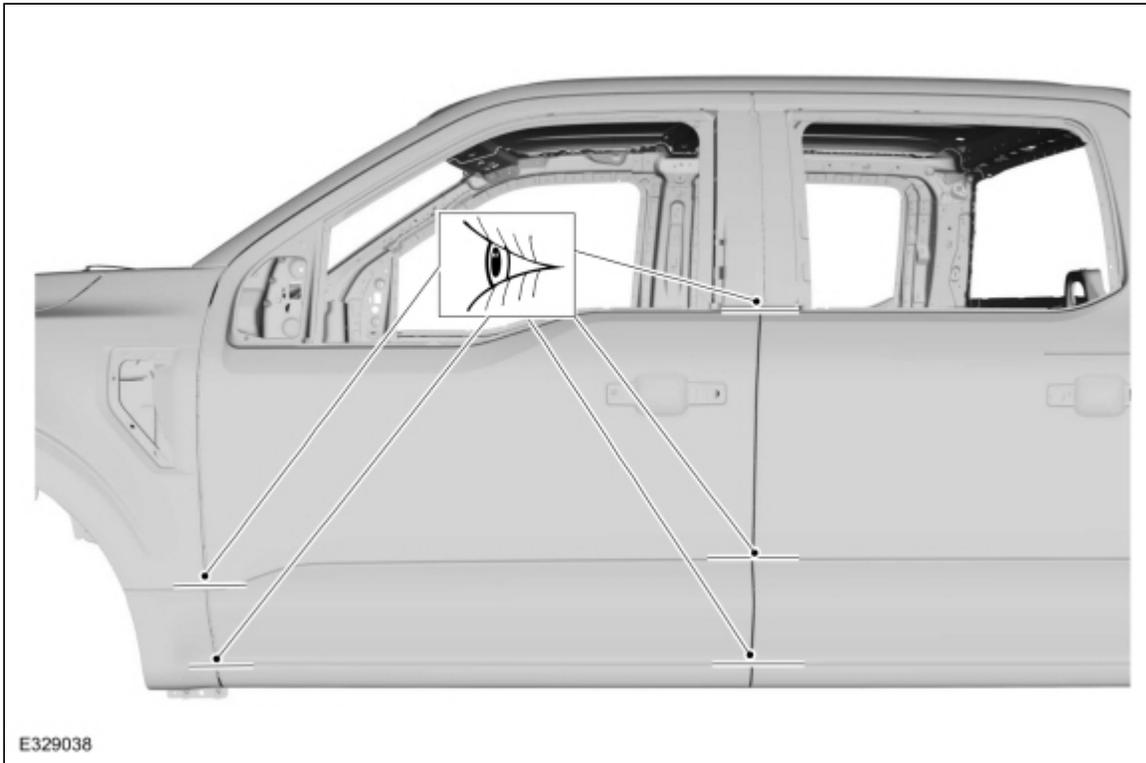




7. Check the door panel for proper fit and alignment.

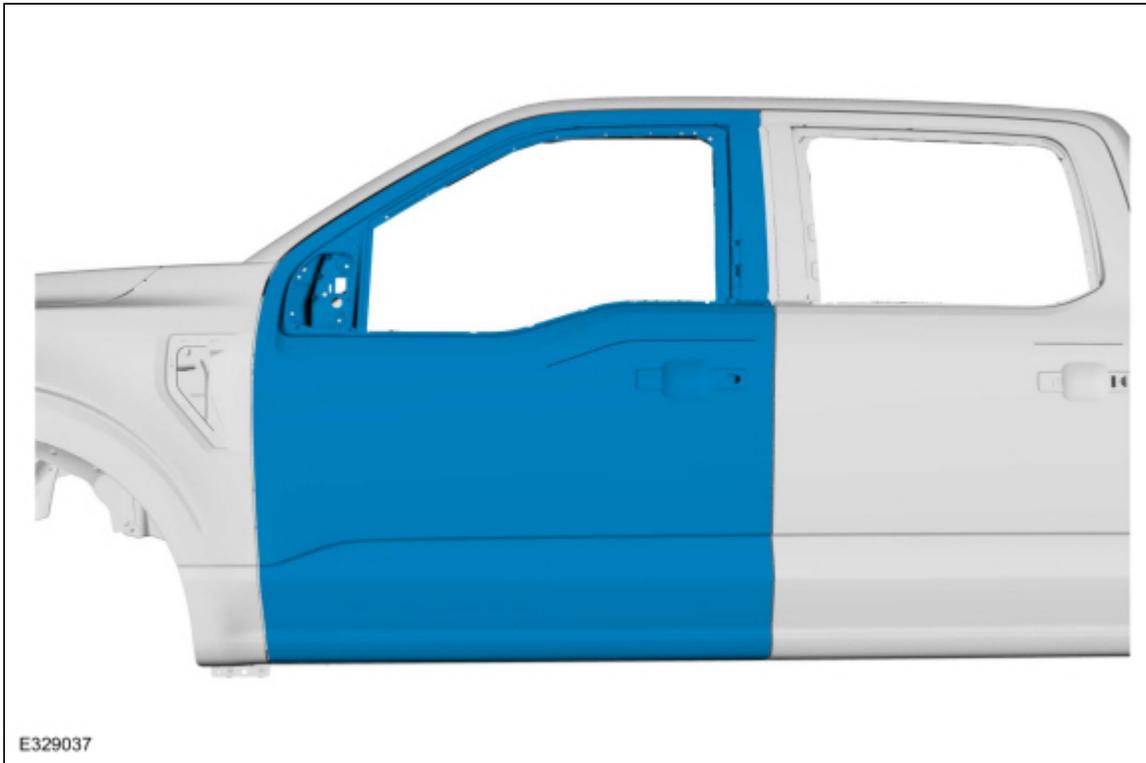
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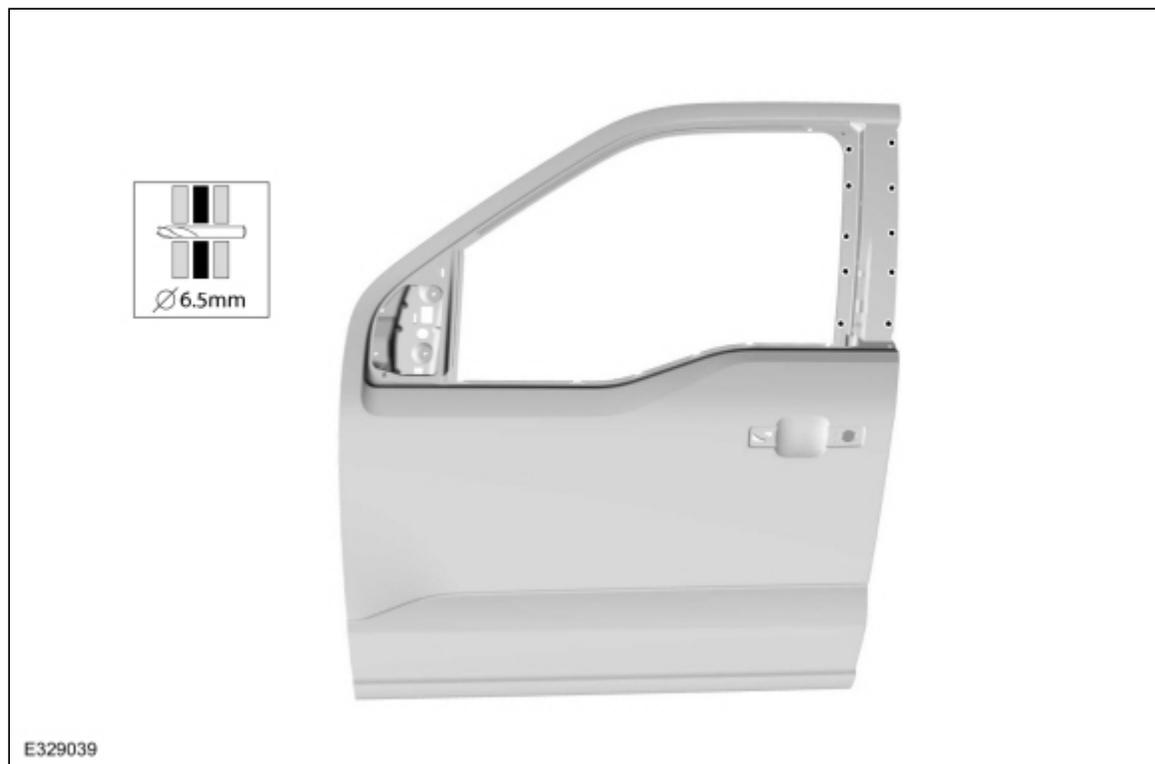
8. Remove the door from the vehicle.





- 9. Drill for fasteners.
Use the General Equipment: 6.5 mm Drill Bit





10. **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 rivet or solid rivet fasteners may be used in place of SPR fasteners after enlarging holes to 6.5 mm.

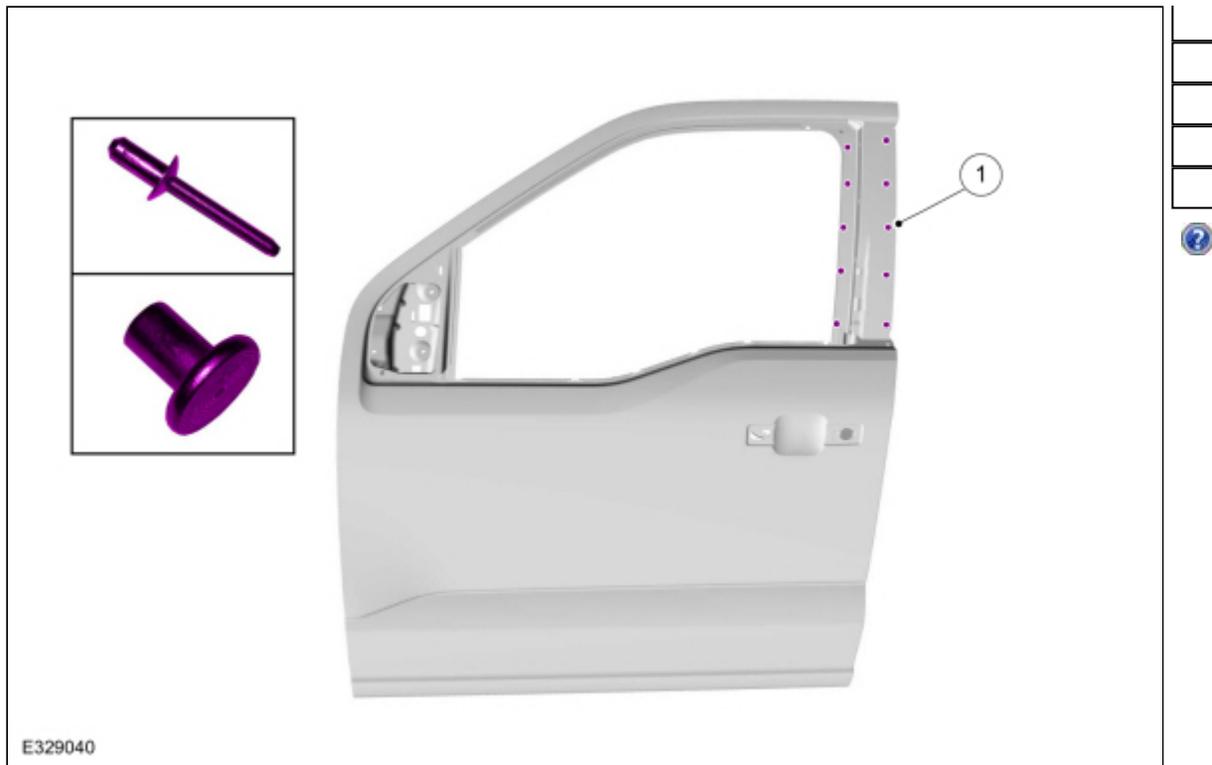
Install fasteners.

Item	SPR Number	SPR Code	Henrob® Car-O- Liner®, CMO®, Chief®, Spanesi® Wielande and Schill® Mandrel	Pro-Spot® Mandrel	Blind Rivet	Solid Rivet	Rivnut®
1	-	-	-	-	W702512-S900C	W790376-S900	-

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

Use the General Equipment: Blind Rivet Gun

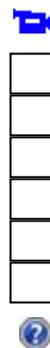


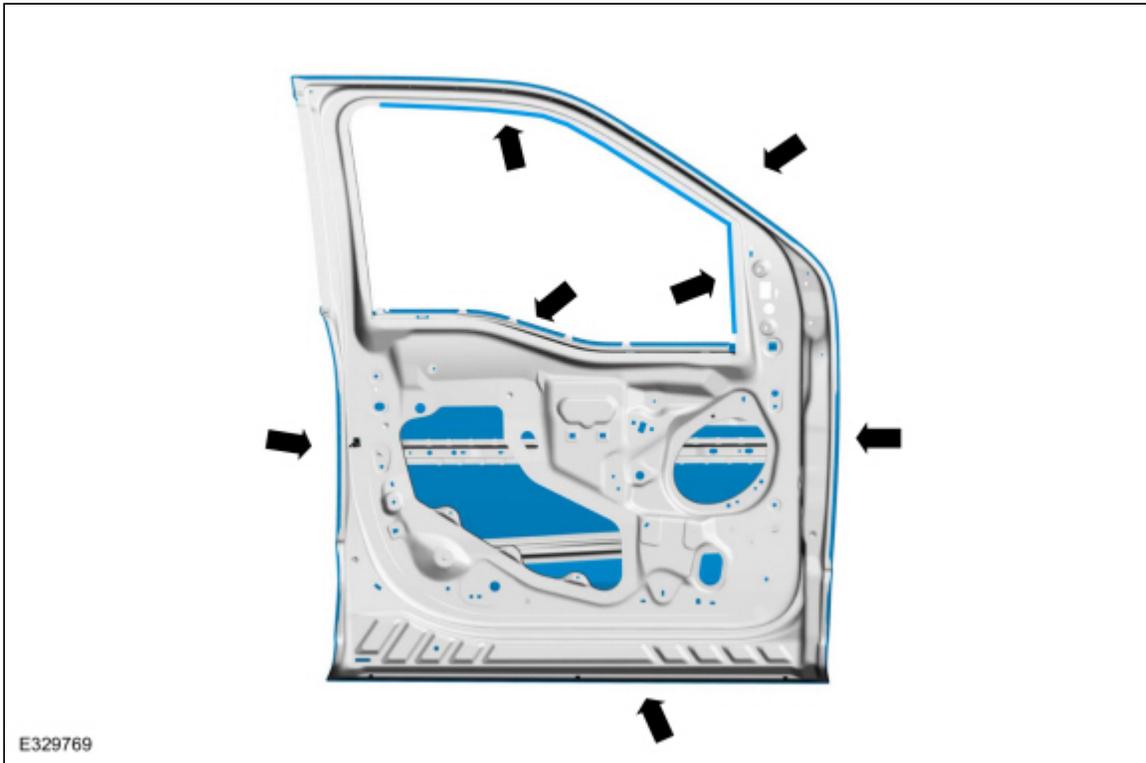


11. **NOTICE:** To prevent work-hardening of the metal do not use the hammer and dolly method for closing the hem flange. A hem flanging tool designed to work with aluminum is the preferred method.

NOTE: Smooth any residual adhesive squeeze-out in to the seam to act as a sealer.

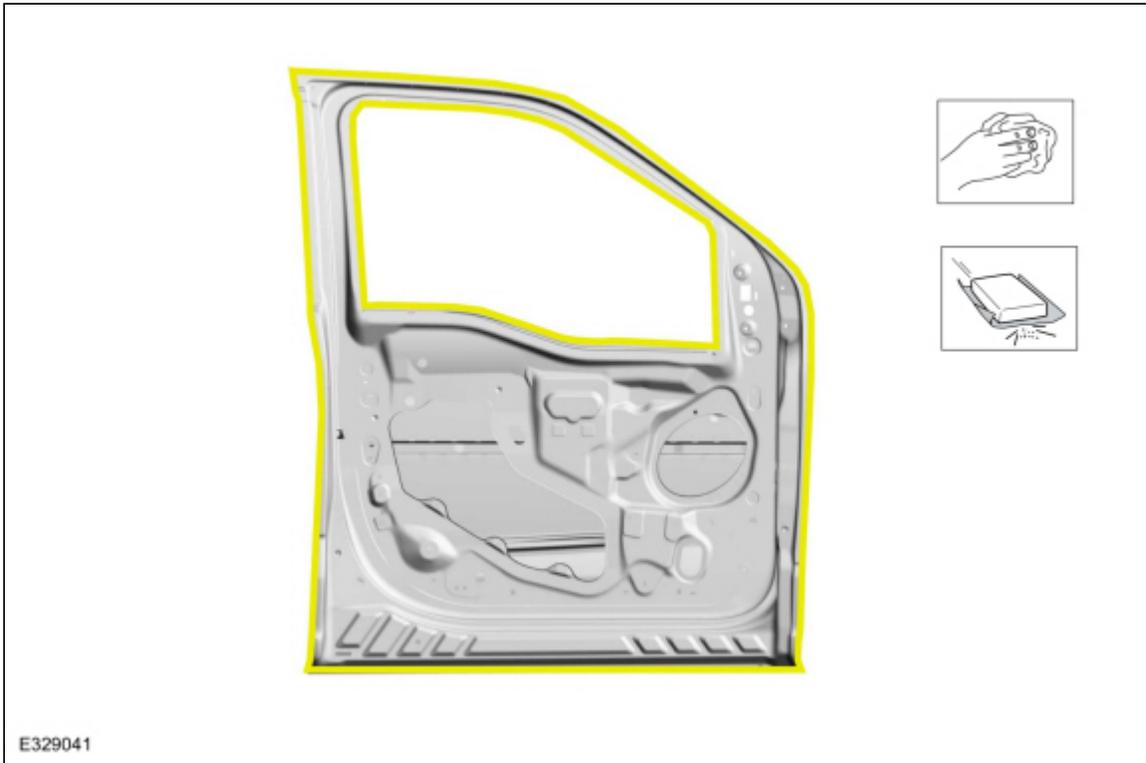
Complete the flanging process.





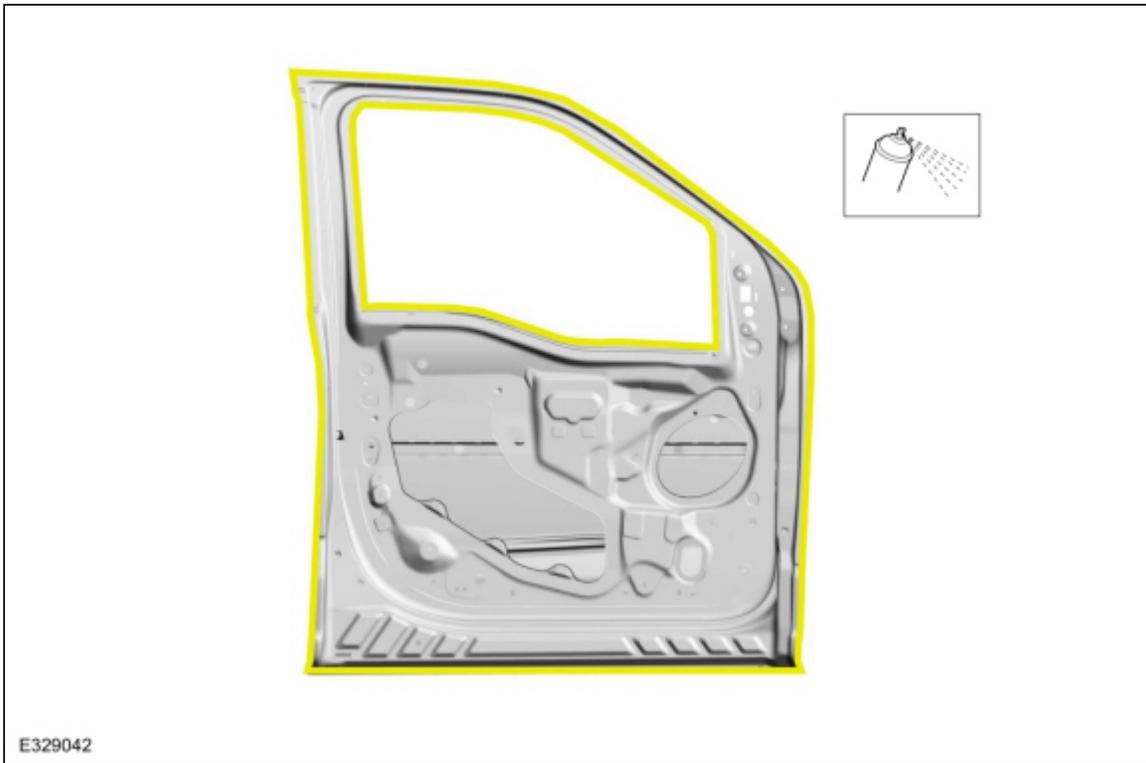
12. Sand and clean for primer application.





13. Apply a Ford approved primer to the flange area.

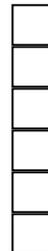


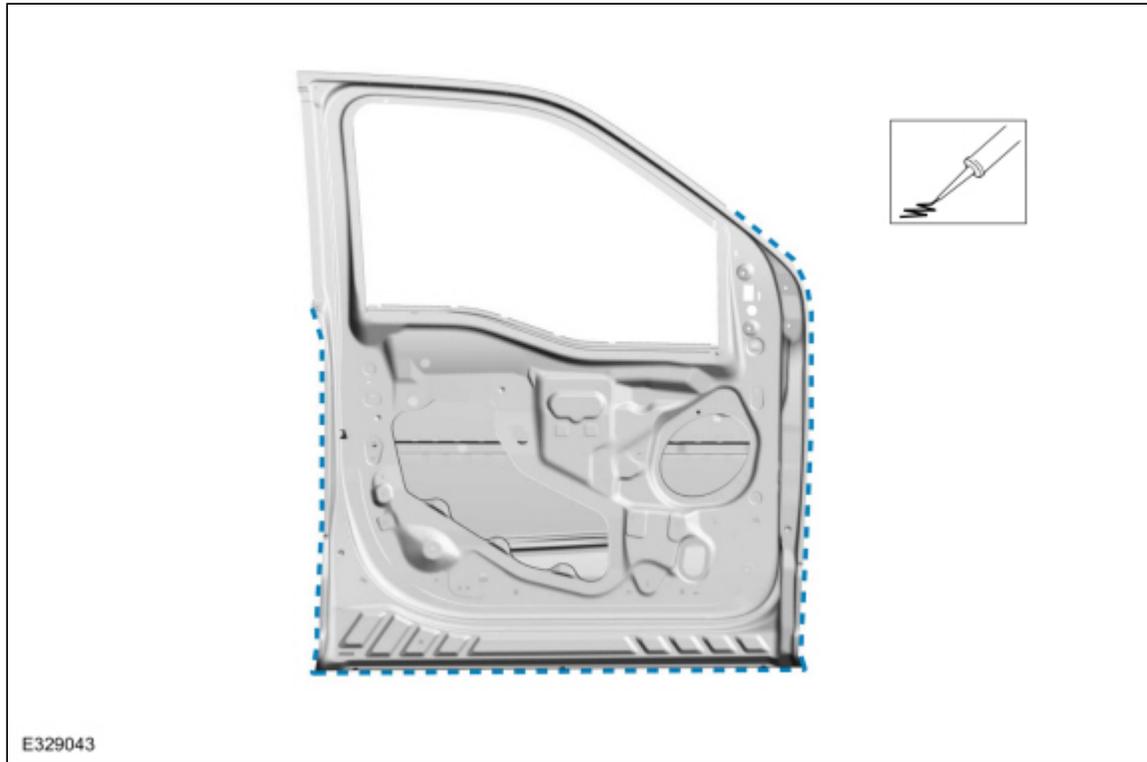


14. Seam Sealing:

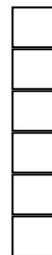
All seams must be sealed to production level.

Material: Seam Sealer / TA-2-B, 3M™ 08308, LORD Fusor® 803DTM





15. Refinish the door shell flange using a Ford approved paint system and typical refinishing techniques.
16. Install the door.
Refer to: [Front Door - Regular Cab/SuperCrew](#) (501-03 Body Closures, Removal and Installation).
Refer to: [Front Door - SuperCab](#) (501-03 Body Closures, Removal and Installation).
17. Apply **NVH** foam as indicated.
Material: Flexible Foam Repair / 3M™ 08463, LORD Fusor® 121





18. Install a butyl NVH patch as indicated (obtain locally).





- 19. Sand and refinish the entire repair area using a Ford approved paint system.
- 20. Install the door weather stripping.





21. Install the exterior door handle.
Refer to: [Exterior Front Door Handle](#) (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).
22. Install the exterior mirror.
Refer to: [Exterior Mirror - Vehicles With: Long Arm Mirrors](#) (501-09 Rear View Mirrors, Removal and Installation).
Refer to: [Front Door - SuperCab](#) (501-03 Body Closures, Removal and Installation).
23. Install the front door window glass.
Refer to: [Front Door Window Glass](#) (501-11 Glass, Frames and Mechanisms, Removal and Installation).
24. Install the exterior door trim.
Refer to: [Front Door Upper Moulding](#) (501-08 Exterior Trim and Ornamentation, Removal and Installation).
25. Align the door as necessary.
Refer to: [Front Door Alignment - Regular Cab/SuperCrew](#) (501-03 Body Closures, General Procedures).
Refer to: [Front Door Alignment - SuperCab](#) (501-03 Body Closures, General Procedures).

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