2008 ACCESSORIES & EQUIPMENT

Collision Repair - - Cab & Chassis Sierra, Cab & Chassis Silverado, Sierra & Silverado

SPECIFICATIONS

DIMENSIONS - BODY

Body Side Dimensions (Crew Cab)

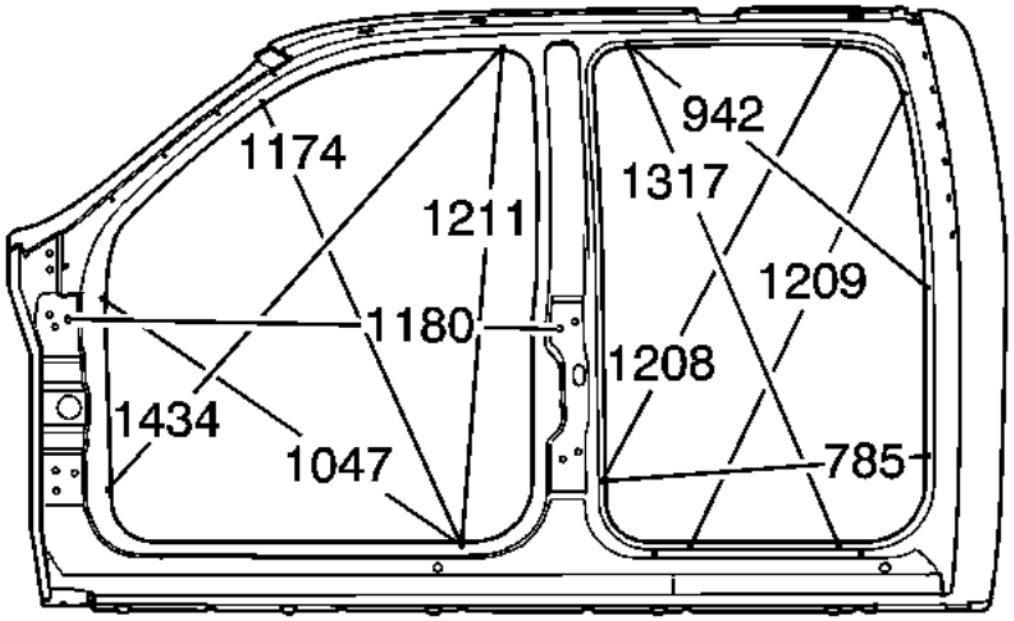


Fig. 1: Body Side Dimensions (Crew Cab)
Courtesy of GENERAL MOTORS CORP.

Body Side Dimensions (Extended Cab)

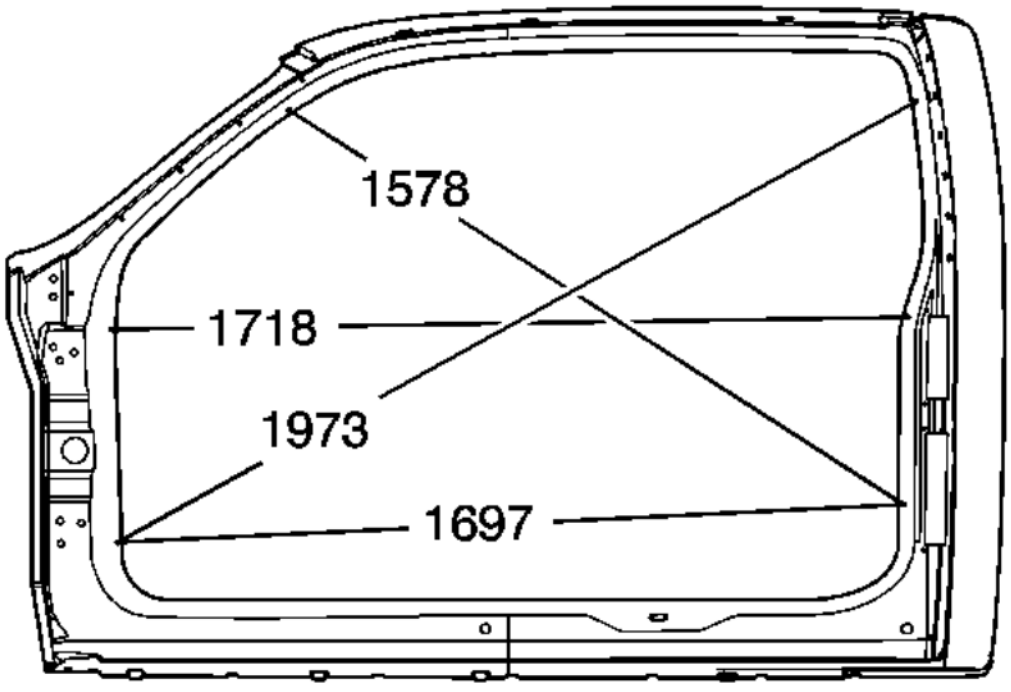


Fig. 2: Body Side Dimensions (Extended Cab)
Courtesy of GENERAL MOTORS CORP.

Body Side Dimensions (Regular Cab)

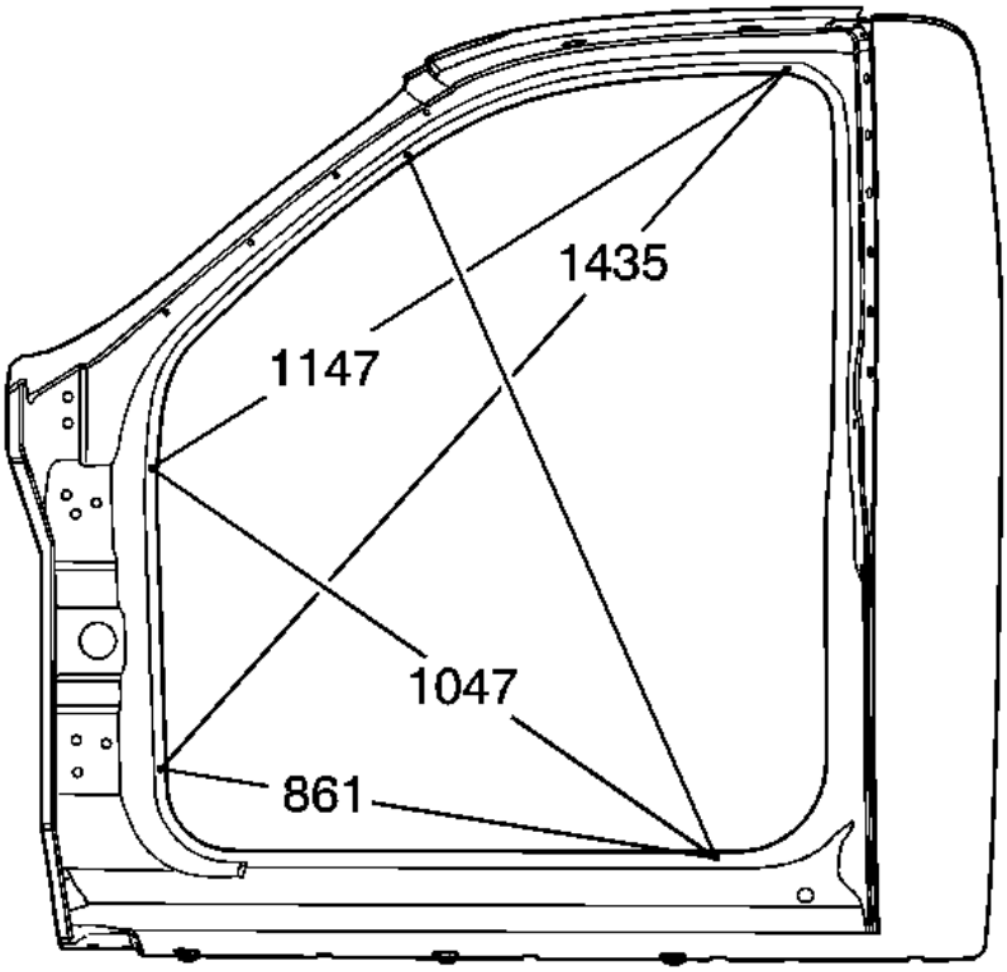


Fig. 3: Body Side Dimensions (Regular Cab)
Courtesy of GENERAL MOTORS CORP.

VISUAL IDENTIFICATION

STRUCTURE IDENTIFICATION

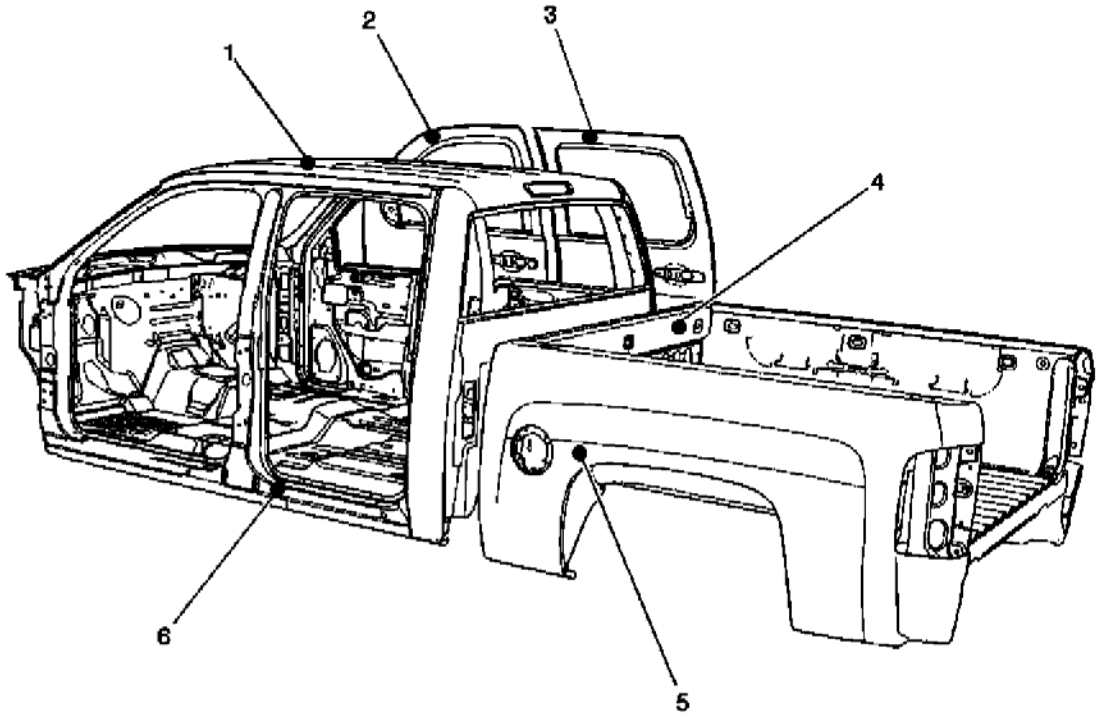


Fig. 4: Structure Description
Courtesy of GENERAL MOTORS CORP.

Number	Description	Material	Procedure
1	Roof Panel	Mild Steel	**Roof Outer Panel Replacement**
2	Front Door Panel	Mild Steel	**Front Side Door Outer Panel Replacement**
3	Rear Door Panel	Mild Steel	**Rear Side Door Outer Panel Replacement (Crew Cab)** or **Rear Side Door Outer Panel Replacement (Extended Cab)**
4	Box Front Panel	Mild Steel	**Pickup Box Front End Panel Replacement**
5	Box Side Panel	Mild Steel	• **Pickup Box Replacement - Side** • **Pickup Box Outer Side Panel Replacement (Bond-On)** or **Pickup Box Outer Side Panel Replacement (Weld-On)**
6	Body Side Outer	Mild Steel	• **Outer Windshield Frame Pillar Sectioning** • **Rocker Outer Panel Sectioning** • **Front Hinge Pillar Sectioning**

			• Center Pillar Sectioning • Rear Pillar Sectioning

REPAIR INSTRUCTIONS

FRONT FULL FRAME SECTIONING

Removal Procedure

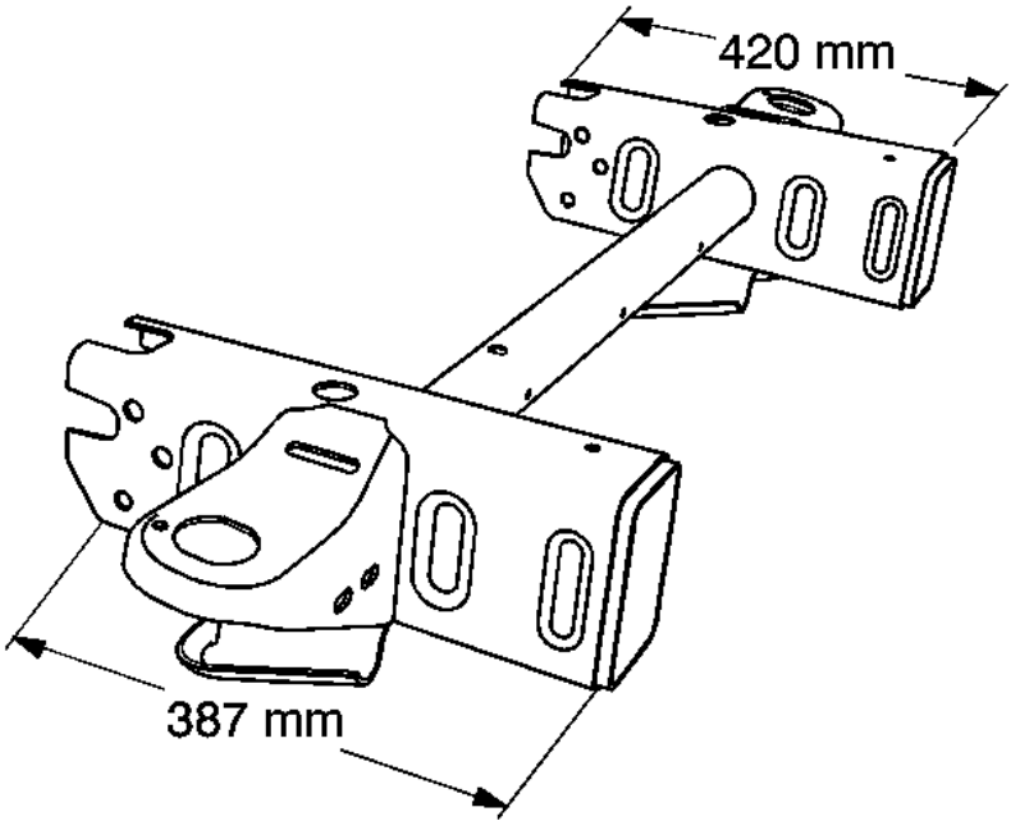


Fig. 5: Frame Sectioning - Front
Courtesy of GENERAL MOTORS CORP.

The re-designed frame assembly for the new C/K Pick-Up and Utility Trucks is a mild steel, hydroformed frame assembly. A pre-sleeved replacement front frame service section, consisting of the left and right frame rail ends, body, mounting brackets and front connecting cross tube is available. Replacement bolt-on front bumper brackets are available and must be ordered separately.

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

CAUTION: Refer to Collision Sectioning Caution .

IMPORTANT: Perform all of the steps on both of the rails for complete module replacement.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling** .
2. Disconnect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .
3. Remove all of the related panels and components.

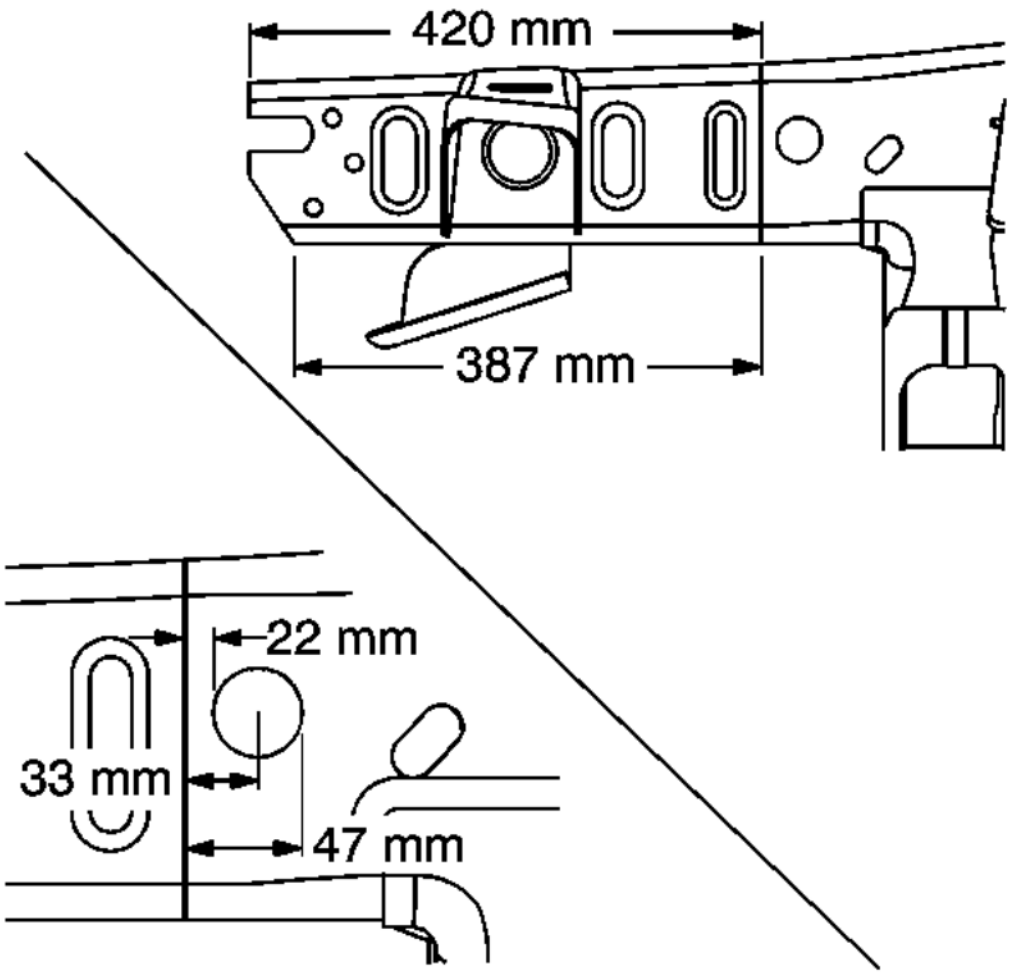


Fig. 6: Frame Measurements
Courtesy of GENERAL MOTORS CORP.

4. Locate and mark the sectioning location by using at least 2 of the measurements below for each frame rail:
    - Top of the frame rail edge rearward 420 mm (16 1/2 in) (with bumper bracket removed)
    - Bottom of the frame rail edge rearward 387 mm (15 3/16 in) (with bumper bracket removed)
    - Front edge of the gage hole forward 22 mm (7/8 in)
    - Center of the gage hole forward 33 mm (1 1/4)
    - Rear edge of the gage hole forward 47 mm (1 7/8 in)

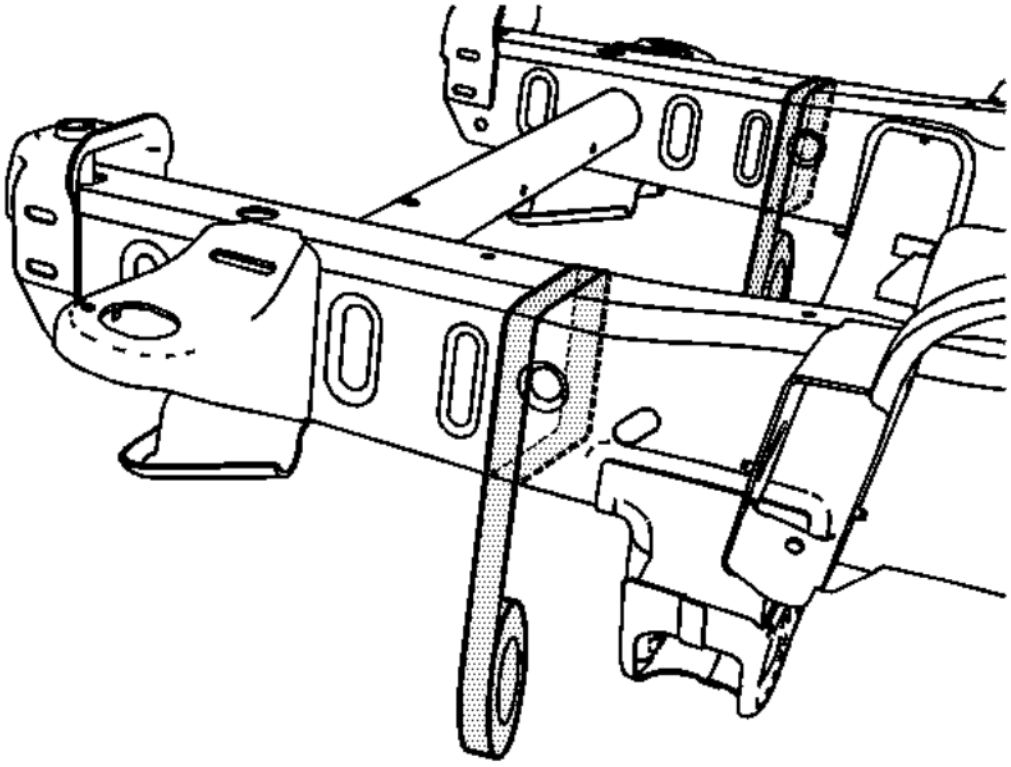


Fig. 7: Marking Sectioning Location With Masking Tape
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Line up the masking tape with the tape edge facing the front of the vehicle on the sectioning location.

5. Apply masking tape completely around the frame rail next to the sectioning location as shown.

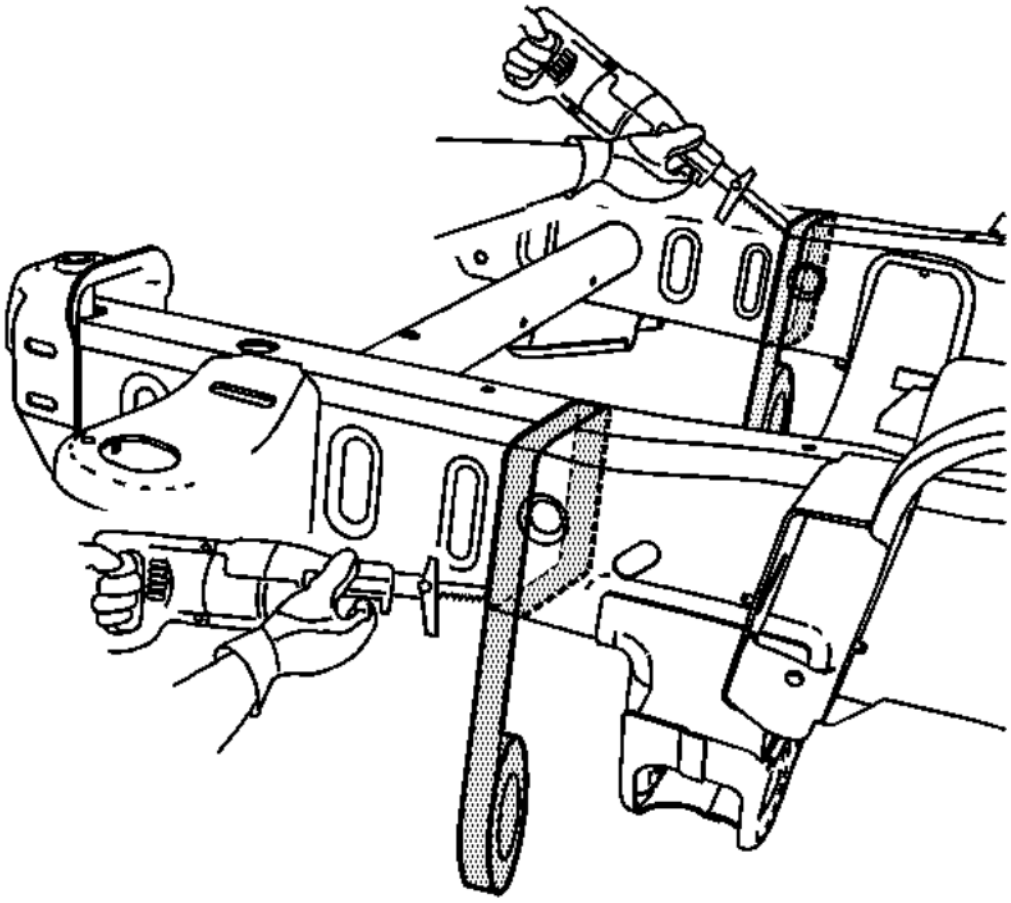


Fig. 8: Cutting Frame Rail With Reciprocating Saw
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The tape edge facing the front of the vehicle is the proper cut location.

6. Cut each frame rail at the front edge of the tape line using a reciprocating saw or equivalent, as shown.

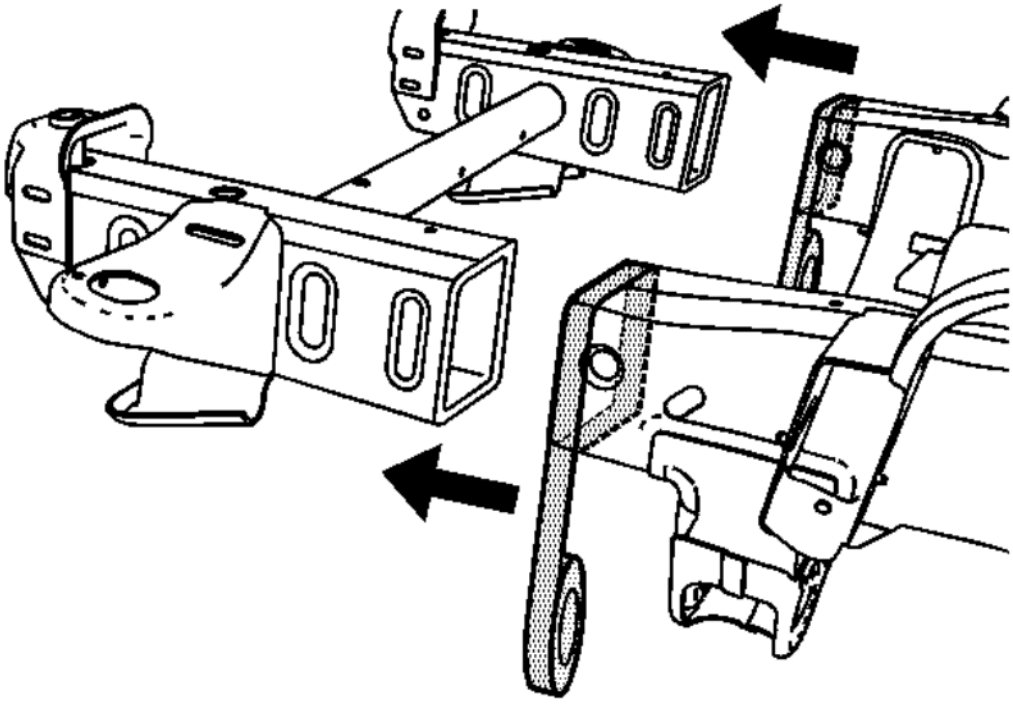


Fig. 9: View Of Damaged Frame Section
Courtesy of GENERAL MOTORS CORP.

7. Remove the damaged frame section.

Installation Procedure

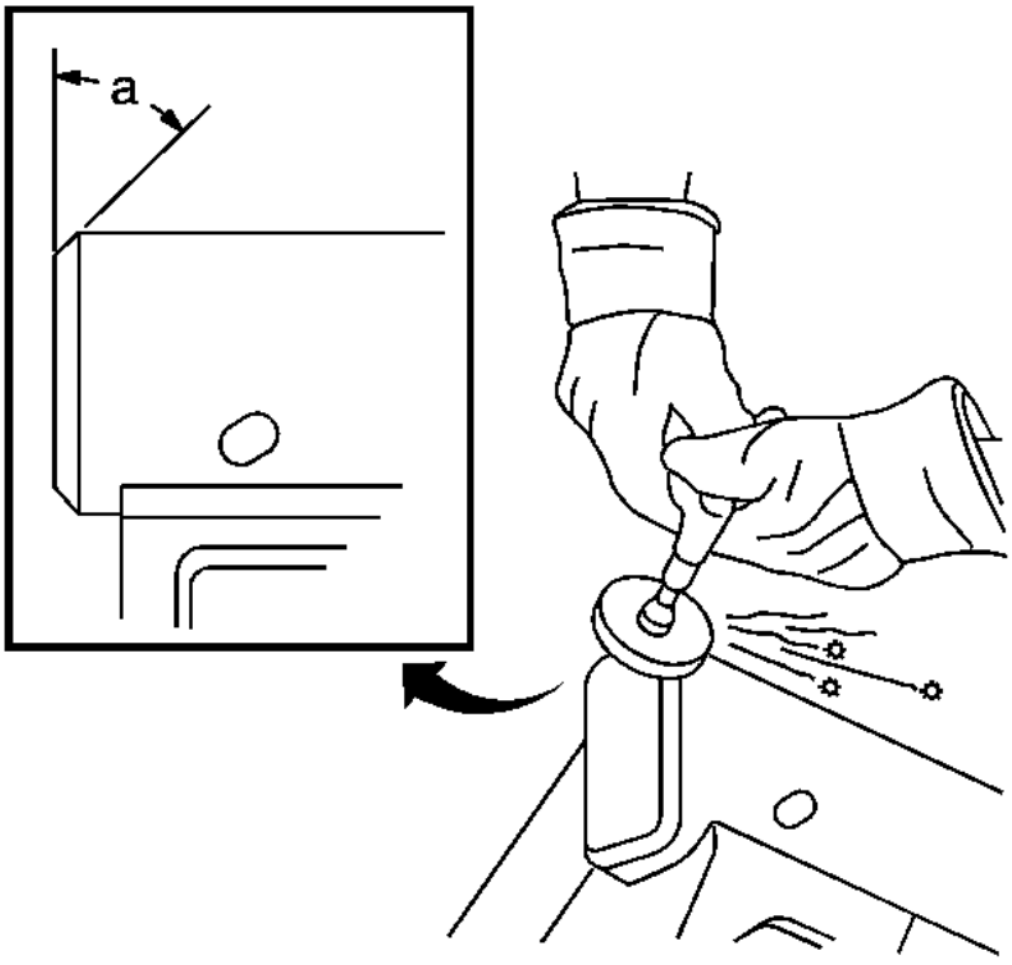


Fig. 10: Grinding Existing Frame Rail Seam To Taper Seam
Courtesy of GENERAL MOTORS CORP.

1. Grind the existing frame rail seam to taper seam at a 45 degree angle.
2. Prepare all of the attaching surfaces as necessary.
3. Apply the weld-thru primer to all of the welded surfaces.

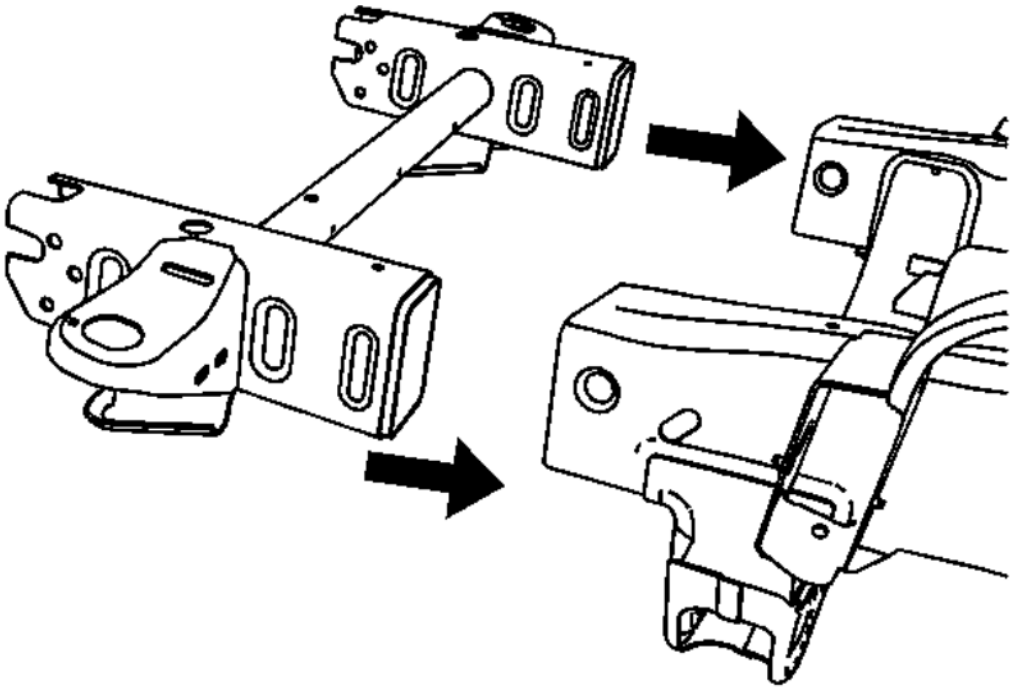


Fig. 11: Positioning New Frame Section To Existing Frame
Courtesy of GENERAL MOTORS CORP.

4. Position the service frame section to the existing frame and clamp in place.

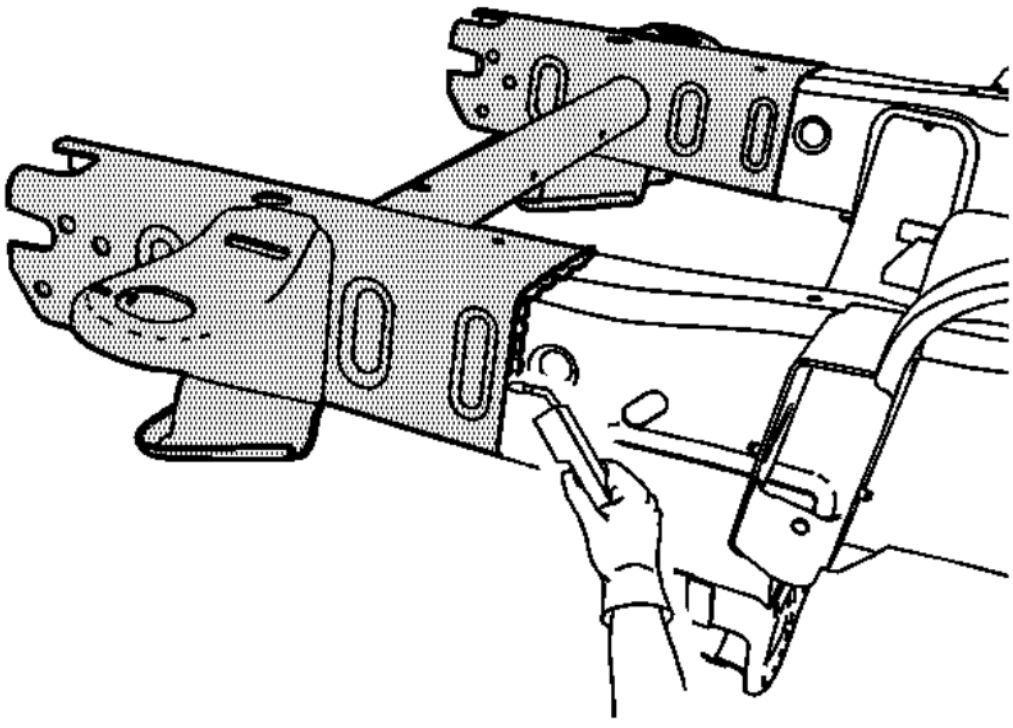


Fig. 12: Welding The Frame Sections
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Verify the frame measurements 3-dimensionally to ensure proper position of the service frame.

5. Continuous-weld the upper and lower horizontal joints threw each corner.
6. Continuous-weld the inner and outer vertical joints from corner to corner.

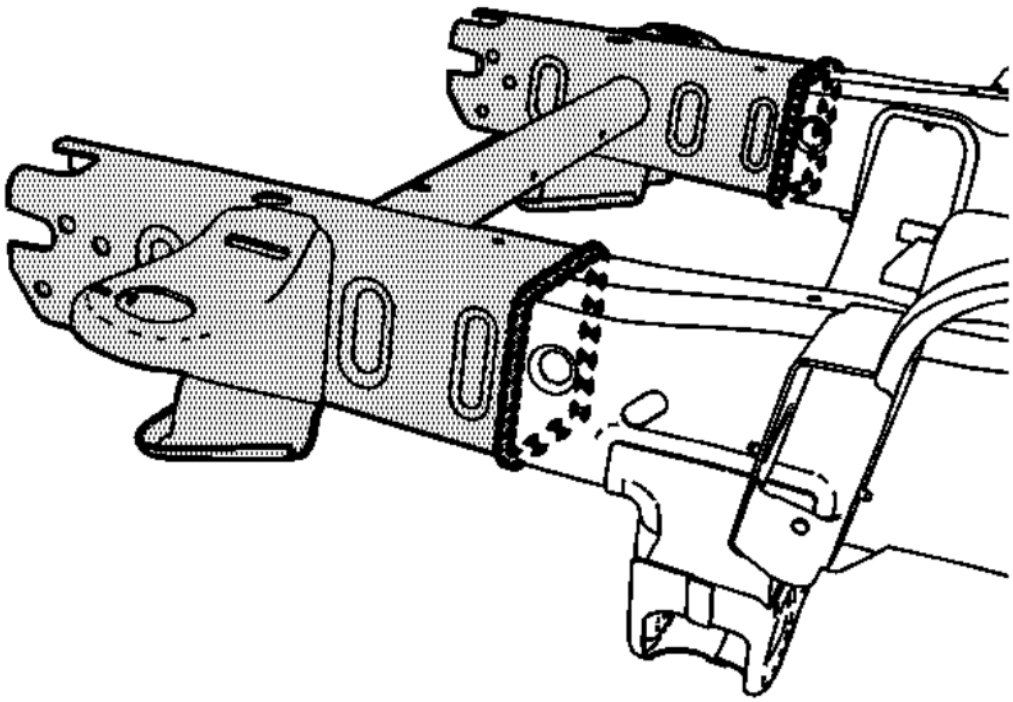


Fig. 13: View Of Welded Frame
Courtesy of GENERAL MOTORS CORP.

7. Clean and prepare all of the welded surfaces.
8. Install all of the related panels and components.
9. Connect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .
10. Enable the SIR system. Refer to **SIR Disabling and Enabling** .

OUTER WINDSHIELD FRAME PILLAR SECTIONING

Removal Procedure

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

CAUTION: Refer to Glass and Sheet Metal Handling Caution .

CAUTION: Refer to Collision Sectioning Caution .

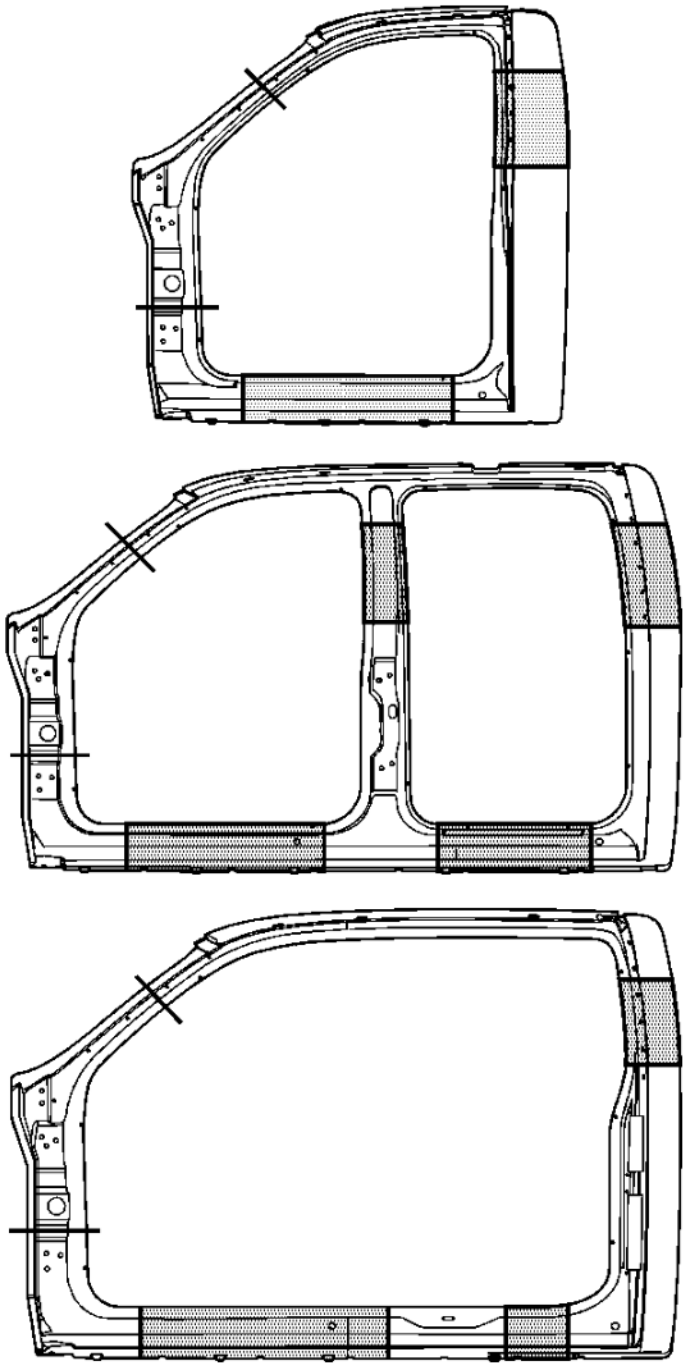


Fig. 14: View Of Sectioned Frame Areas
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The door frame can be replaced at the factory seams, but requires the

removal of the windshield, roof, and quarter panel. The sectioning procedures have been developed as a more cost-effective alternative to complete replacement. The specific area to be sectioned is determined by the extent of the damage to the vehicle.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling** .
2. Disconnect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .
3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications. Refer to **Dimensions - Body**.

CAUTION: Refer to Foam Sound Deadeners Caution .

5. Note the location and remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
6. Perform additional sectioning procedures as necessary. Refer to the following procedures:
   - **Rocker Outer Panel Sectioning**
   - **Front Hinge Pillar Sectioning**
   - **Center Pillar Sectioning**
   - **Rear Pillar Sectioning**

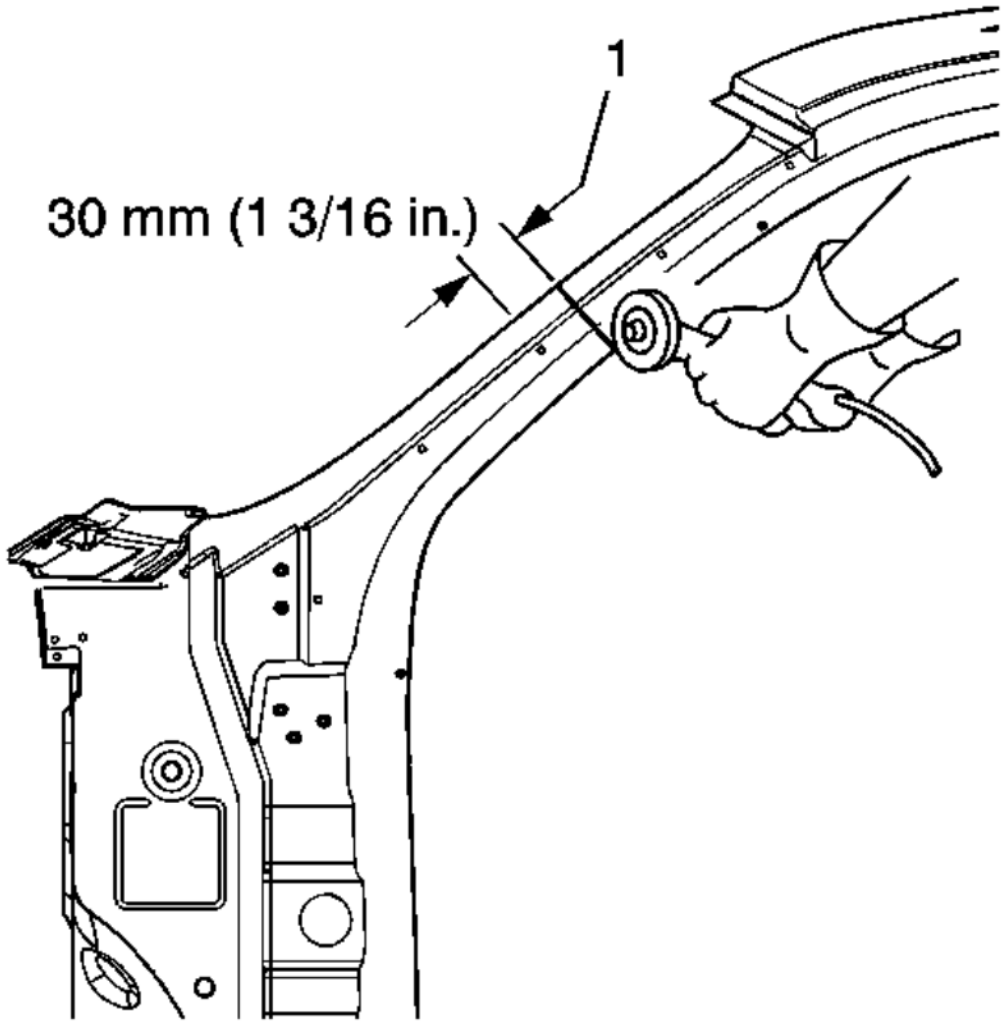


Fig. 15: Cutting The Panels
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Perform the sectioning in the windshield area 30 mm (1 3/16 in) above the third trim mounting hole (1).

IMPORTANT: Do not damage any inner panels or reinforcements.

7. Cut the panel in the locations where sectioning is to be performed.

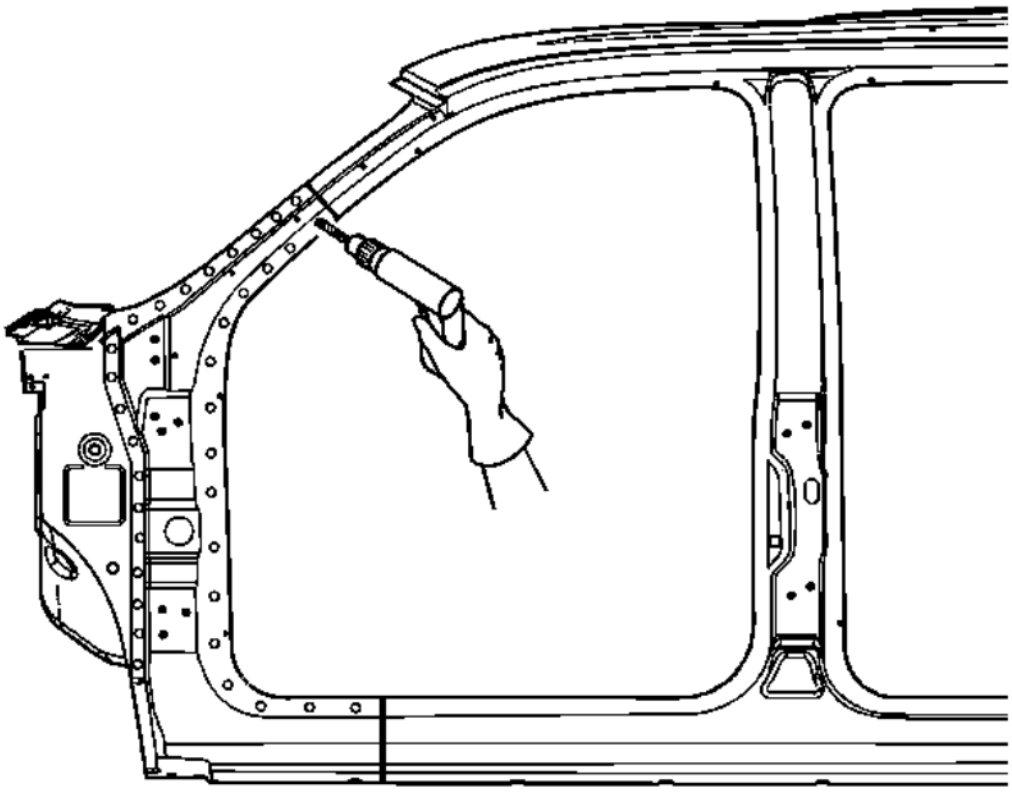


Fig. 16: Drilling Out Factory Welds
Courtesy of GENERAL MOTORS CORP.

8. Locate and drill out all factory welds. Note the number and location of the welds for installation of the service part.

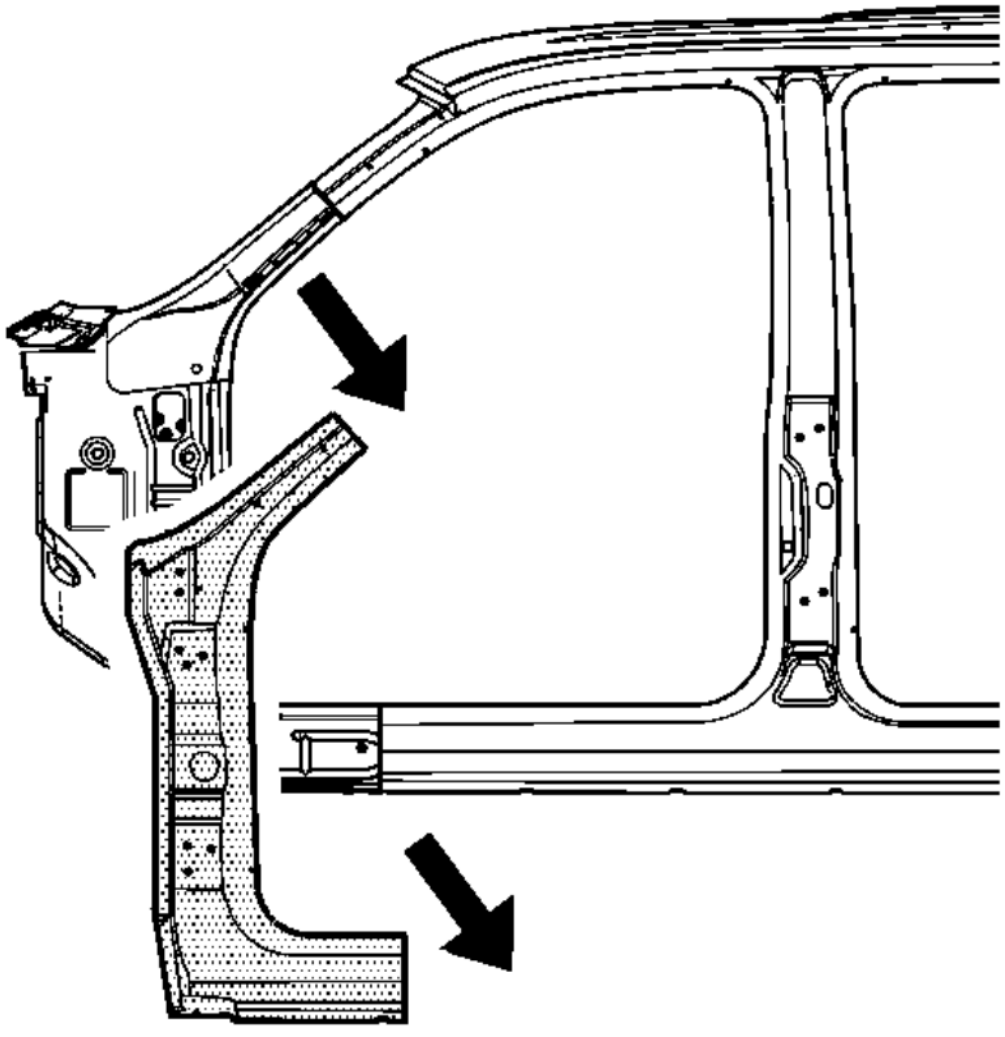


Fig. 17: View Of Damaged Section
Courtesy of GENERAL MOTORS CORP.

9. Remove the damaged body side.

Installation Procedure

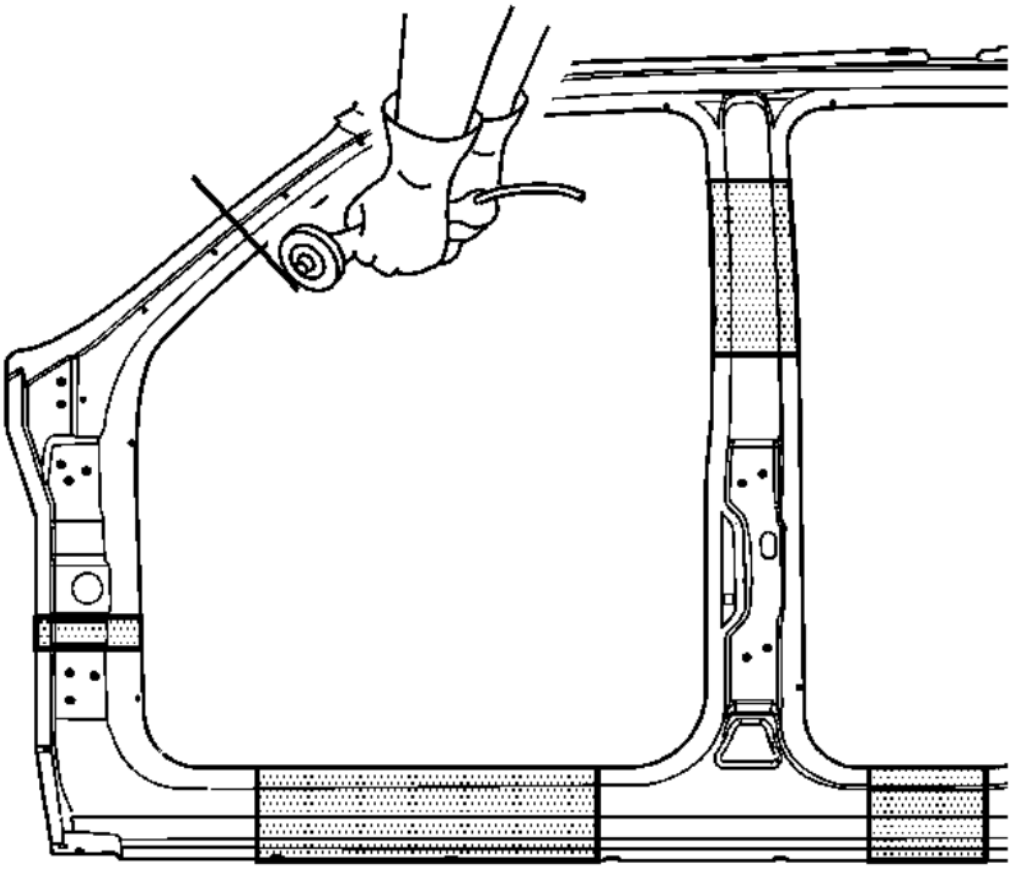


Fig. 18: Cutting The Panel
Courtesy of GENERAL MOTORS CORP.

1. Cut the replacement body side in corresponding locations to fit the remaining original panel. The sectioning joint should be trimmed to allow a gap of 11/2 times the metal thickness at the sectioning joint.

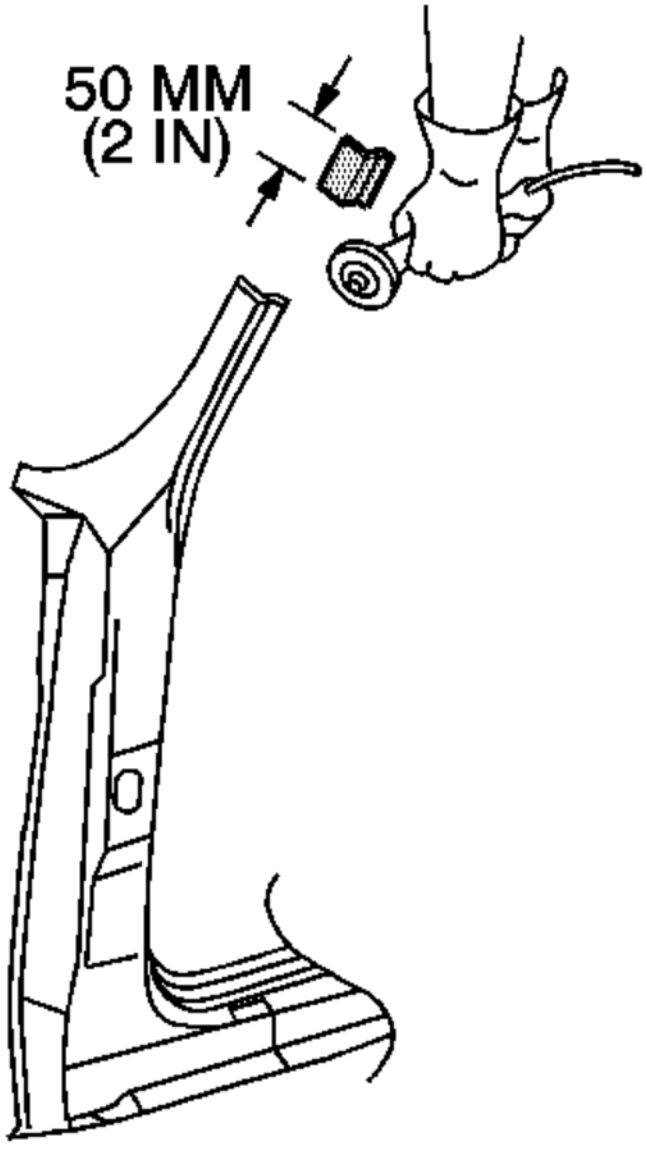


Fig. 19: View Of 50 mm Backing Plate
Courtesy of GENERAL MOTORS CORP.

2. Create a 50 mm (2 in) backing plate from the unused portion of the service part. Trim the backing plate as necessary to fit behind the sectioning joint.

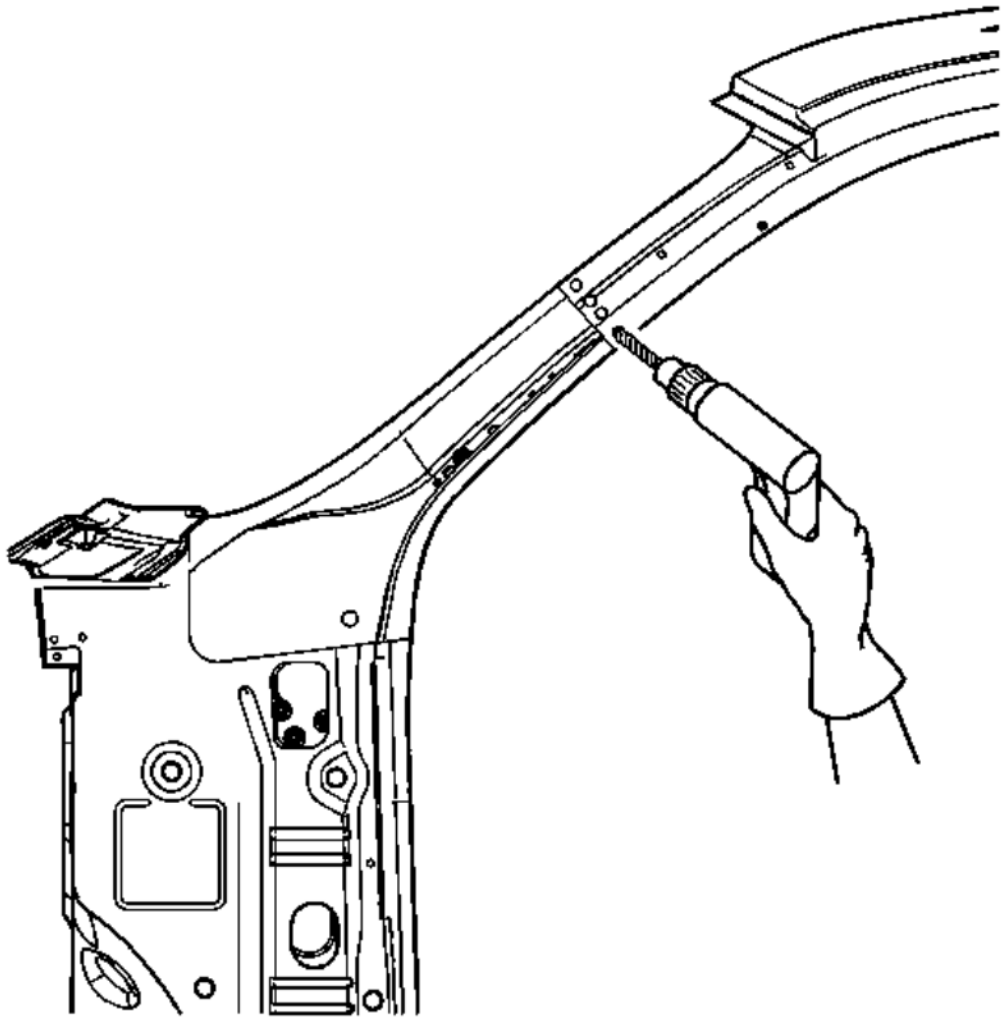


Fig. 20: Drilling 8 mm Plug Weld Holes
Courtesy of GENERAL MOTORS CORP.

3. Drill 8 mm (5/16 in) plug weld holes along the sectioning cut on the remaining original part. Locate these holes approximately 25 mm (1 in) (a) from the edge and spaced 40 mm (1 1/2 in) apart.

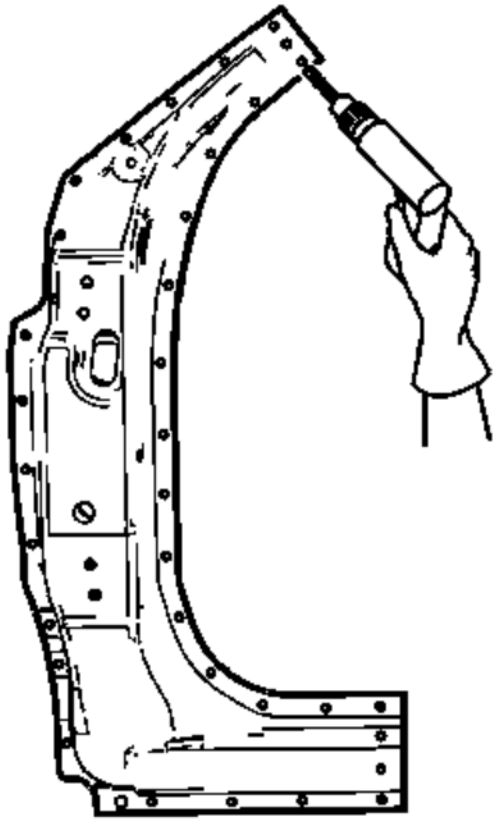


Fig. 21: Drilling Windshield Frame Pillar Plug Weld Holes
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: If the location of the original plug weld holes can not be determined, or if structural weld-thru adhesive was present, space the plug weld holes every 40 mm (1 1/2 in) apart.

4. Drill 8 mm (5/16 in) plug weld holes in the service part as necessary in the locations noted from the original panel and along the sectioning cut.

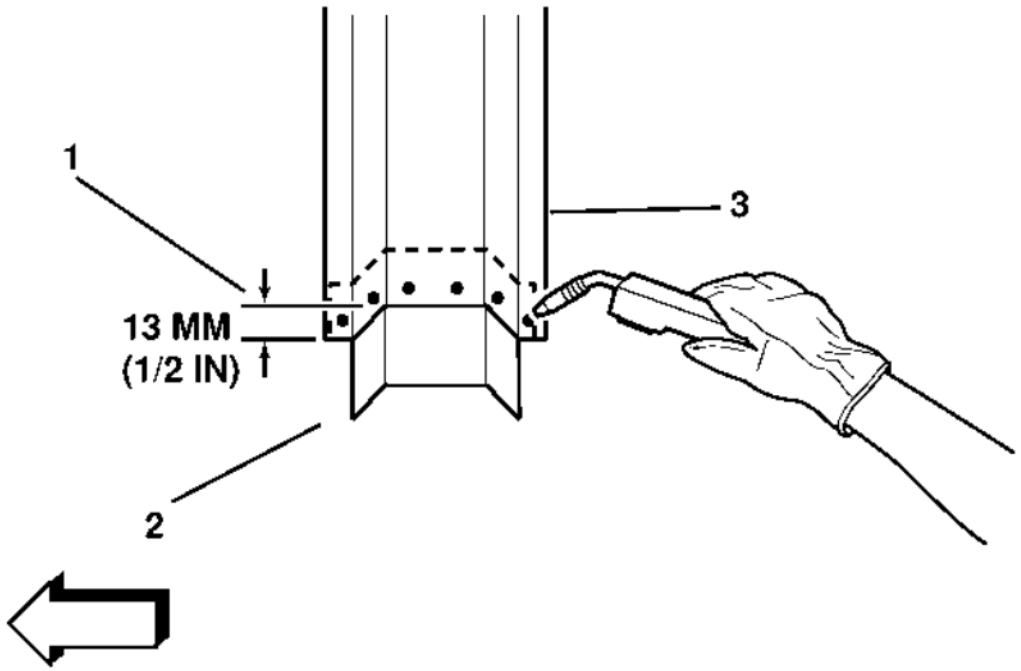


Fig. 22: Plug Welding Backing Plate
Courtesy of GENERAL MOTORS CORP.

5. Prepare all attachment surfaces as necessary.
6. Apply GM-approved Weld-Thru Coating or equivalent to all mating surfaces. Refer to **Anti-Corrosion Treatment and Repair** .
7. Fit the backing plate (2) halfway into the sectioning joint, clamp and plug weld to the vehicle (3).

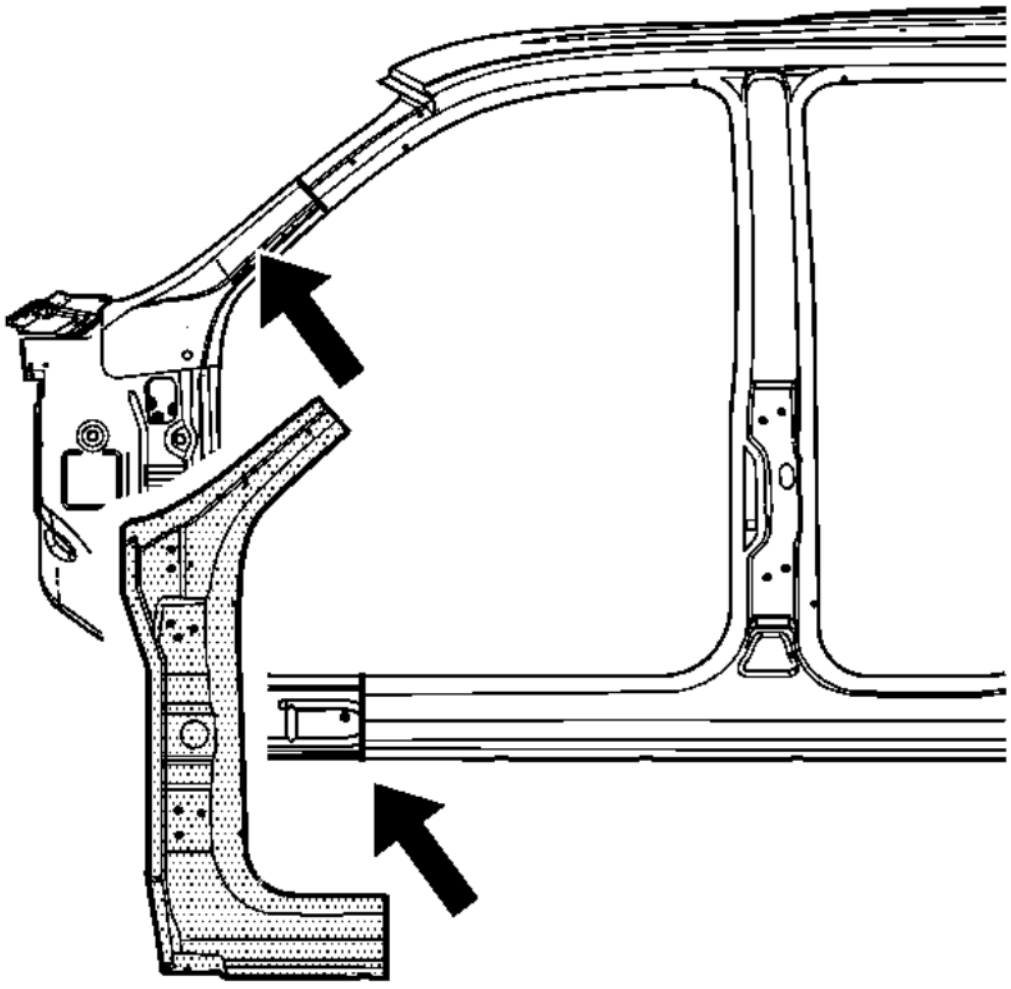


Fig. 23: View Of New Section
Courtesy of GENERAL MOTORS CORP.

8. Position the body side to the vehicle using 3-dimensional measuring equipment. Clamp in place.

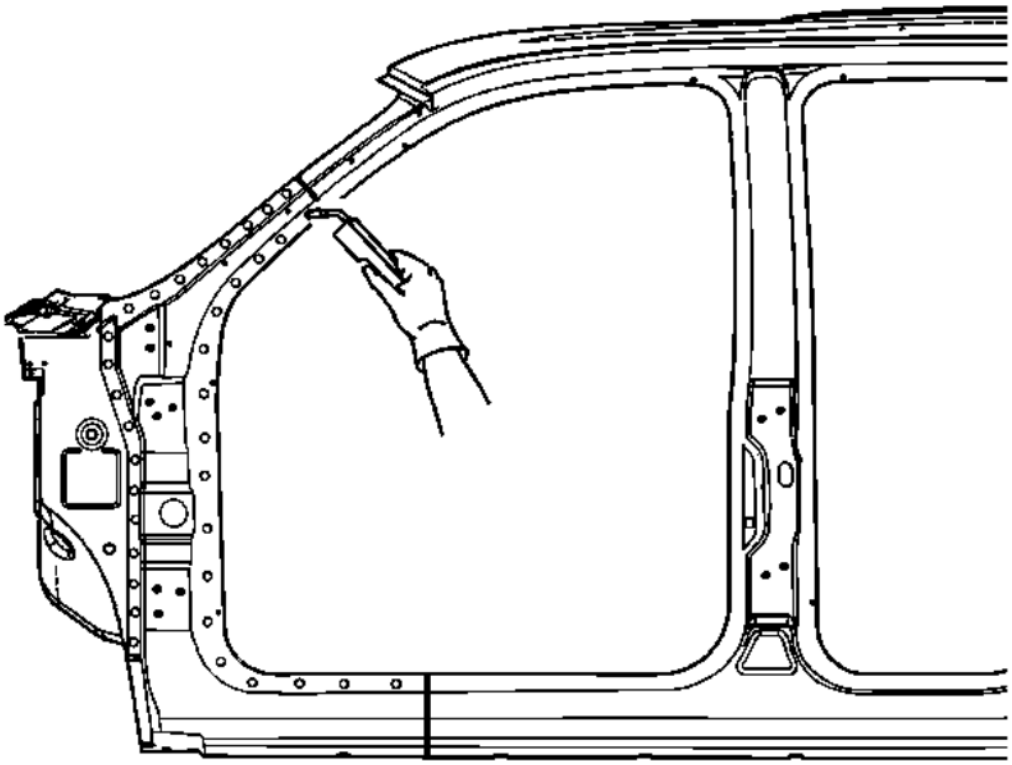


Fig. 24: Plug Welding Frame
Courtesy of GENERAL MOTORS CORP.

9. Plug weld accordingly.

IMPORTANT: To create a solid weld with minimum heat distortion, make 25 mm (1 in) stitch welds along the seam with 25 mm (1 in) gaps between them. Complete the stitch weld.

10. Clean and prepare all welded surfaces.
11. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
12. Paint the repair area. Refer to **Basecoat/Clearcoat Paint Systems** .
13. Install all related panels and components.
14. Connect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .

15. Enable the SIR system. Refer to **SIR Disabling and Enabling** .

ROOF OUTER PANEL REPLACEMENT

Removal Procedure

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

CAUTION: Refer to Glass and Sheet Metal Handling Caution .

IMPORTANT: This procedure shows the crew cab pickup; the extended cab and the regular cab are similar.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling** .
2. Disconnect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .

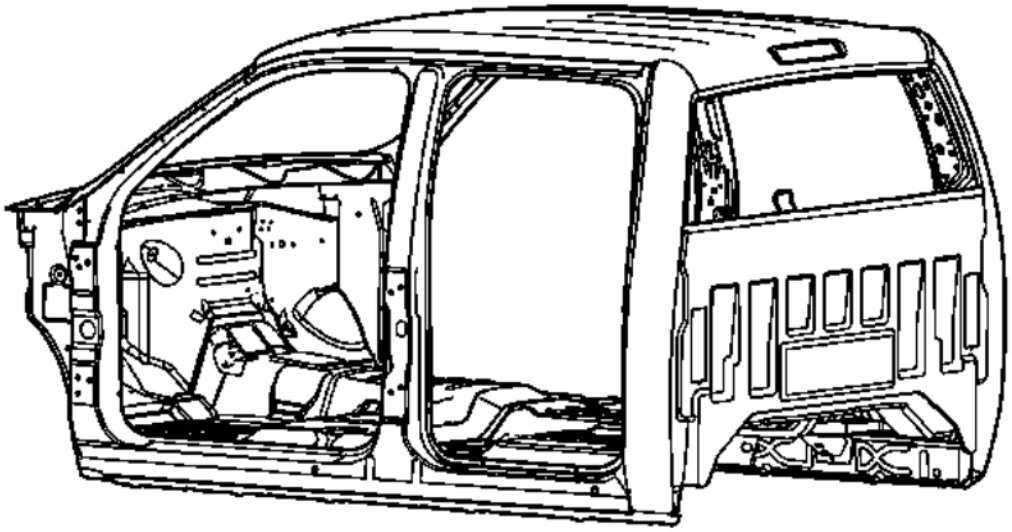


Fig. 25: View Of Crew Cab
Courtesy of GENERAL MOTORS CORP.

3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications.

CAUTION: Refer to Foam Sound Deadeners Caution .

5. Note the location and remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .

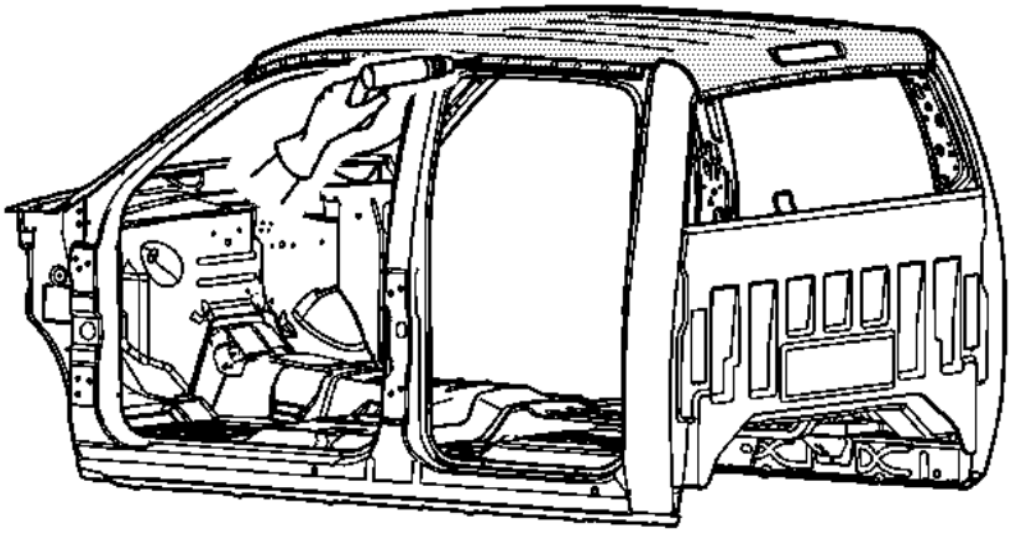


Fig. 26: Drilling Out Factory Welds
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not damage any inner panels or reinforcements.

6. Locate and drill out all factory welds. Note the number and location of the welds for installation of the roof panel.

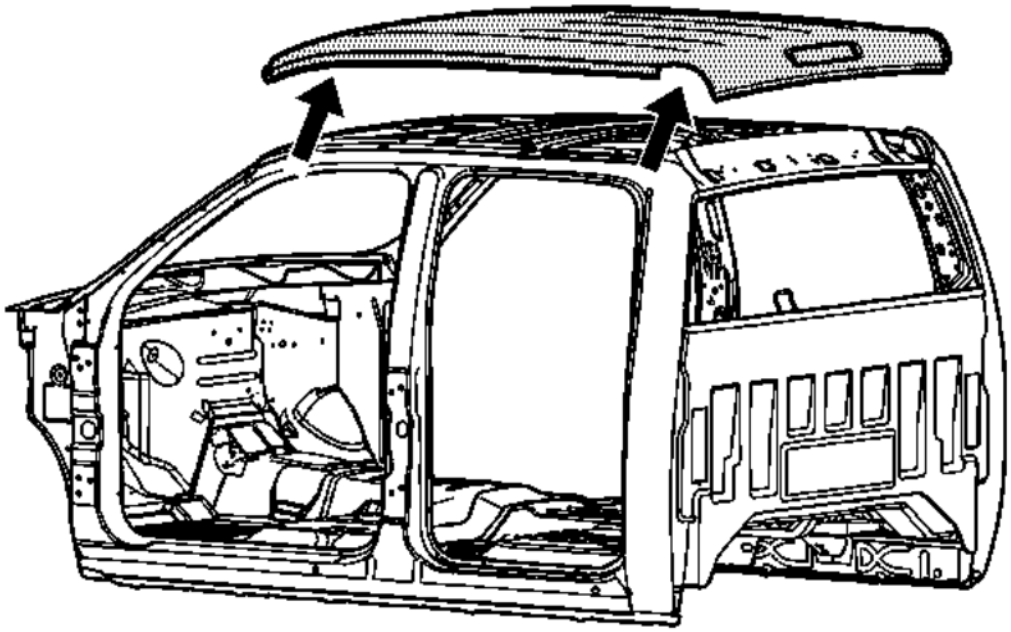


Fig. 27: View Of Damaged Roof Panel
Courtesy of GENERAL MOTORS CORP.

7. Remove the damaged roof panel.

Installation Procedure

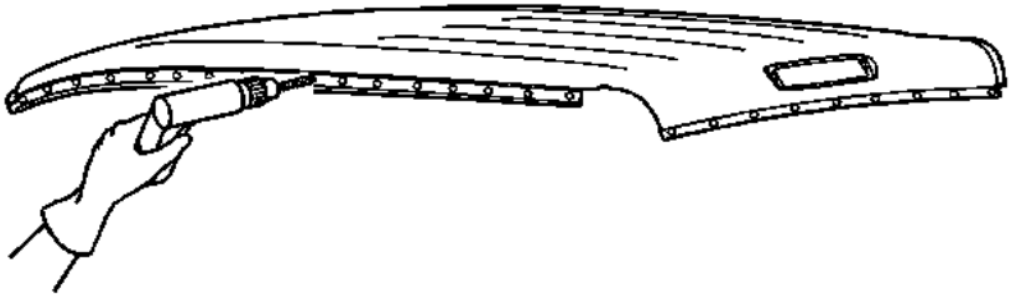


Fig. 28: Drilling Plug Weld Holes
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: If the location of the original plug weld holes can not be determined, or if structural weld-thru adhesive was present, space the plug weld holes every 40 mm (1 1/2 in) apart.

1. Drill 8 mm (5/16 in) plug weld holes in the service part as necessary in the locations noted from the original panel.
2. Prepare all attachment surfaces as necessary.

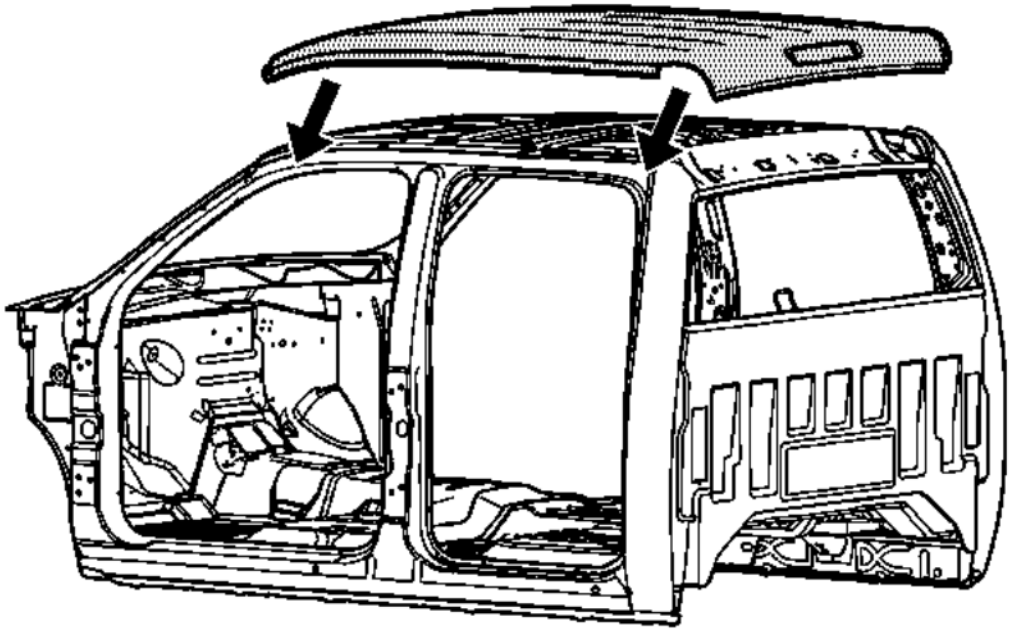


Fig. 29: View Of Roof Panel
Courtesy of GENERAL MOTORS CORP.

3. Apply GM-approved Weld-Thru Coating or equivalent to all mating surfaces. Refer to **Anti-Corrosion Treatment and Repair** .
4. Position the roof panel.

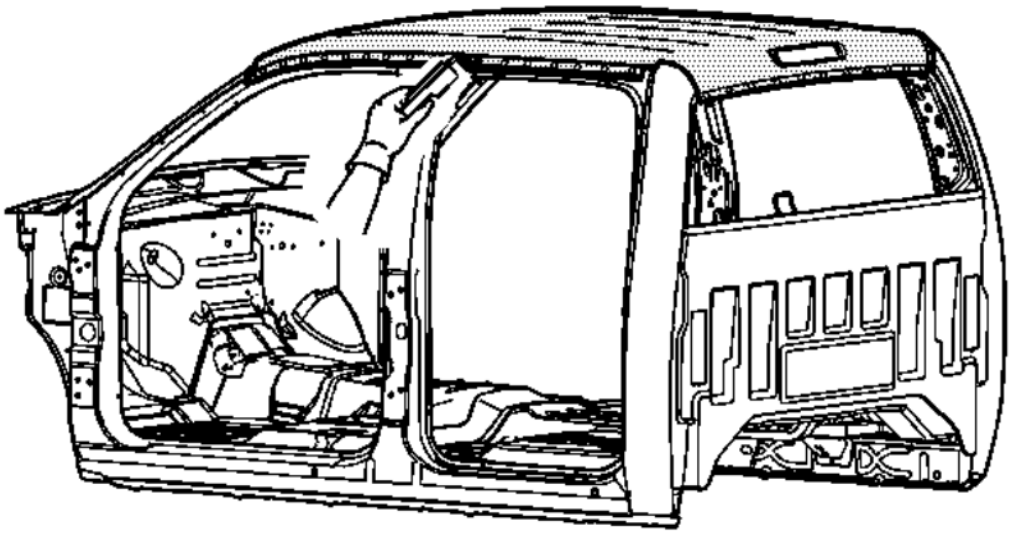


Fig. 30: Plug Welding Cab
Courtesy of GENERAL MOTORS CORP.

5. Plug weld accordingly.

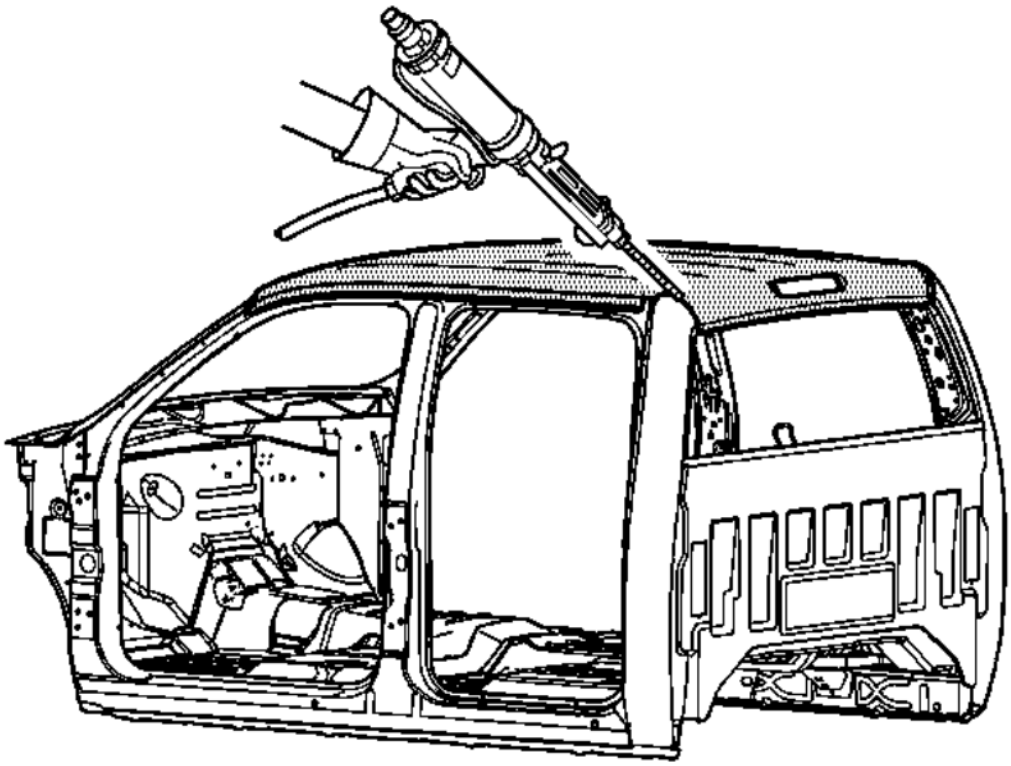


Fig. 31: Applying Sealer To Repair Area
Courtesy of GENERAL MOTORS CORP.

6. Clean and prepare all welded surfaces.
7. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
8. Paint the repair area. Refer to **Basecoat/Clearcoat Paint Systems** .
9. Install all related panels and components.
10. Connect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .
11. Enable the SIR system. Refer to **SIR Disabling and Enabling** .

ROCKER OUTER PANEL SECTIONING

Removal Procedure

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

CAUTION: Refer to Glass and Sheet Metal Handling Caution .

CAUTION: Refer to Collision Sectioning Caution .

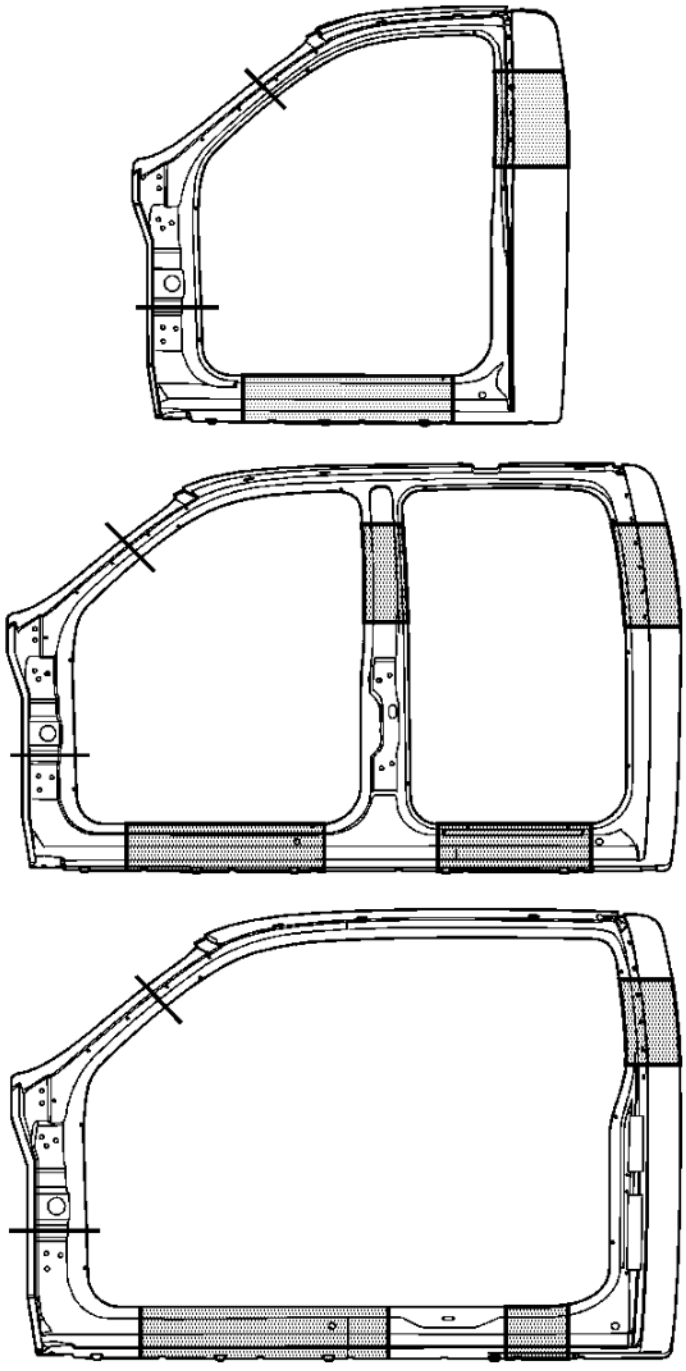


Fig. 32: View Of Sectioned Frame Areas
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The door frame can be replaced at the factory seams, but requires the

removal of the windshield, roof, and quarter panel. The sectioning procedures have been developed as a more cost-effective alternative to complete replacement. The specific area to be sectioned is determined by the extent of the damage to the vehicle.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling** .
2. Disconnect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .
3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications. Refer to **Dimensions - Body**.

CAUTION: Refer to Foam Sound Deadeners Caution .

5. Note the location and remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
6. Perform additional sectioning procedures as necessary. Refer to the following procedures:
   - **Outer Windshield Frame Pillar Sectioning**
   - **Front Hinge Pillar Sectioning**
   - **Center Pillar Sectioning**
   - **Rear Pillar Sectioning**

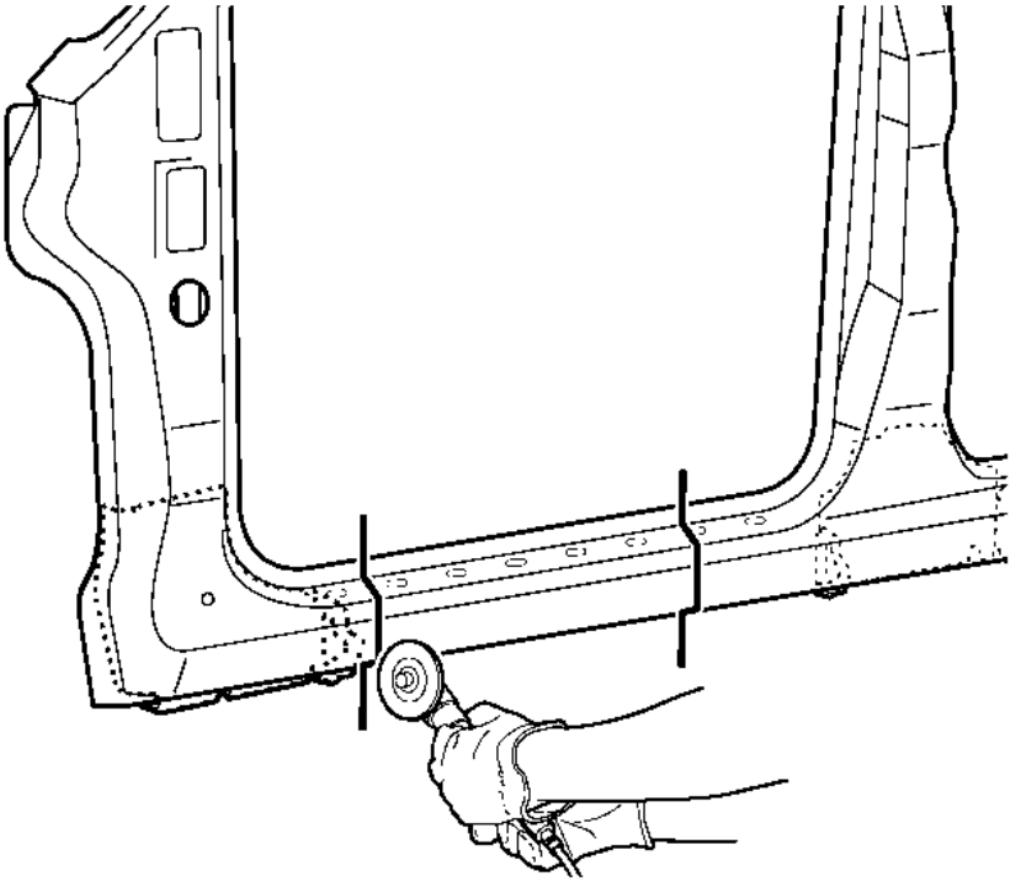


Fig. 33: Cutting Rocker Panel Section
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not damage any inner panels or reinforcements.

7. Cut the panel in the locations where sectioning is to be performed.

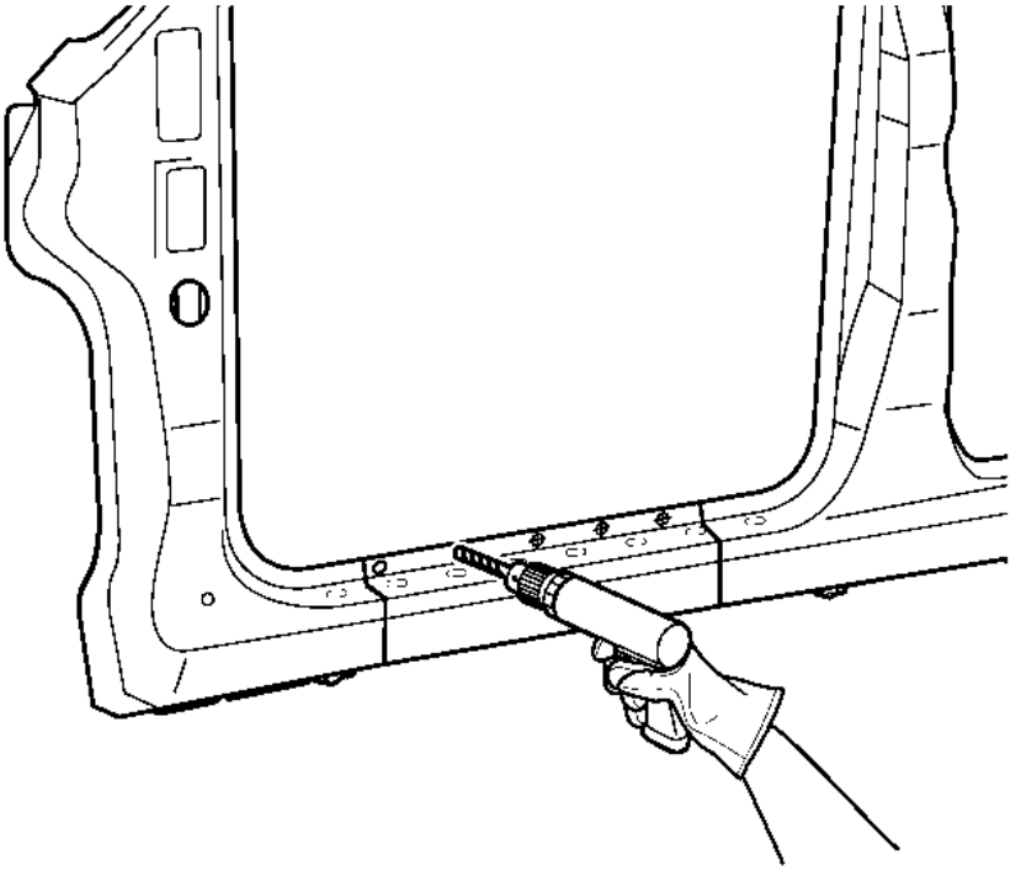


Fig. 34: Locating & Drilling Out Factory Welds On Rocker Panel Section
Courtesy of GENERAL MOTORS CORP.

8. Locate and drill out all factory welds. Note the number and location of the welds for installation of the service part.

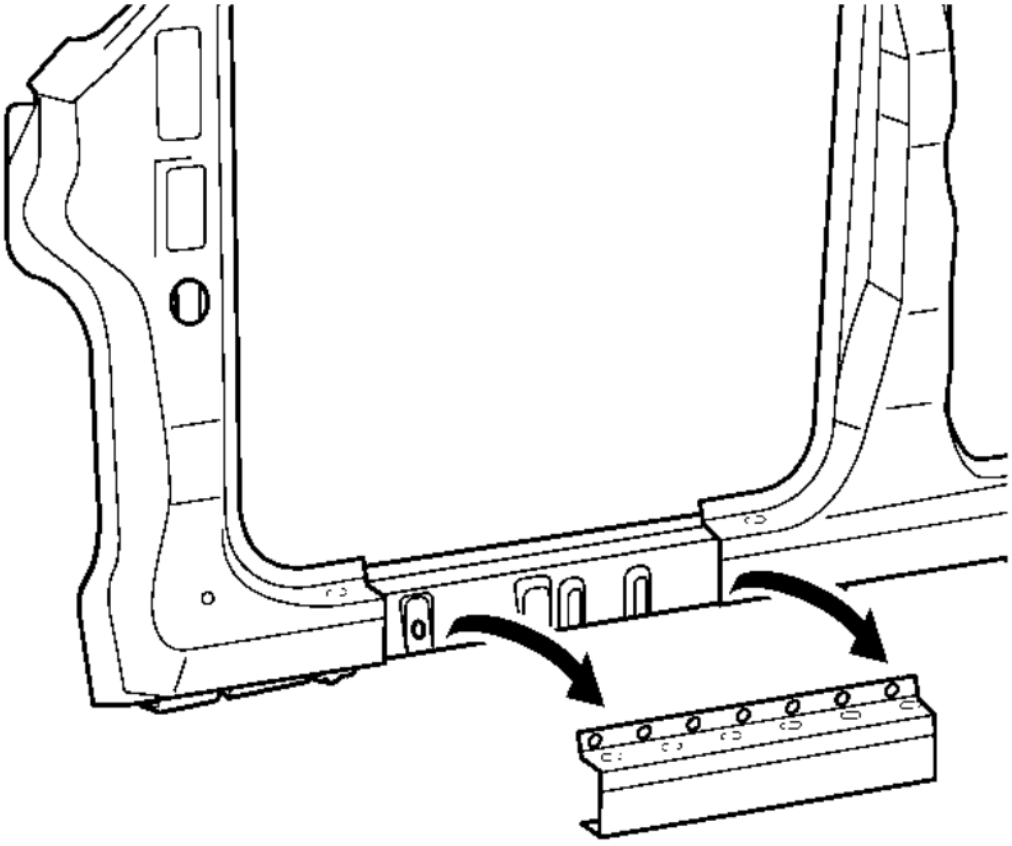


Fig. 35: View Of Damaged Rocker Panel Section
Courtesy of GENERAL MOTORS CORP.

9. Remove the damaged body side.

Installation Procedure

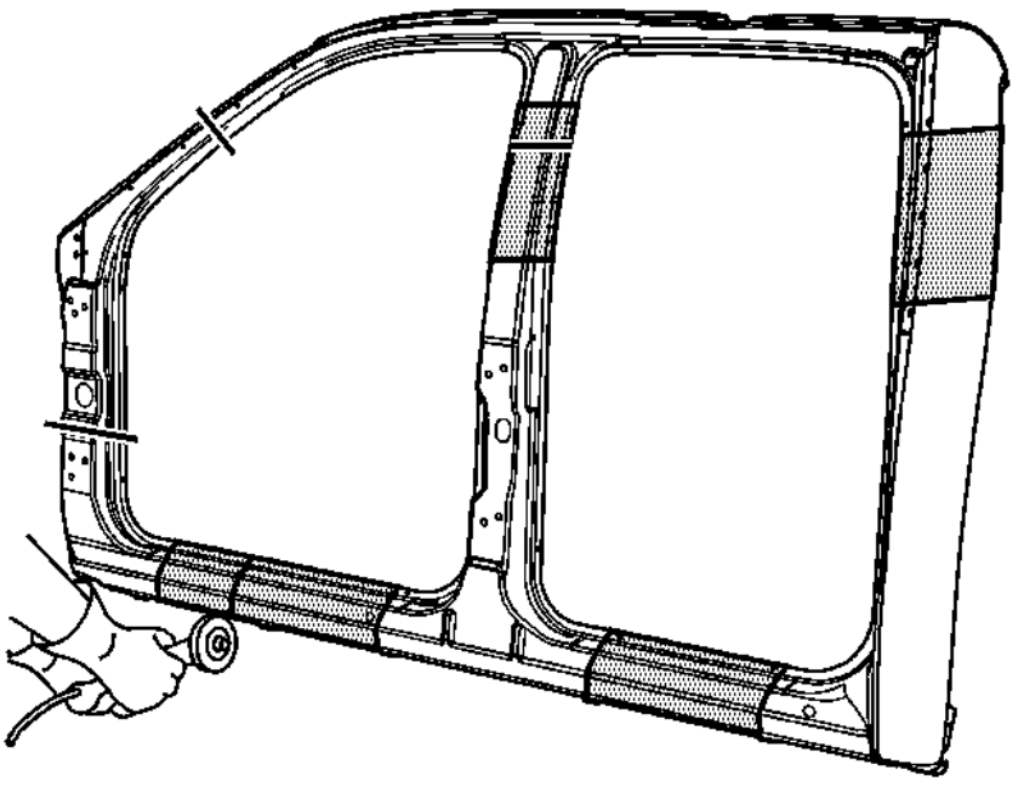


Fig. 36: Cutting Damaged Section
Courtesy of GENERAL MOTORS CORP.

1. Cut the replacement body side in corresponding locations to fit the remaining original panel. The sectioning joint should be trimmed to allow a gap of 11/2 times the metal thickness at the sectioning joint.

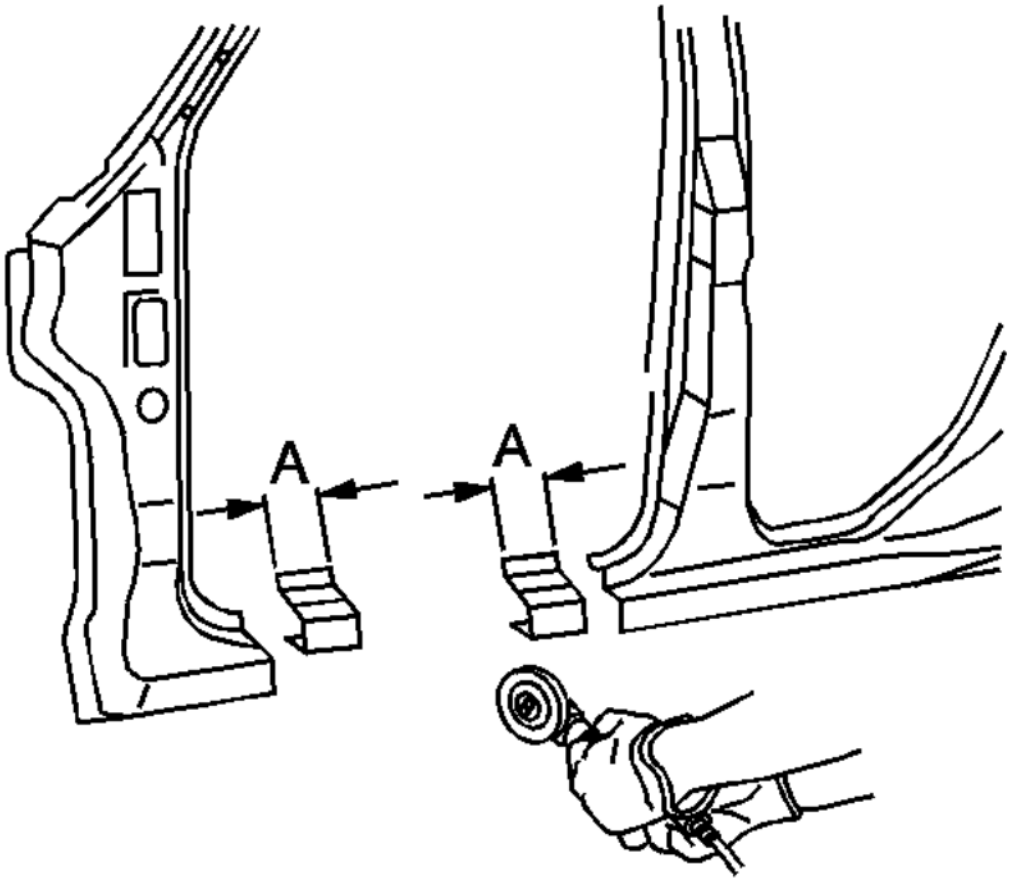


Fig. 37: Creating & Trimming Backing Plate
Courtesy of GENERAL MOTORS CORP.

2. Create a 100 mm (4 in) (a) backing plate from the unused portion of the service part. Trim the backing plate as necessary to fit behind the sectioning joint where there is no reinforcement.

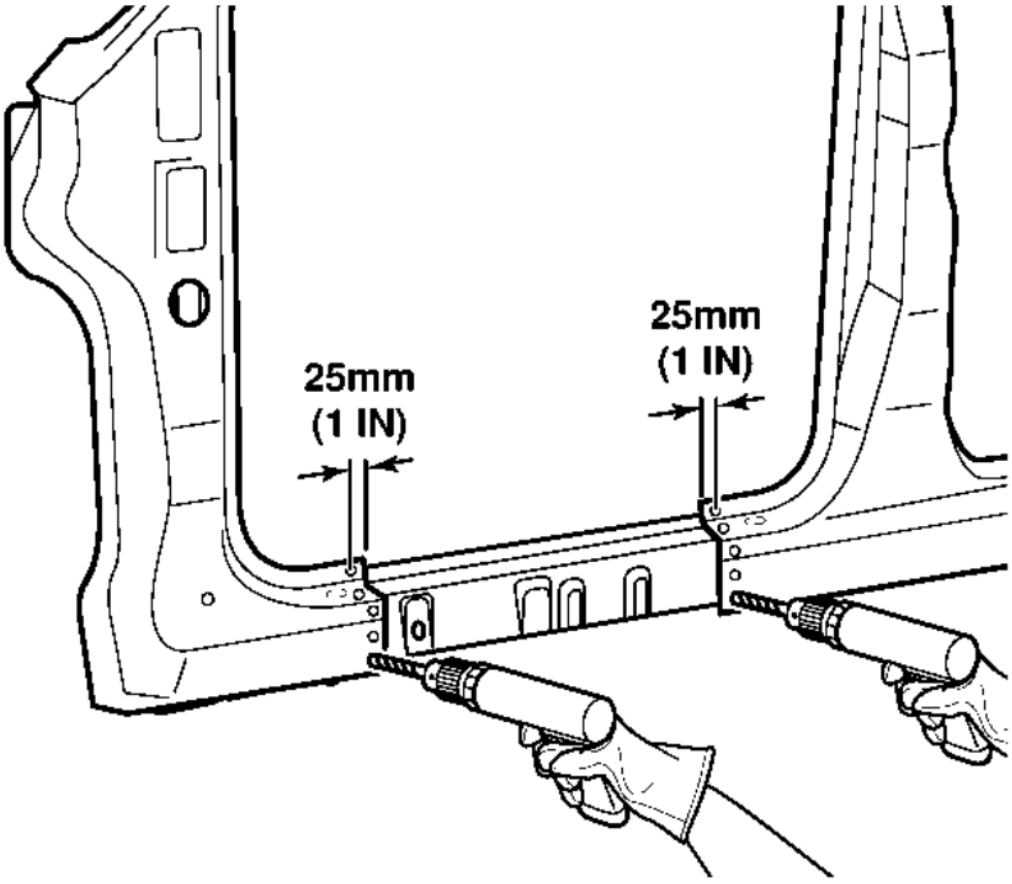


Fig. 38: Drilling Plug Weld Holes Along Sectioning Cut
Courtesy of GENERAL MOTORS CORP.

3. Drill 8 mm (5/16 in) plug weld holes along the sectioning cut on the remaining original part. Locate these holes approximately 25 mm (1 in) from the edge and spaced 40 mm (1 1/2 in) apart.

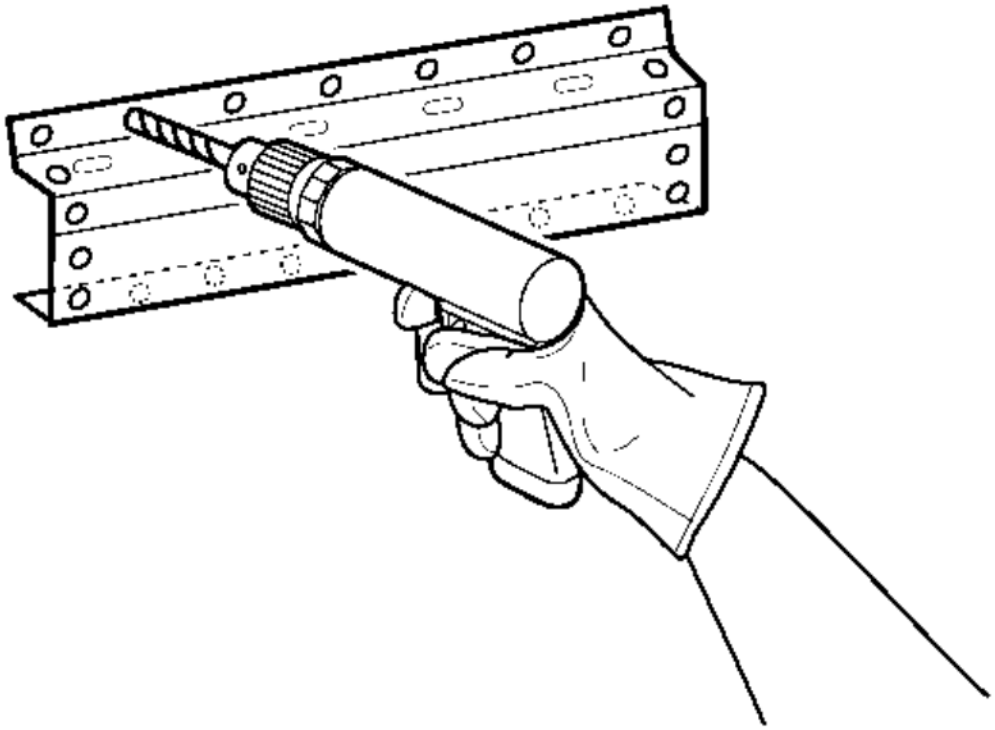


Fig. 39: Drilling Plug Weld Holes In Rocker Panel Section
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: If the location of the original plug weld holes can not be determined, or if structural weld-thru adhesive was present, space the plug weld holes every 40 mm (1 1/2 in) apart.

4. Drill 8 mm (5/16 in) plug weld holes in the service part as necessary in the locations noted from the original panel and along the sectioning cut.

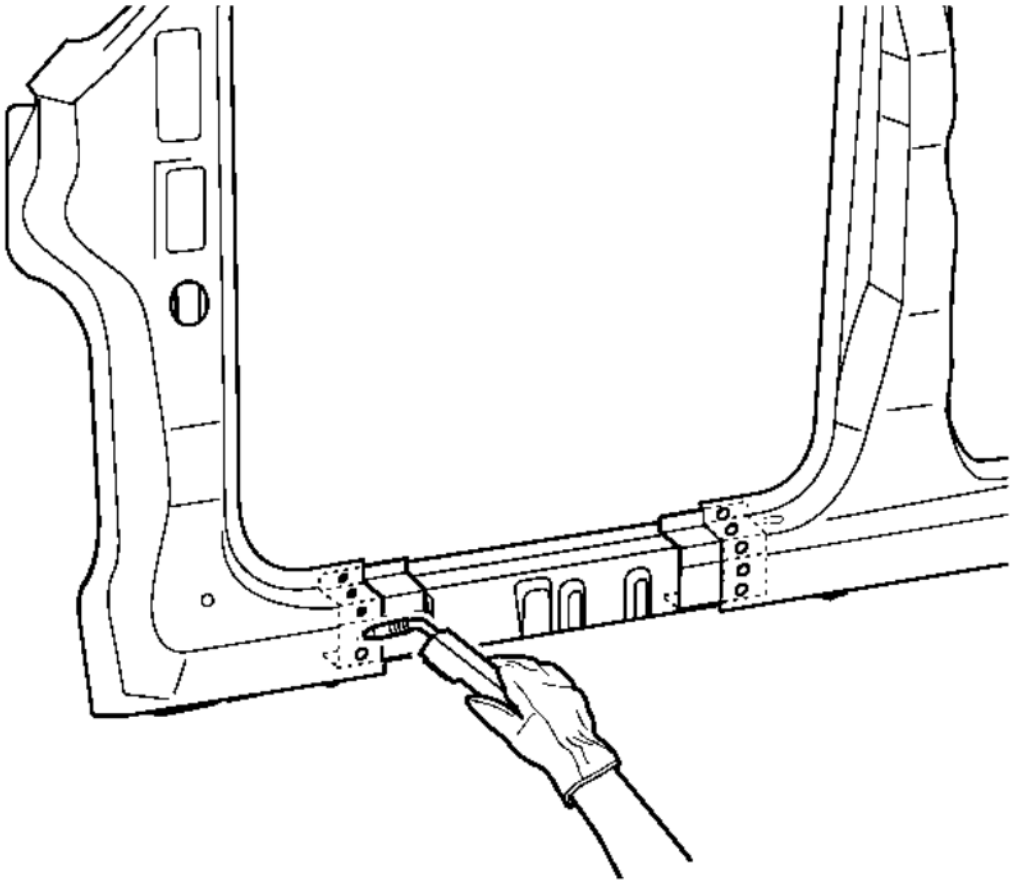


Fig. 40: Fitting & Plug Weld Backing Plate To Vehicle
Courtesy of GENERAL MOTORS CORP.

5. Prepare all attachment surfaces as necessary.
6. Apply GM-approved Weld-Thru Coating or equivalent to all mating surfaces. Refer to **Anti-Corrosion Treatment and Repair** .
7. Fit the backing plate halfway into the sectioning joint, clamp and plug weld to the vehicle.

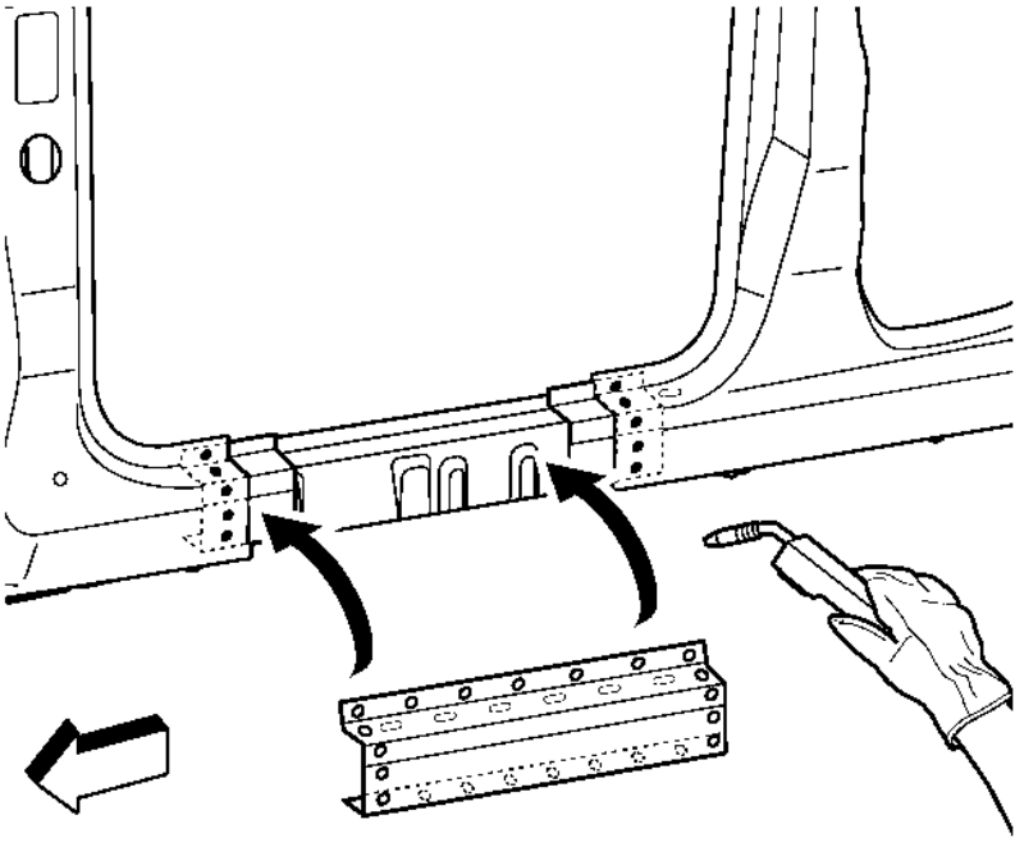


Fig. 41: Installing & Plug Weld Rocker Panel Section
Courtesy of GENERAL MOTORS CORP.

8. Position the body side to the vehicle using 3-dimensional measuring equipment. Clamp in place.

IMPORTANT: To create a solid weld with minimum heat distortion, make 25 mm (1 in) stitch welds along the seam with 25 mm (1 in) gaps between them. Complete the stitch weld.

9. Clean and prepare all welded surfaces.
10. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
11. Paint the repair area. Refer to **Basecoat/Clearcoat Paint Systems** .
12. Install all related panels and components.
13. Connect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)**

or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .

14. Enable the SIR system. Refer to **SIR Disabling and Enabling** .

FRONT SIDE DOOR OUTER PANEL REPLACEMENT

Removal Procedure

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

IMPORTANT: Before beginning the repair, refer to Metal Panel Bonding for proper adhesive applicator preparations and general information.

1. Disconnect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .
2. Disable the SIR system. Refer to **SIR Disabling and Enabling** .
3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications. Refer to **Dimensions - Body**.
5. Remove the door assembly. Refer to **Front Side Door Replacement** .

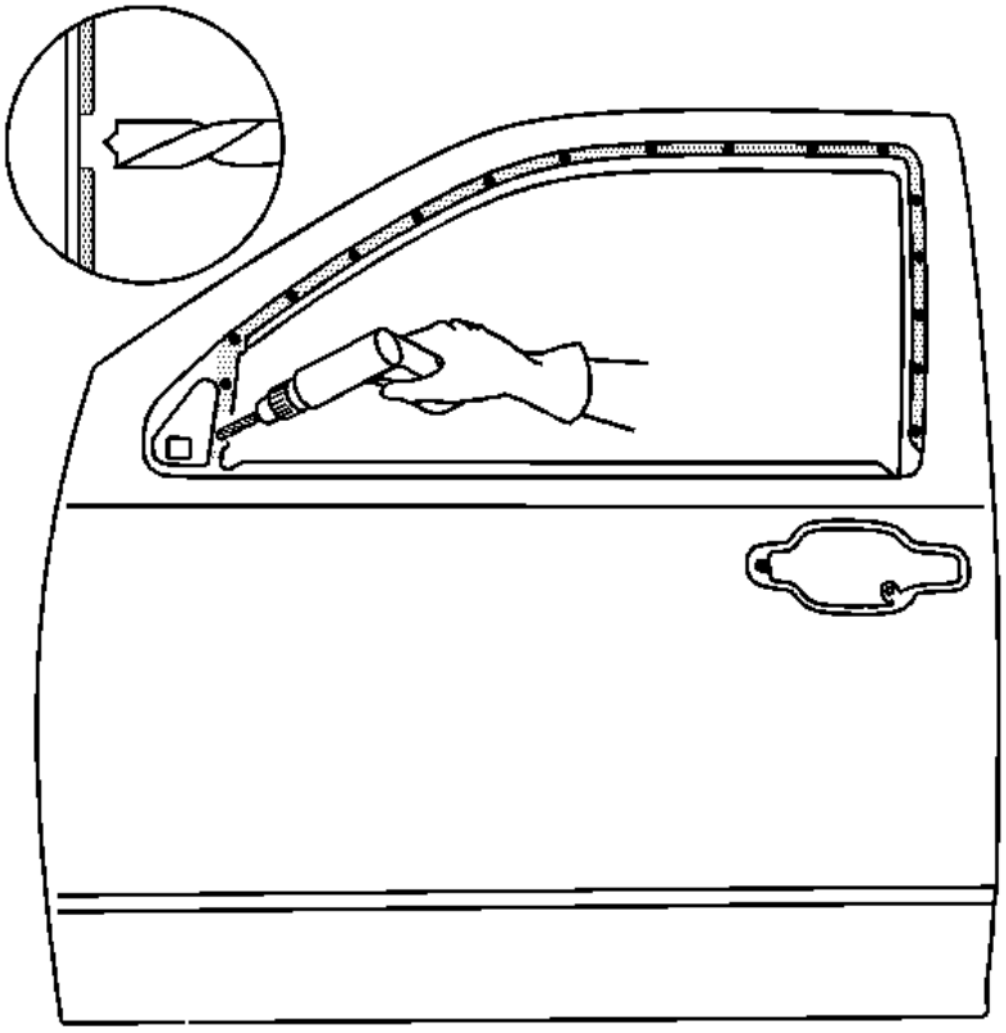


Fig. 42: Drilling Out Outer Front Door Panel Factory Welds
Courtesy of GENERAL MOTORS CORP.

6. Locate and drill out all factory welds. Note the number and location of welds for installation of the service panel.

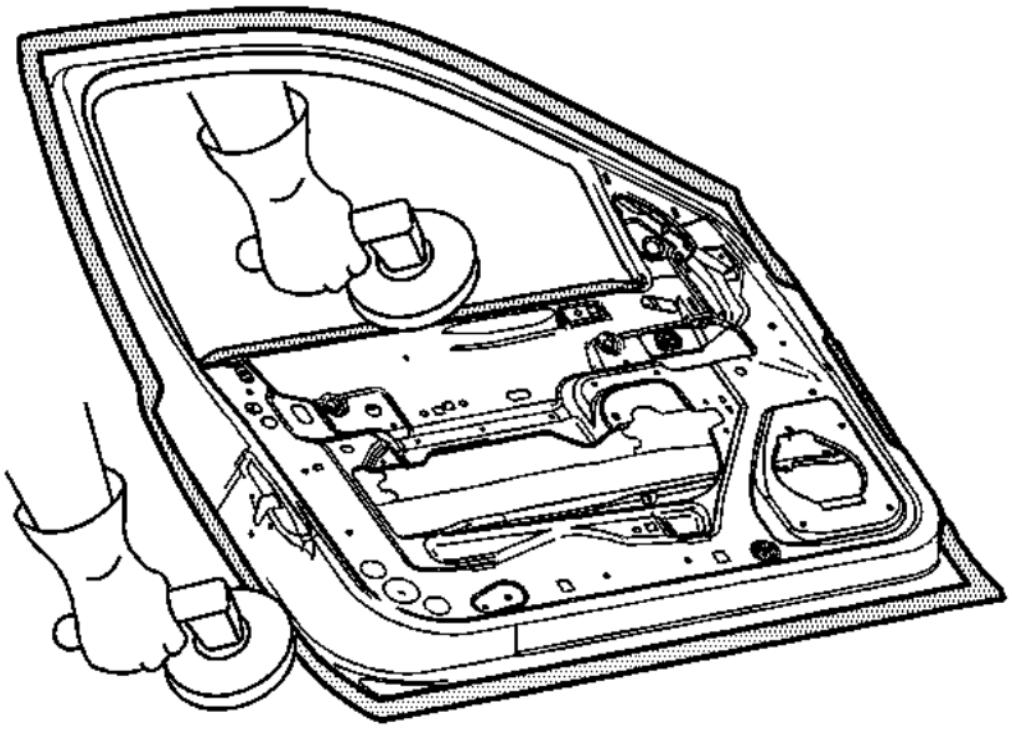


Fig. 43: Grinding Outer Door Panel Edges
Courtesy of GENERAL MOTORS CORP.

7. Grind the edges of the door outer panel to separate the outer door panel from the door shell.

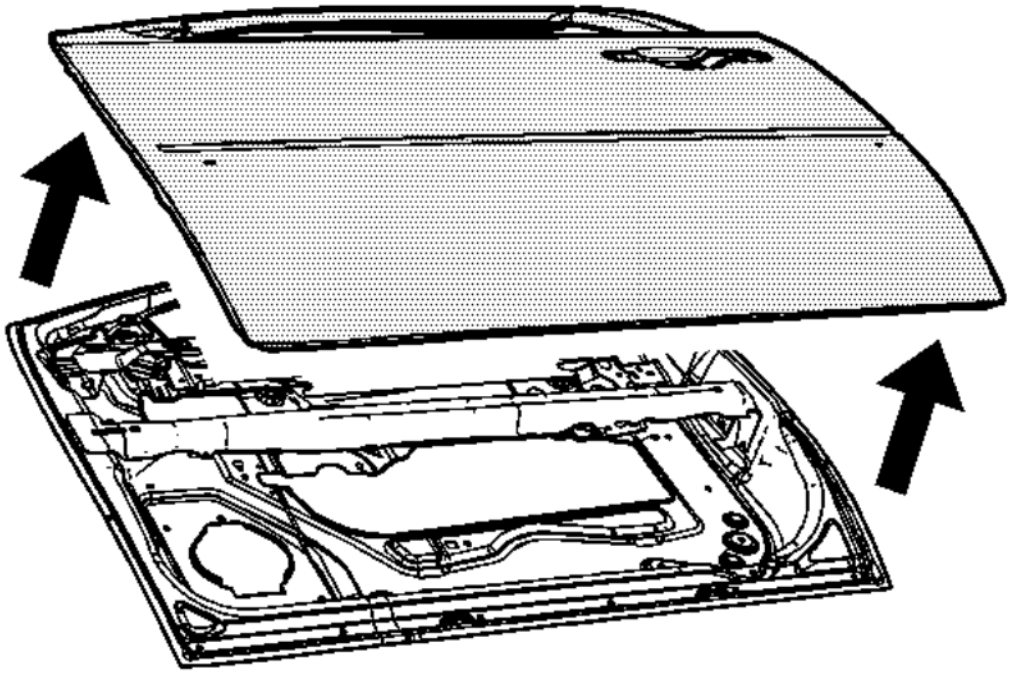


Fig. 44: View Of Outer Door Panel
Courtesy of GENERAL MOTORS CORP.

CAUTION: Inspection of the door guard beam for damage must be performed before replacement of the door outer panel. If damage to the door guard beam is found the door must be replaced. Failure to do so may compromise the structural integrity of the vehicle and may cause personal injury if the vehicle is involved in a collision.

8. Remove the outer door panel.
9. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
10. Straighten the edges of the door shell.

Installation Procedure

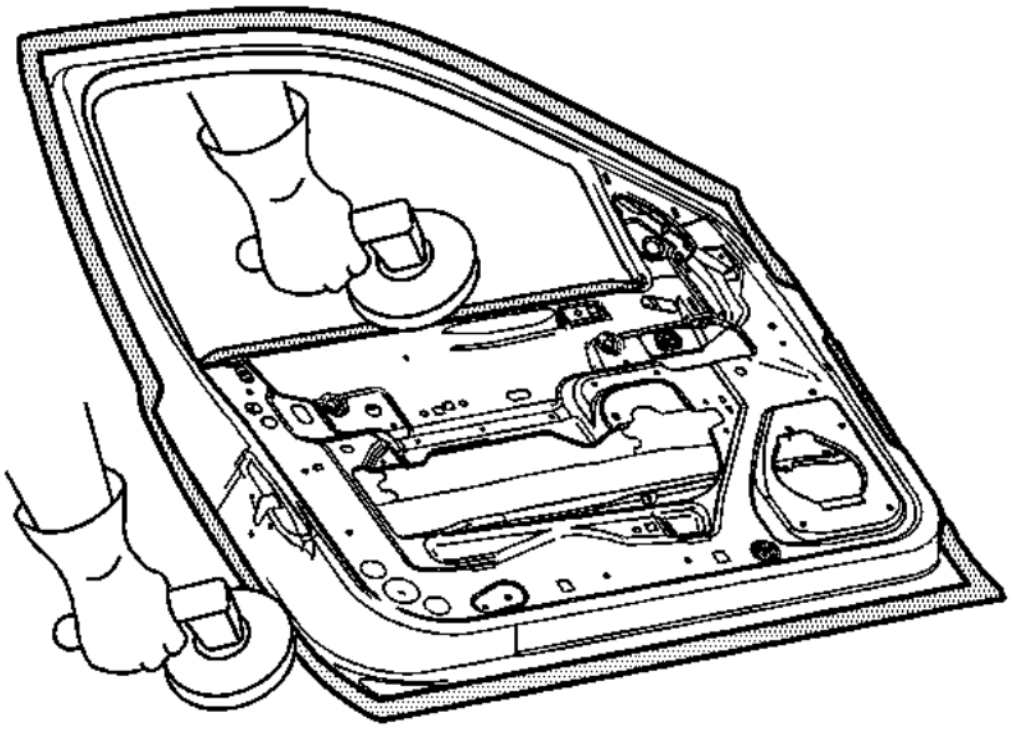


Fig. 45: Grinding Outer Door Panel Edges
Courtesy of GENERAL MOTORS CORP.

1. Using a grinding disk grind the surface of the door shell mating flanges to bare steel.

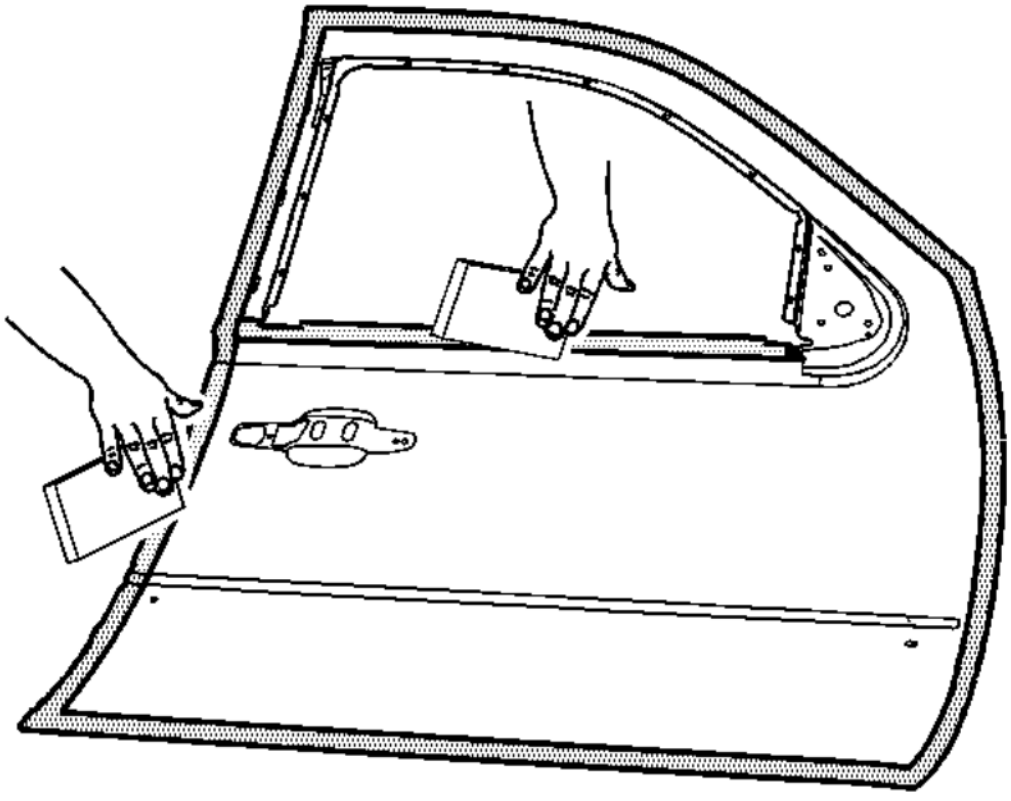


Fig. 46: Scuffing Mating Surfaces
Courtesy of GENERAL MOTORS CORP.

2. Scuff the opposing mating surfaces of the door outer panel to remove the gloss of the E-Coat.

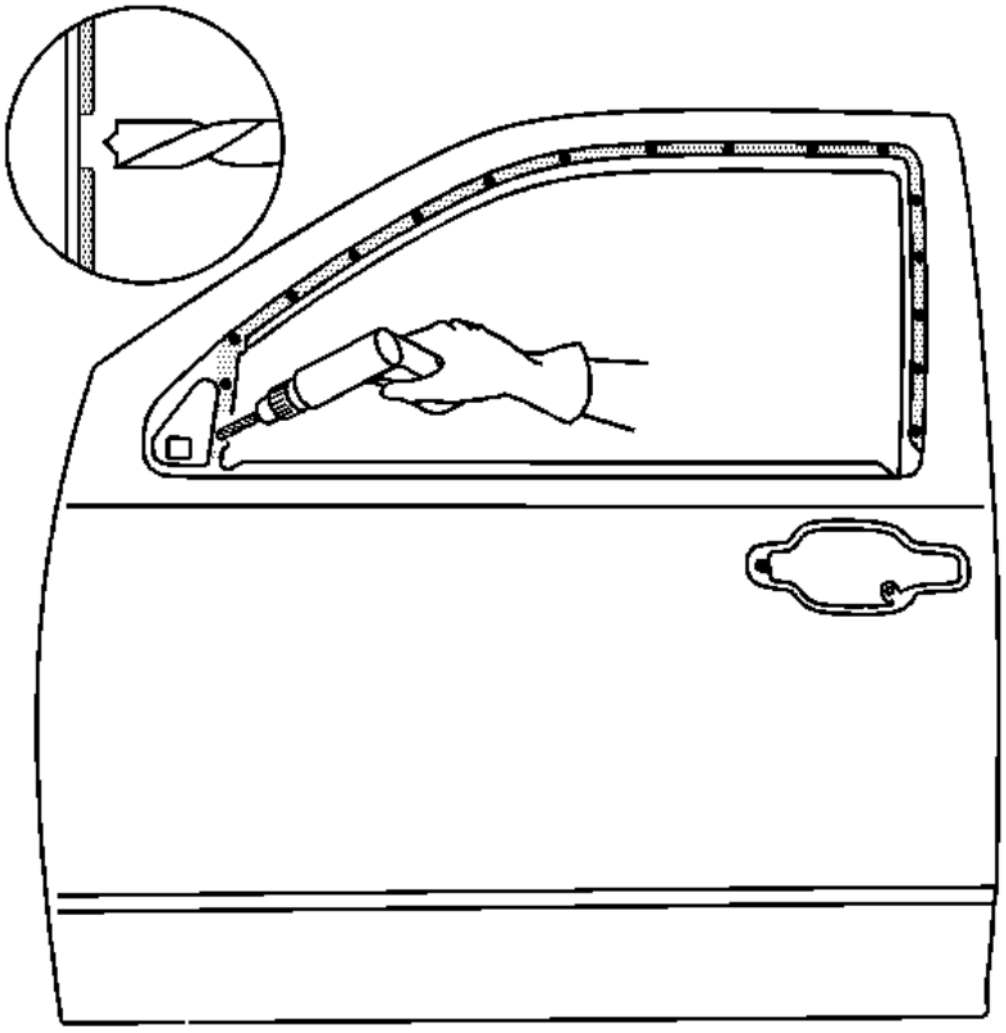


Fig. 47: Drilling Out Outer Front Door Panel Factory Welds
Courtesy of GENERAL MOTORS CORP.

3. Drill 8 mm (5/16 in) plug weld holes, as necessary, in the locations noted from the original panel.

IMPORTANT: In any area damaged beyond recognition, space plug weld holes every 40 mm (1 in) apart.

4. Clean the mating surfaces.

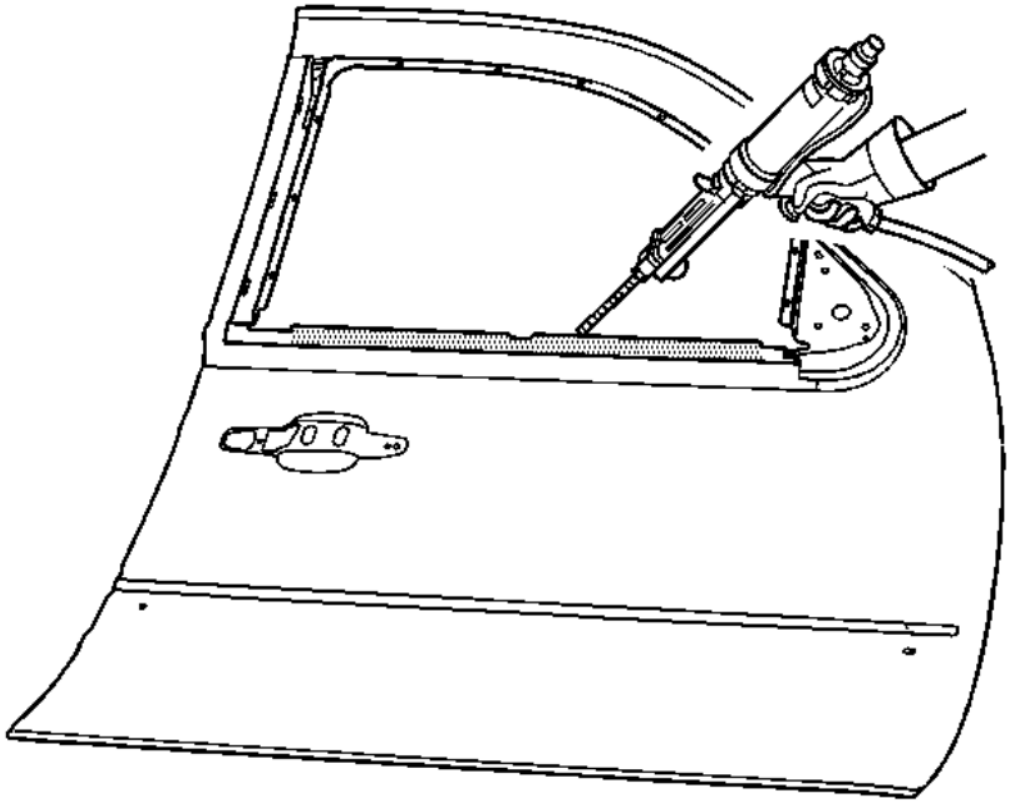


Fig. 48: Applying Panel Bonding Adhesive
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not allow the door to totally cure off the vehicle, as proper alignment of the door outer panel to the door shell will be difficult.

5. Apply a 3-6 mm (1/8-1/4 in) bead of metal panel bonding adhesive to both of the mating surfaces.
6. Using a small acid brush, spread a coat of adhesive to cover all the bare metal surfaces to ensure corrosion protection.
7. Apply a 9-13 mm (3/8-1/2 in) bead of metal bonding adhesive to the mating surfaces of the service panel.

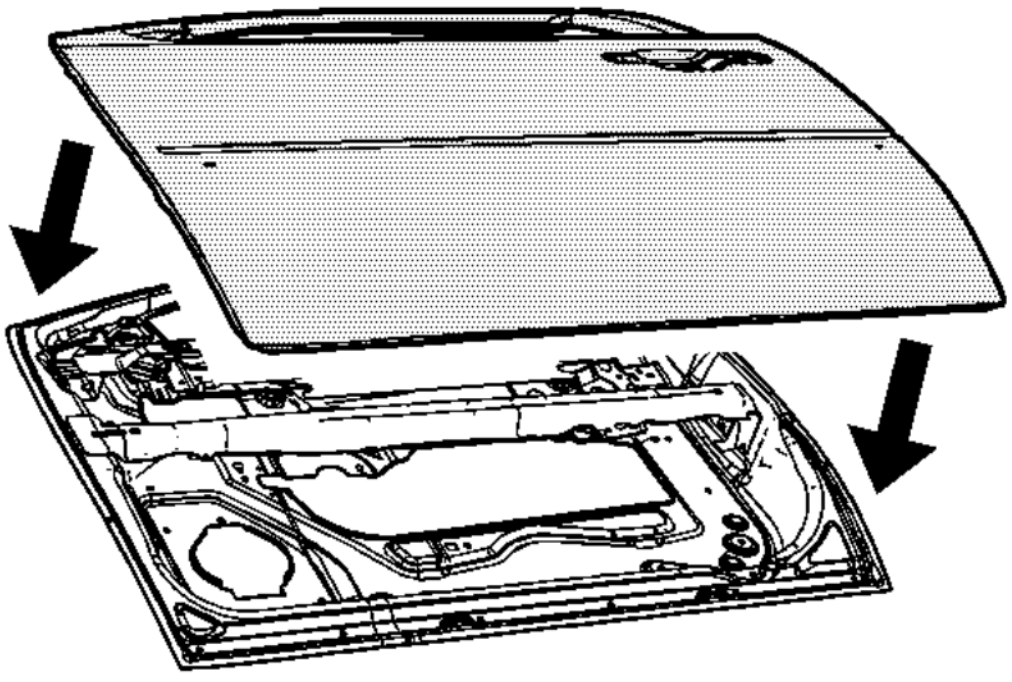


Fig. 49: View Of Outer Dood Panel
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do NOT pull the panels apart after being joined together. Slide the panels against each other to realign the panels.

8. Install the door outer panel to the door shell.
9. Clamp the door outer panel into position, as required.

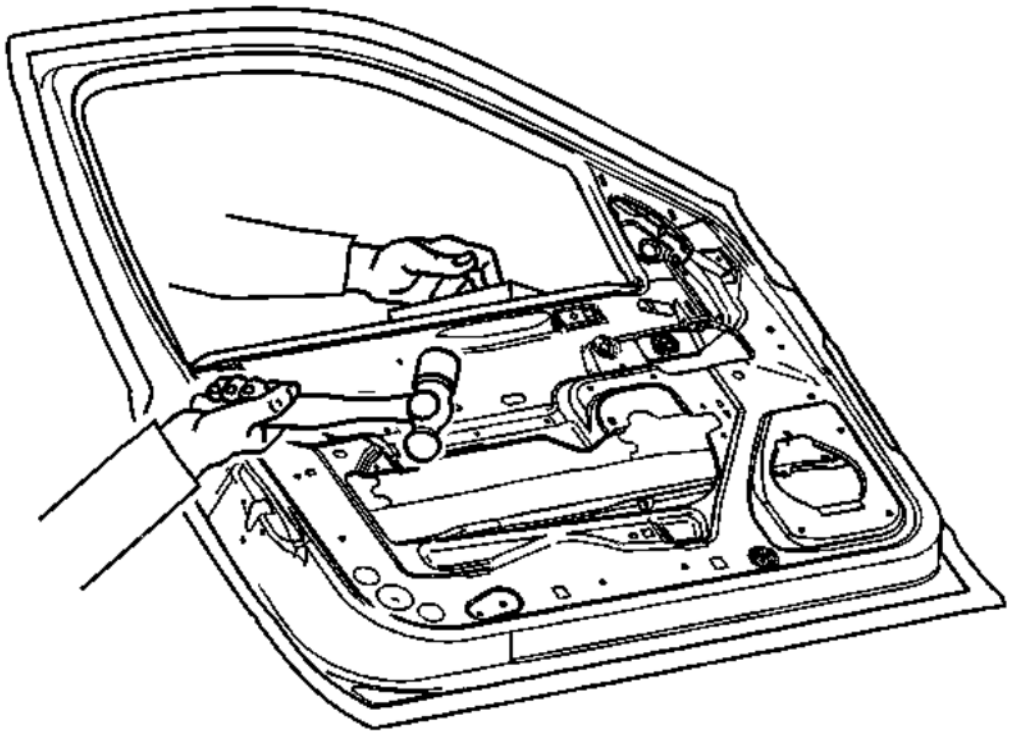


Fig. 50: Re-Hemming Hem Flanges
Courtesy of GENERAL MOTORS CORP.

10. Using a hammer re-hem the hem flanges around the door shell.

    Continue to hammer in stages along the hem flanges.

11. Using lacquer thinner remove the excess adhesive from the door panel area.
12. Install the door to the vehicle. Inspect the door outer panel for proper alignment; then adjust the alignment, as required. Refer to **Front Side Door Replacement** .

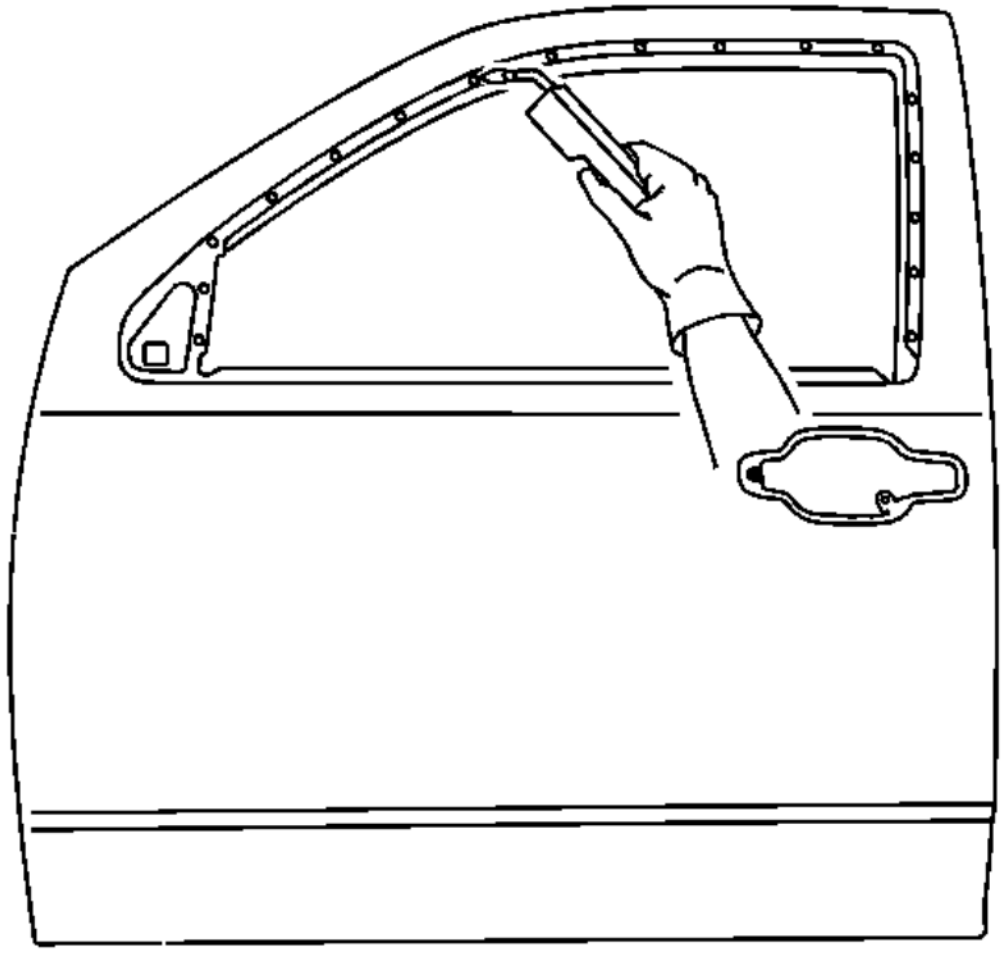


Fig. 51: Welding Outer Front Door Panel
Courtesy of GENERAL MOTORS CORP.

13. Using metal-inert gas (MIG), weld the door outer panel to the door frame in the locations noted at the upper door frame.
14. Clean and prepare all welded surfaces.

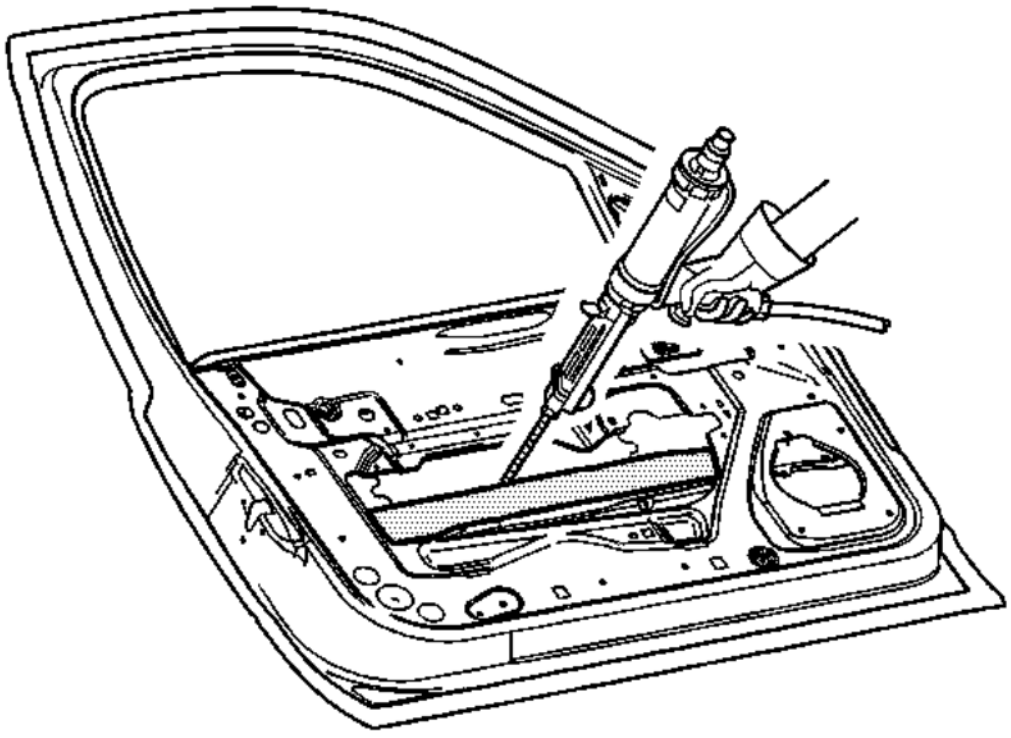


Fig. 52: Applying Anti-Flutter Foam
Courtesy of GENERAL MOTORS CORP.

15. Apply Fusor super flexible anti-flutter foam-fast set, Fusor P/N 121/124, or equivalent, in 4-5 evenly spaced locations between the door outer panel and the inner safety beam.
16. Apply sealers and anti-corrosion materials to the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
17. Paint the repaired area. Refer to **Basecoat/Clearcoat Paint Systems** .
18. Install all related panels and components.
19. Enable the SIR system. Refer to **SIR Disabling and Enabling** .
20. Connect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .

REAR SIDE DOOR OUTER PANEL REPLACEMENT (CREW CAB)

Removal Procedure

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

IMPORTANT: Before beginning the repair, refer to Metal Panel Bonding for proper adhesive applicator preparations and general information.

1. Disconnect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .
2. Disable the SIR system. Refer to **SIR Disabling and Enabling** .
3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications. Refer to **Dimensions - Body**.
5. Remove the door assembly. Refer to **Rear Door Replacement (Extended Cab)** or **Rear Door Replacement (Crew Cab)** .

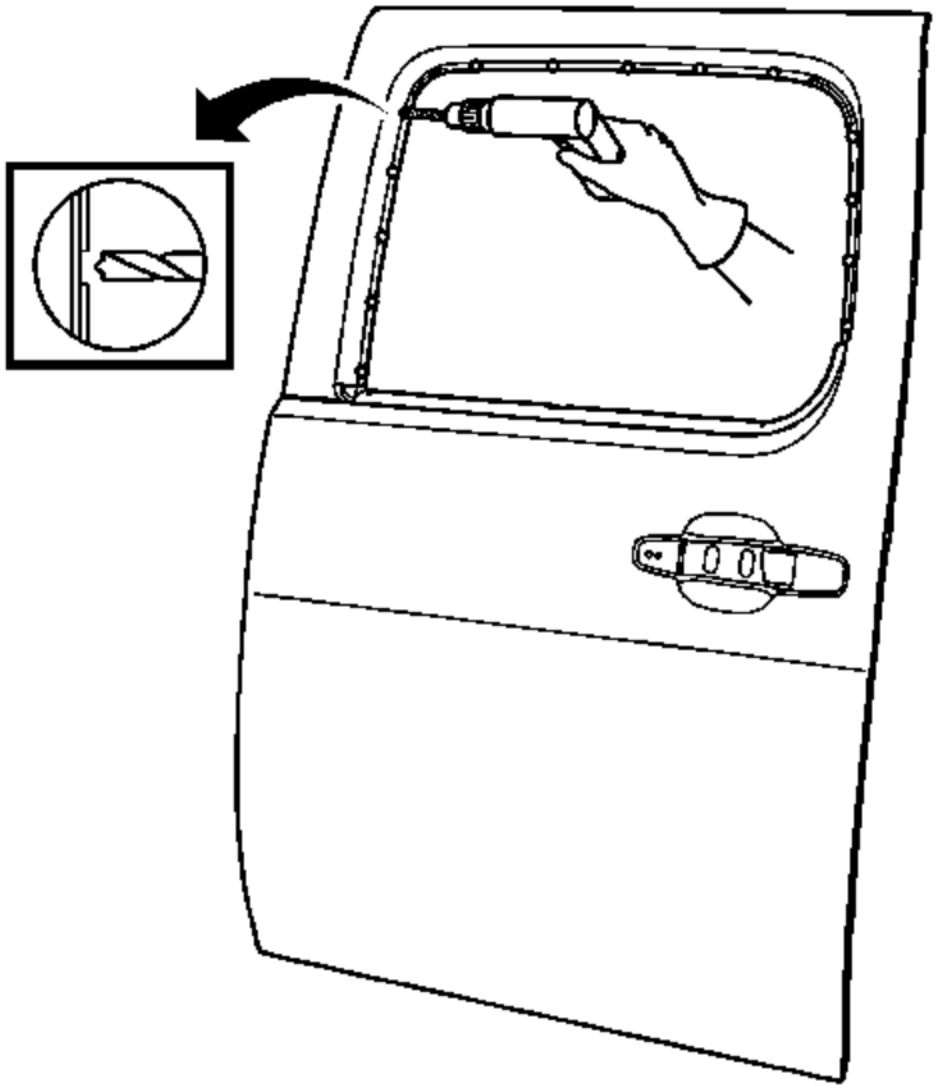


Fig. 53: Drilling Out Factory Welds
Courtesy of GENERAL MOTORS CORP.

6. Locate and drill out all factory welds. Note the number and location of welds for the installation of the service panel.

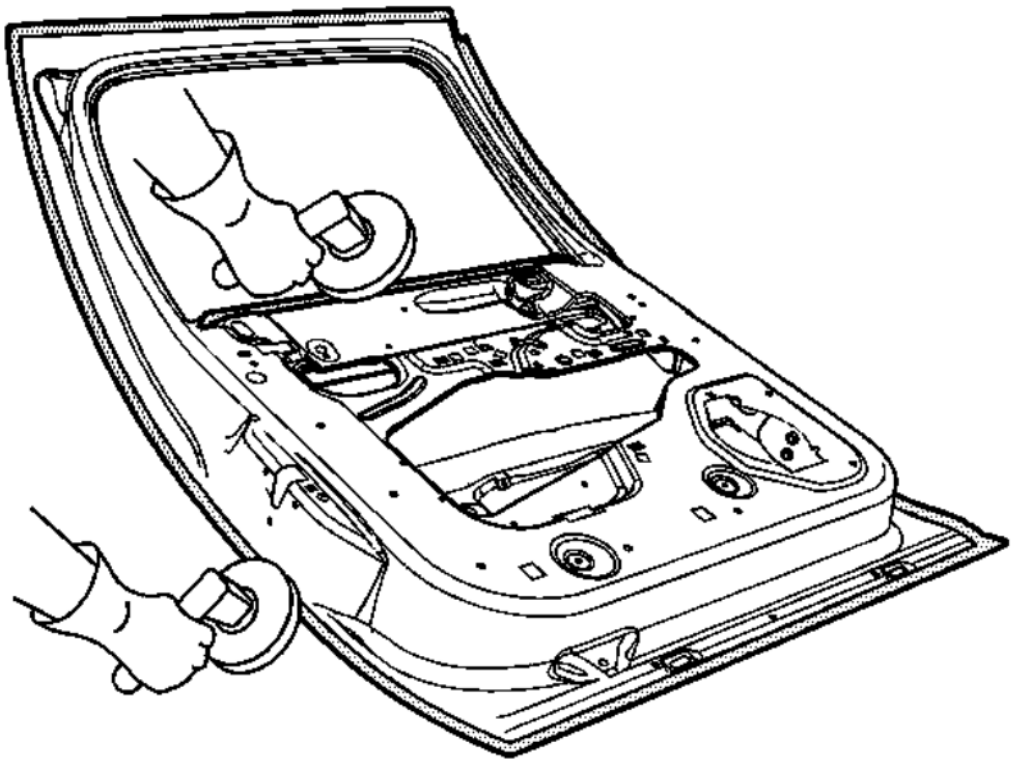


Fig. 54: Grinding Outer Door Panel Edges
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Remove the hem flange at the upper belt reinforcement.

7. Grind the edges of the door outer panel to separate the outer door panel from the door shell.

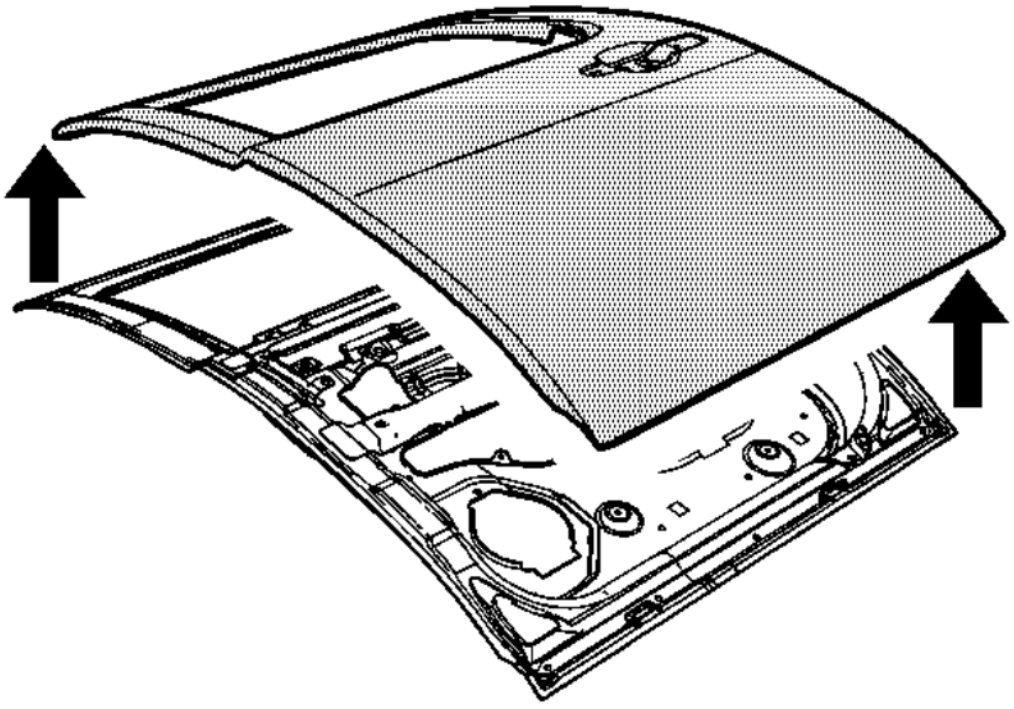


Fig. 55: View Of Outer Door Panel
Courtesy of GENERAL MOTORS CORP.

CAUTION: Inspection of the door guard beam for damage must be performed before replacement of the door outer panel. If damage to the door guard beam is found the door must be replaced. Failure to do so may compromise the structural integrity of the vehicle and may cause personal injury if the vehicle is involved in a collision.

8. Remove the outer door panel.
9. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
10. Straighten the edges of the door shell.

Installation Procedure

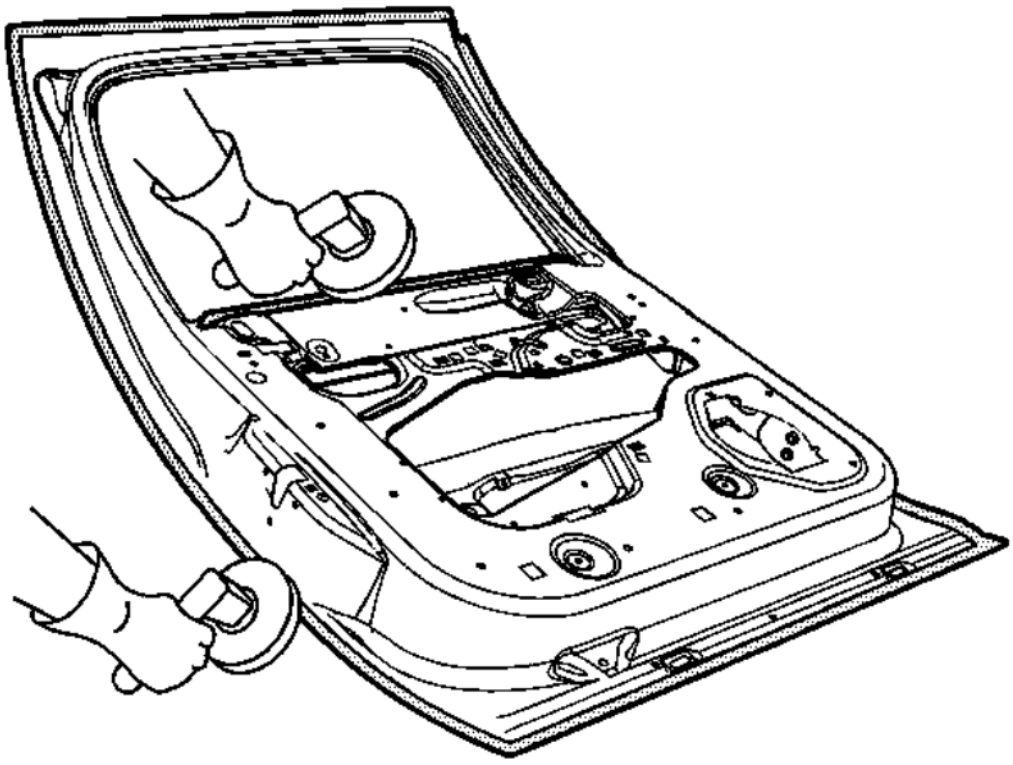


Fig. 56: Grinding Outer Door Panel Edges
Courtesy of GENERAL MOTORS CORP.

1. Using a grinding disk grind the surface of the door shell mating flanges to bare steel.

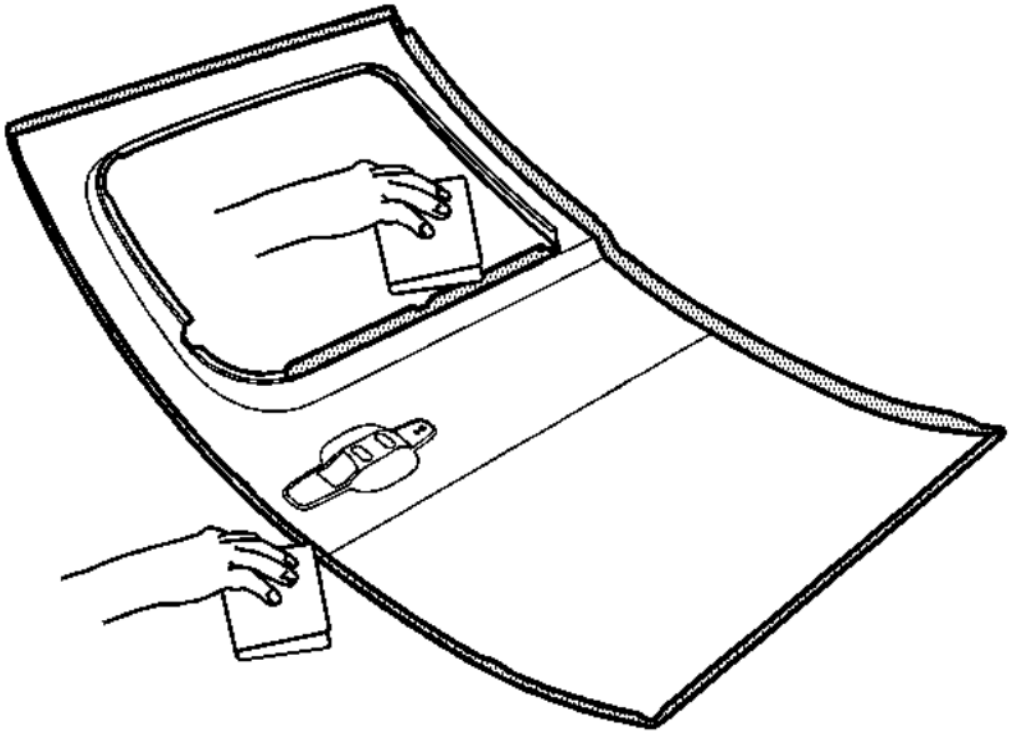


Fig. 57: Scuffing Mating Surfaces
Courtesy of GENERAL MOTORS CORP.

2. Scuff the opposing mating surfaces of the door outer panel to remove the gloss of the E-Coat.

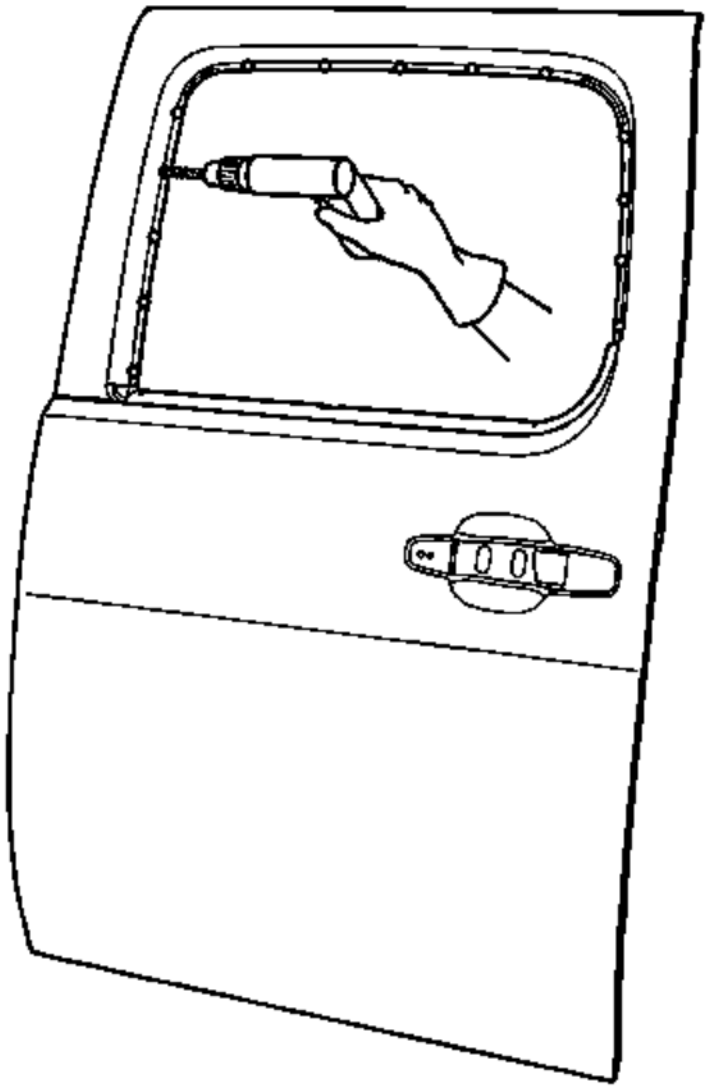


Fig. 58: Drilling Plug Weld Holes
Courtesy of GENERAL MOTORS CORP.

3. Drill 8 mm (5/16 in) plug weld holes, as necessary, in the locations noted from the original panel.

IMPORTANT: In any area damaged beyond recognition, space plug weld holes every 40 mm (1 in) apart.

4. Clean the mating surfaces.

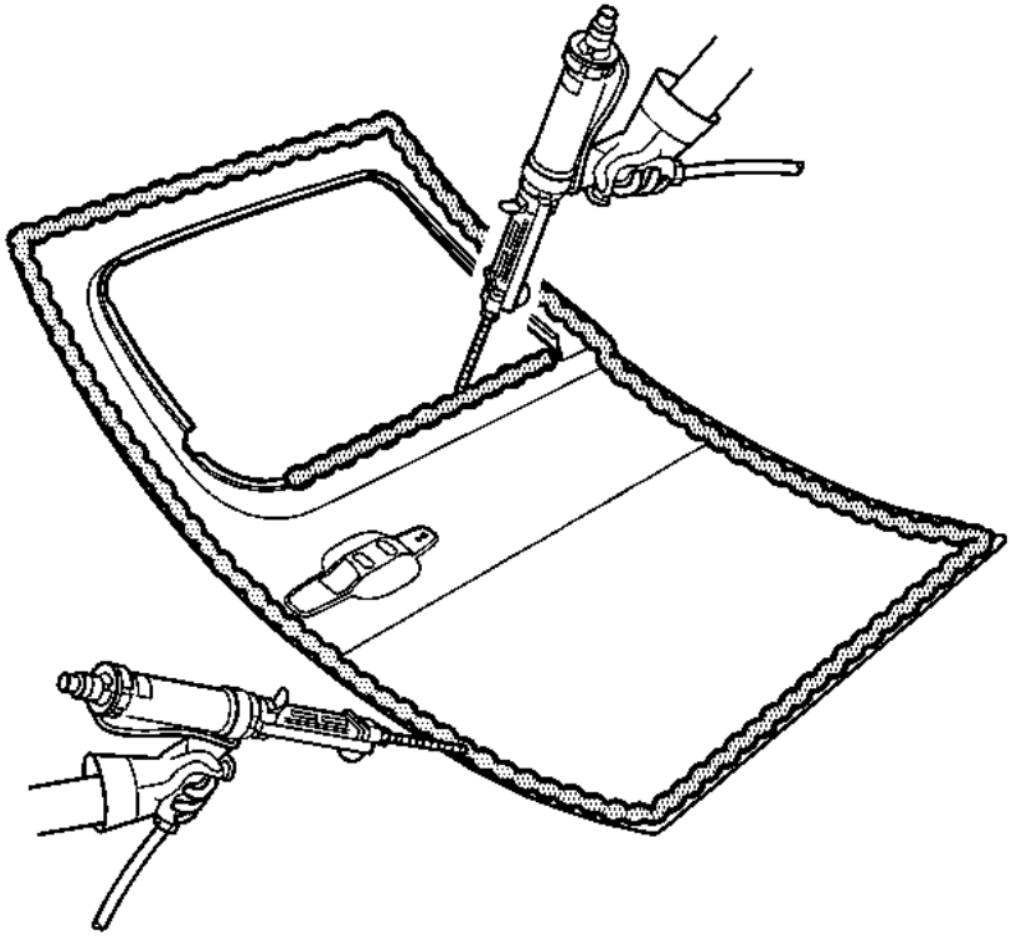


Fig. 59: Applying Metal Panel Bonding
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not allow the door to totally cure off the vehicle, as proper alignment of the door outer panel to the door shell will be difficult.

5. Apply a 3-6 mm (1/8-1/4 in) bead of metal panel bonding adhesive to both of the mating surfaces.
6. Using a small acid brush, spread a coat of adhesive to cover all the bare metal surfaces to ensure corrosion protection.
7. Apply a 9-13 mm (3/8-1/2 in) bead of metal bonding adhesive to the mating surfaces of the service panel.

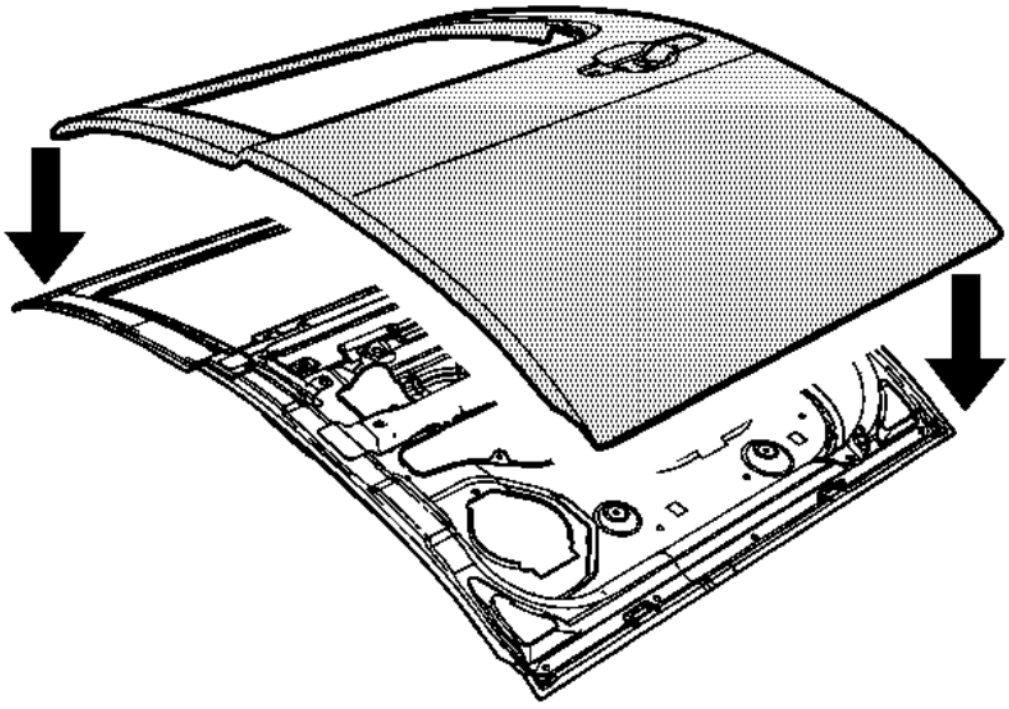


Fig. 60: View Of Outer Door Panel
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do NOT pull the panels apart after being joined together. Slide the panels against each other to realign the panels.

8. Install the door outer panel to the door shell.
9. Clamp the door outer panel into position, as required.

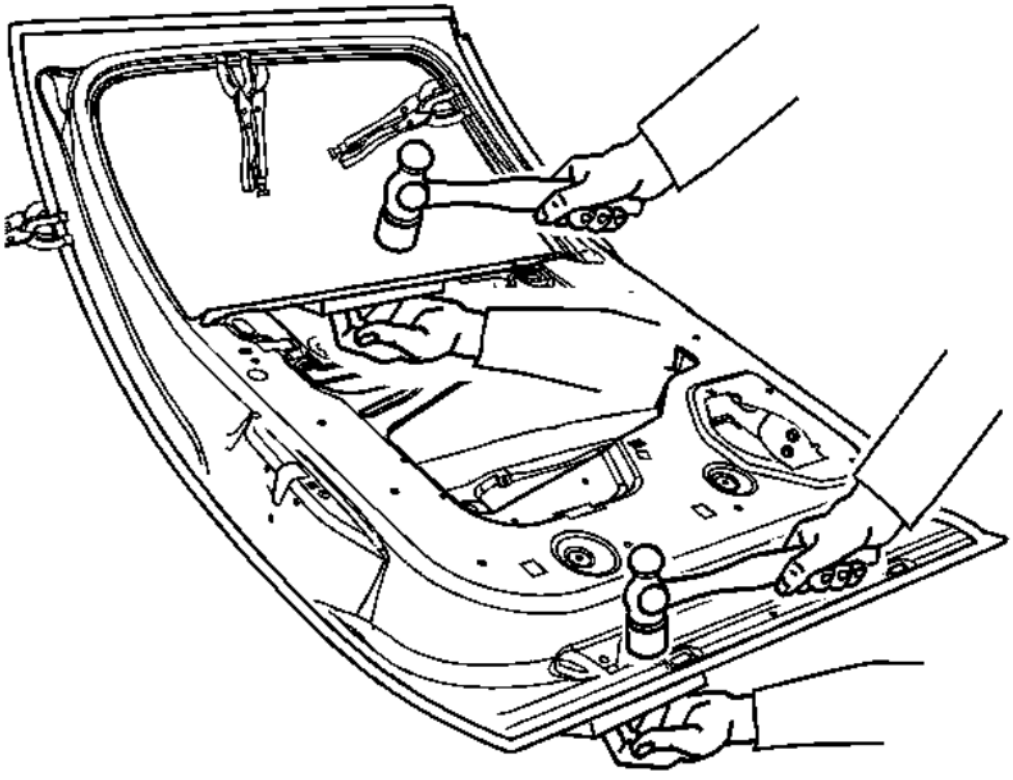


Fig. 61: Re-Hemming The Hem Flanges
Courtesy of GENERAL MOTORS CORP.

10. Using a hammer re-hem the hem flanges around the door shell.

    Continue to hammer in stages along the hem flanges.

11. Remove the excess adhesive from the door panel area.
12. Install the door to the vehicle. Inspect the door outer panel for proper alignment; then adjust the alignment, as required. Refer to **Rear Door Replacement (Extended Cab)** or **Rear Door Replacement (Crew Cab)** .

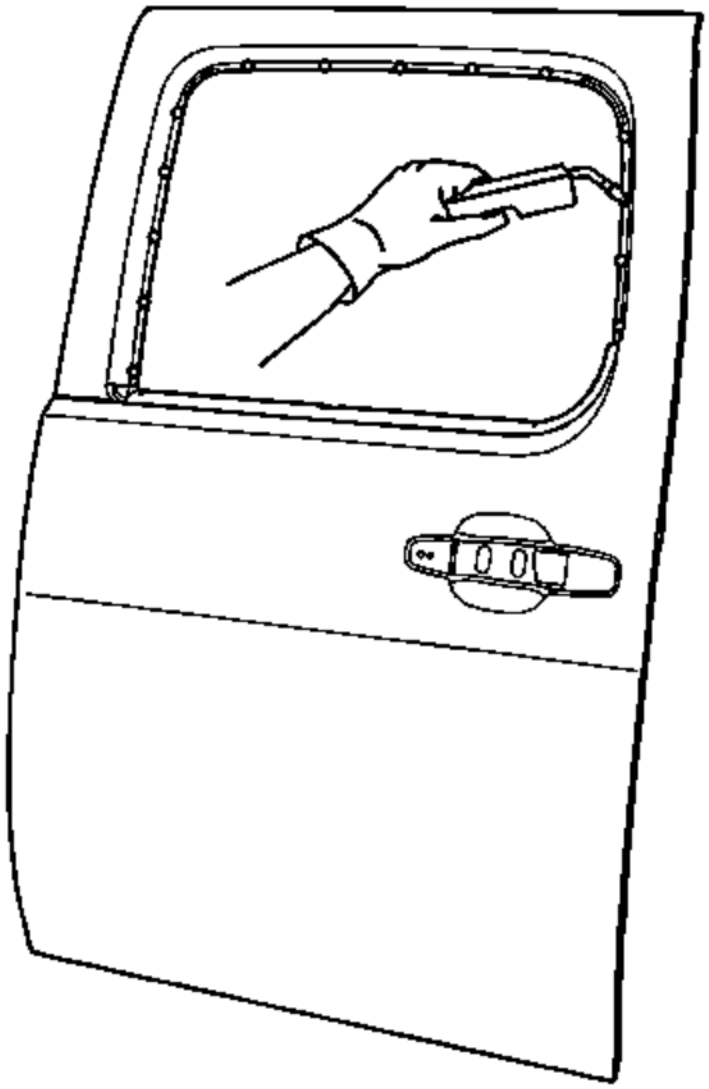


Fig. 62: MIG Welding Outer Door Panel
Courtesy of GENERAL MOTORS CORP.

13. Using metal-inert gas (MIG), weld the door outer panel to the door frame in the locations noted at the upper door frame.
14. Clean and prepare all welded surfaces.

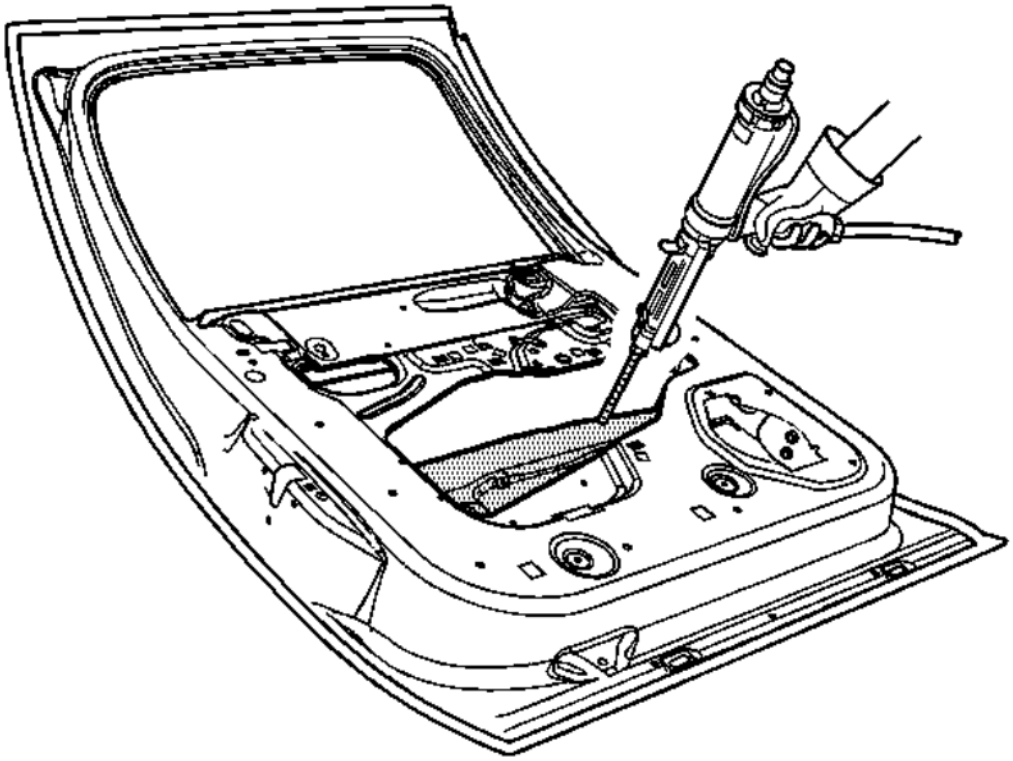


Fig. 63: Applying Anti-Flutter Foam
Courtesy of GENERAL MOTORS CORP.

15. Apply Fusor super flexible anti-flutter foam-fast set, Fusor P/N 121/124, or equivalent, in 4-5 evenly spaced locations between the door outer panel and the inner safety beam.
16. Apply sealers and anti-corrosion materials to the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
17. Paint the repaired area. Refer to **Basecoat/Clearcoat Paint Systems** .
18. Install all related panels and components.
19. Enable the SIR system. Refer to **SIR Disabling and Enabling** .
20. Connect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .

REAR SIDE DOOR OUTER PANEL REPLACEMENT (EXTENDED CAB)

Removal Procedure

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

IMPORTANT: Before beginning the repair, refer to Metal Panel Bonding for proper adhesive applicator preparations and general information.

1. Disconnect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .
2. Disable the SIR system. Refer to **SIR Disabling and Enabling** .
3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications. Refer to **Dimensions - Body**.
5. Remove the door assembly. Refer to **Rear Door Replacement (Extended Cab)** or **Rear Door Replacement (Crew Cab)** .

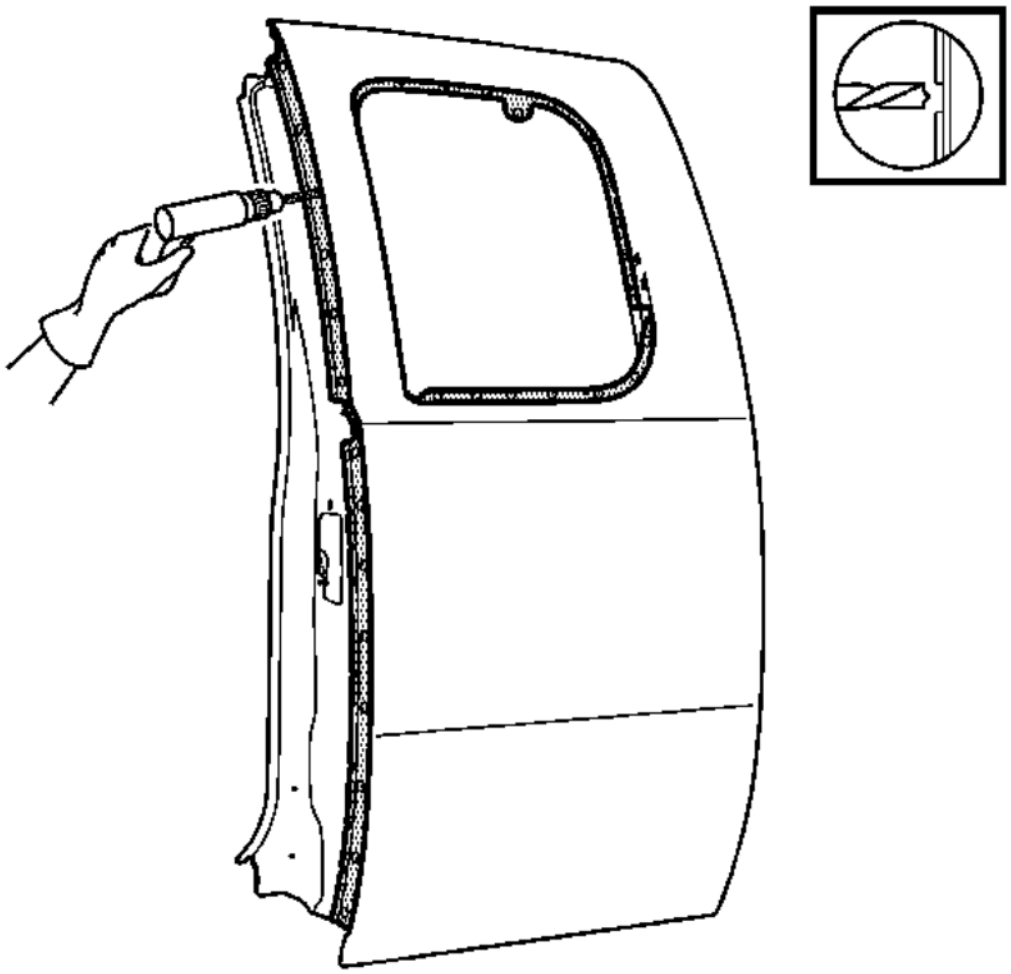


Fig. 64: Drilling Out Factory Welds
Courtesy of GENERAL MOTORS CORP.

6. Locate and drill out all factory welds. Note the number and location of welds for the installation of the service panel.

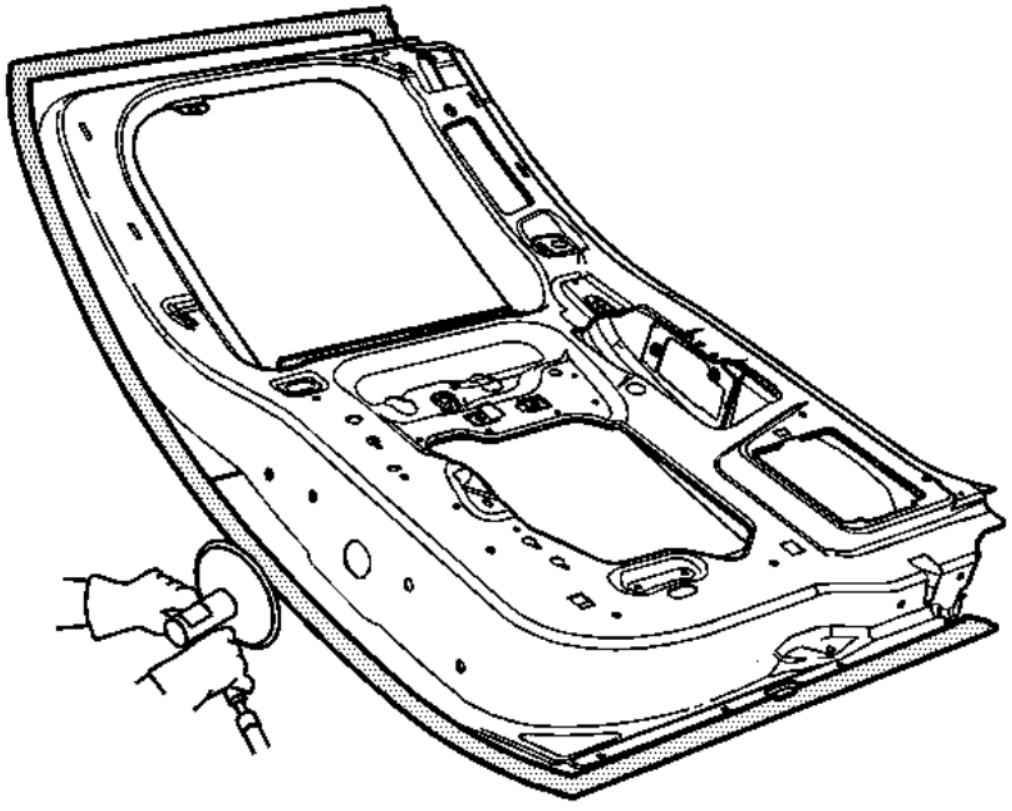


Fig. 65: Grinding Edges Of Outer Door Panel
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Remove the hem flange at the upper belt reinforcement.

7. Grind the edges of the door outer panel to separate the outer door panel from the door shell.

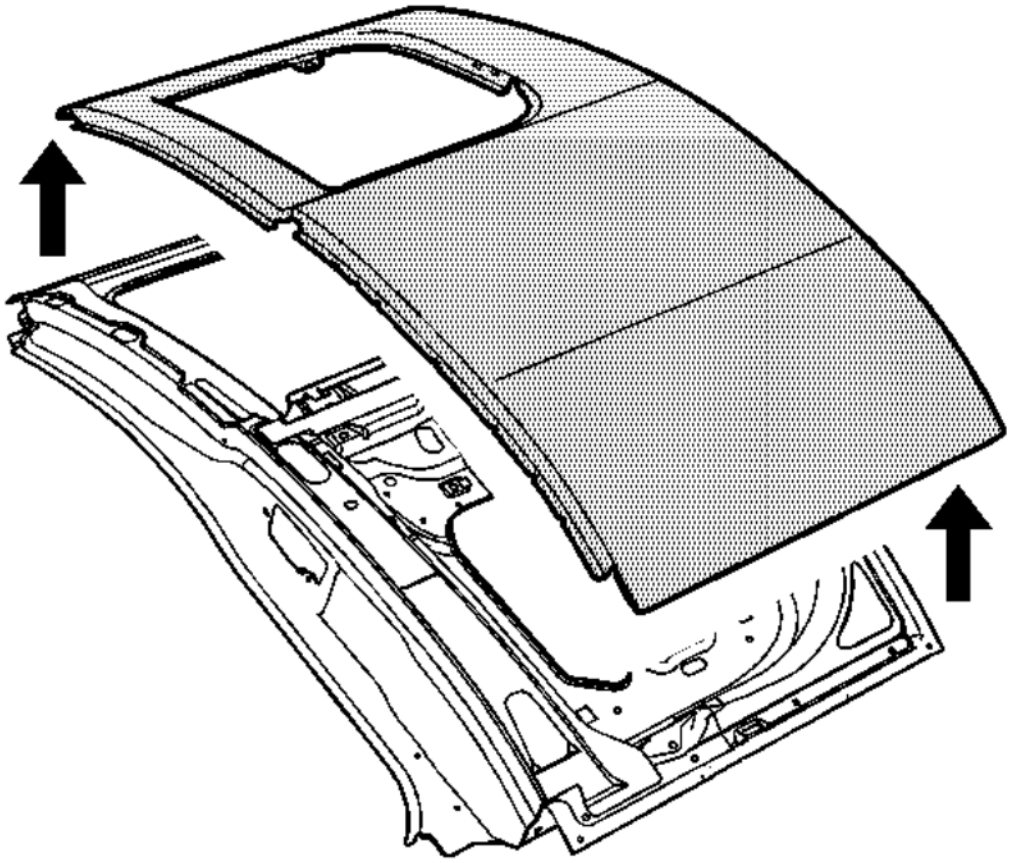


Fig. 66: View Of Outer Door Panel
Courtesy of GENERAL MOTORS CORP.

8. Remove the outer door panel.
9. Remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
10. Straighten the edges of the door shell.

Installation Procedure

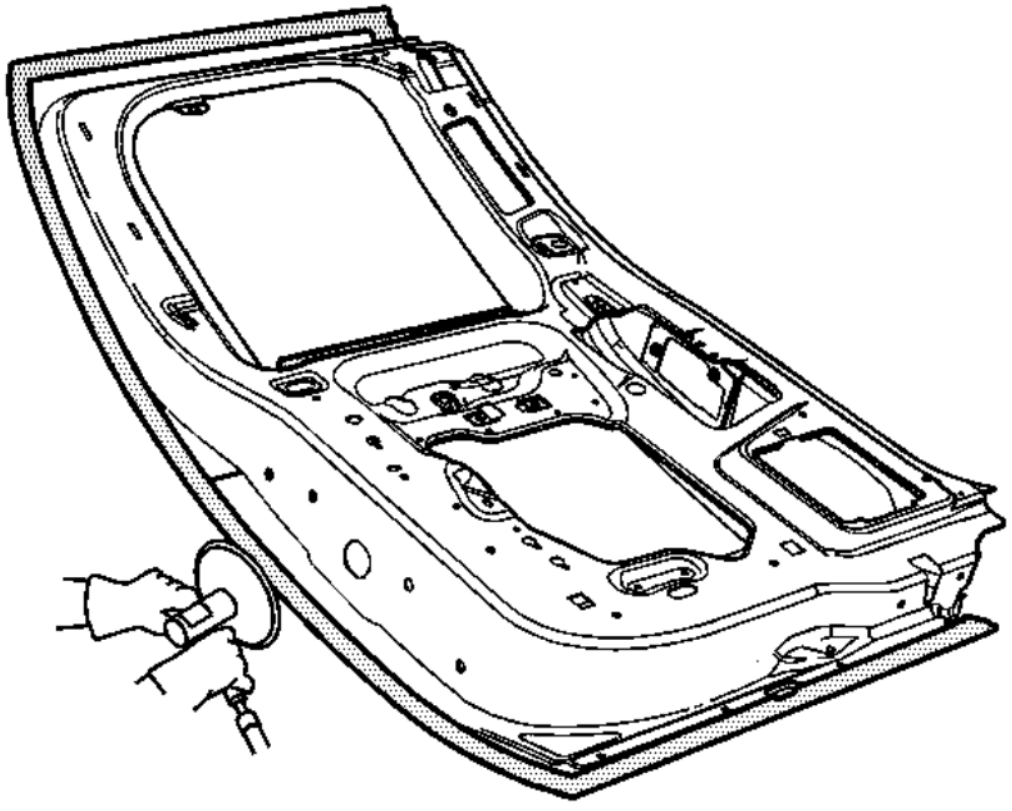


Fig. 67: Grinding Edges Of Outer Door Panel
Courtesy of GENERAL MOTORS CORP.

1. Using a grinding disk grind the surface of the door shell mating flanges to bare steel.

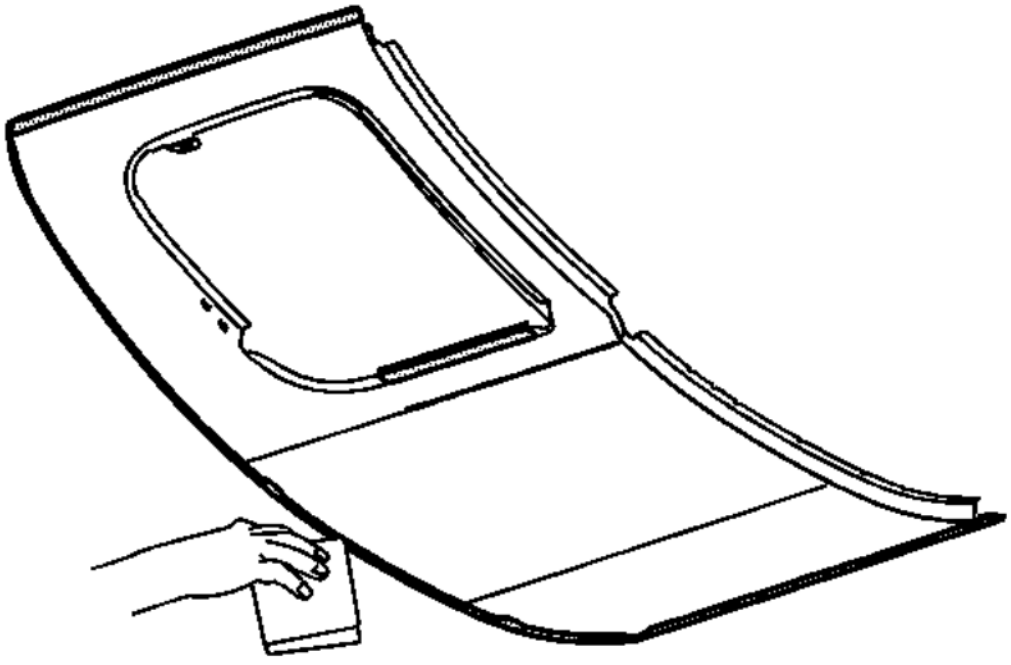


Fig. 68: Scuffing Outer Door Panel Mating Surfaces
Courtesy of GENERAL MOTORS CORP.

2. Scuff the opposing mating surfaces of the door outer panel to remove the gloss of the E-Coat.

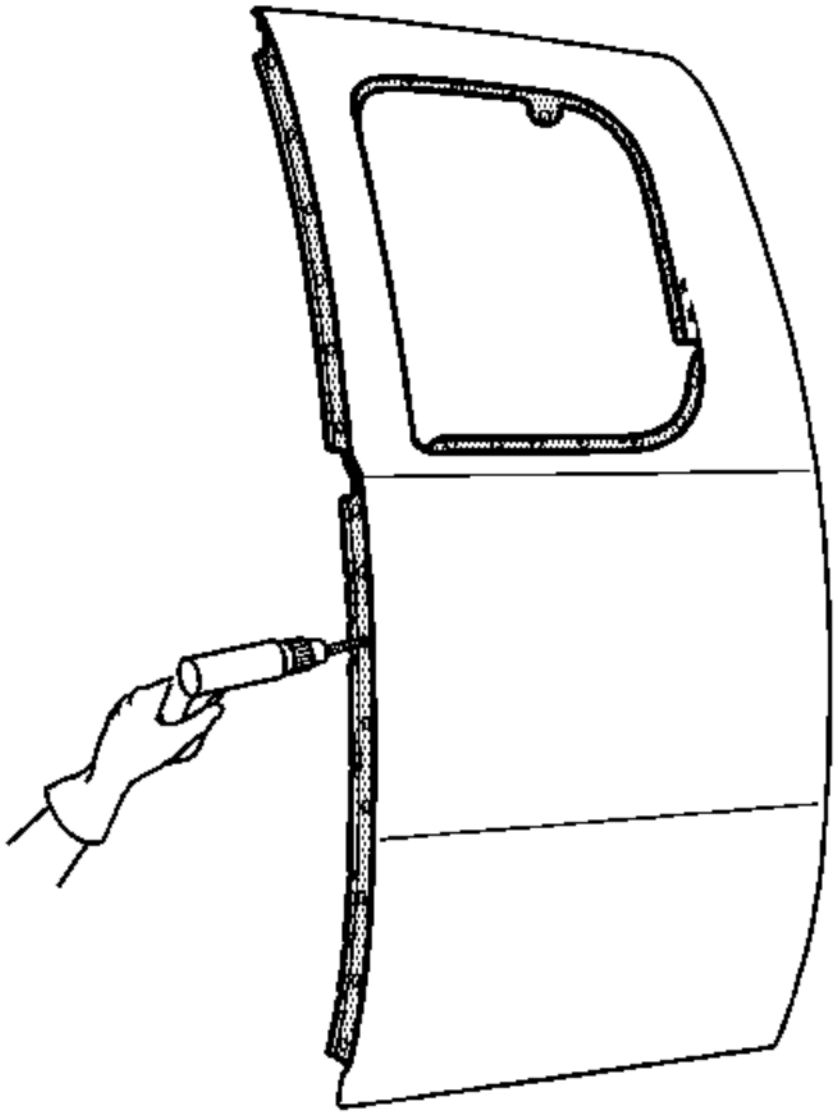


Fig. 69: Drilling Plug Weld Holes
Courtesy of GENERAL MOTORS CORP.

3. Drill 8 mm (5/16 in) plug weld holes, as necessary, in the locations noted from the original panel.

IMPORTANT: In any area damaged beyond recognition, space plug weld holes every 40 mm (1 in) apart.

4. Clean the mating surfaces.

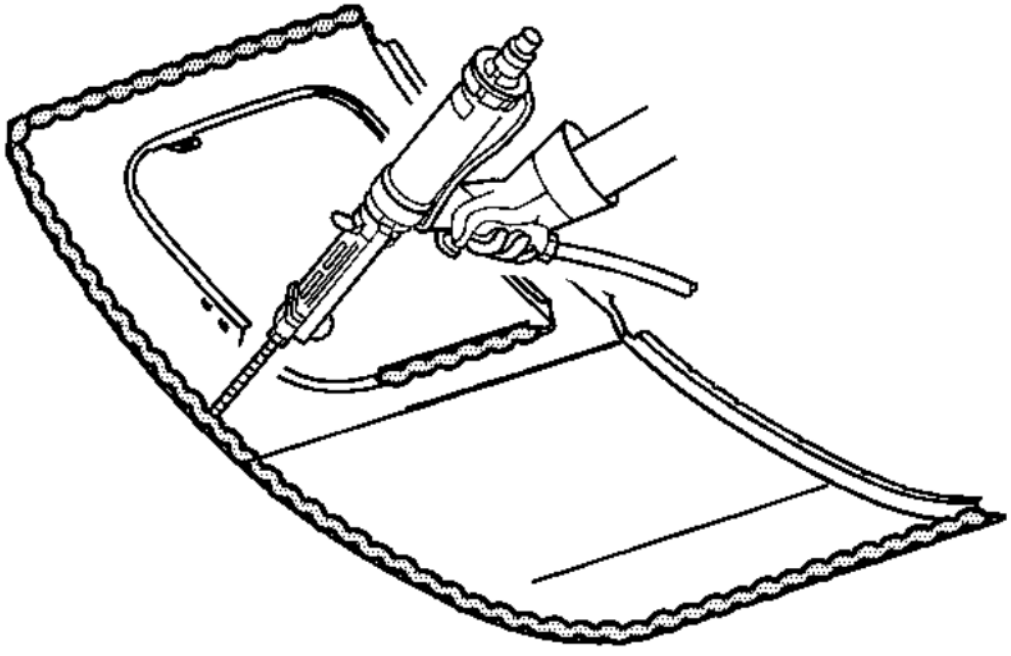


Fig. 70: Applying Metal Panel Bonding Adhesive
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not allow the door to totally cure off the vehicle, as proper alignment of the door outer panel to the door shell will be difficult.

5. Apply a 3-6 mm (1/8-1/4 in) bead of metal panel bonding adhesive to both of the mating surfaces.
6. Using a small acid brush, spread a coat of adhesive to cover all the bare metal surfaces to ensure corrosion protection.
7. Apply a 9-13 mm (3/8-1/2 in) bead of metal bonding adhesive to the mating surfaces of the service panel.

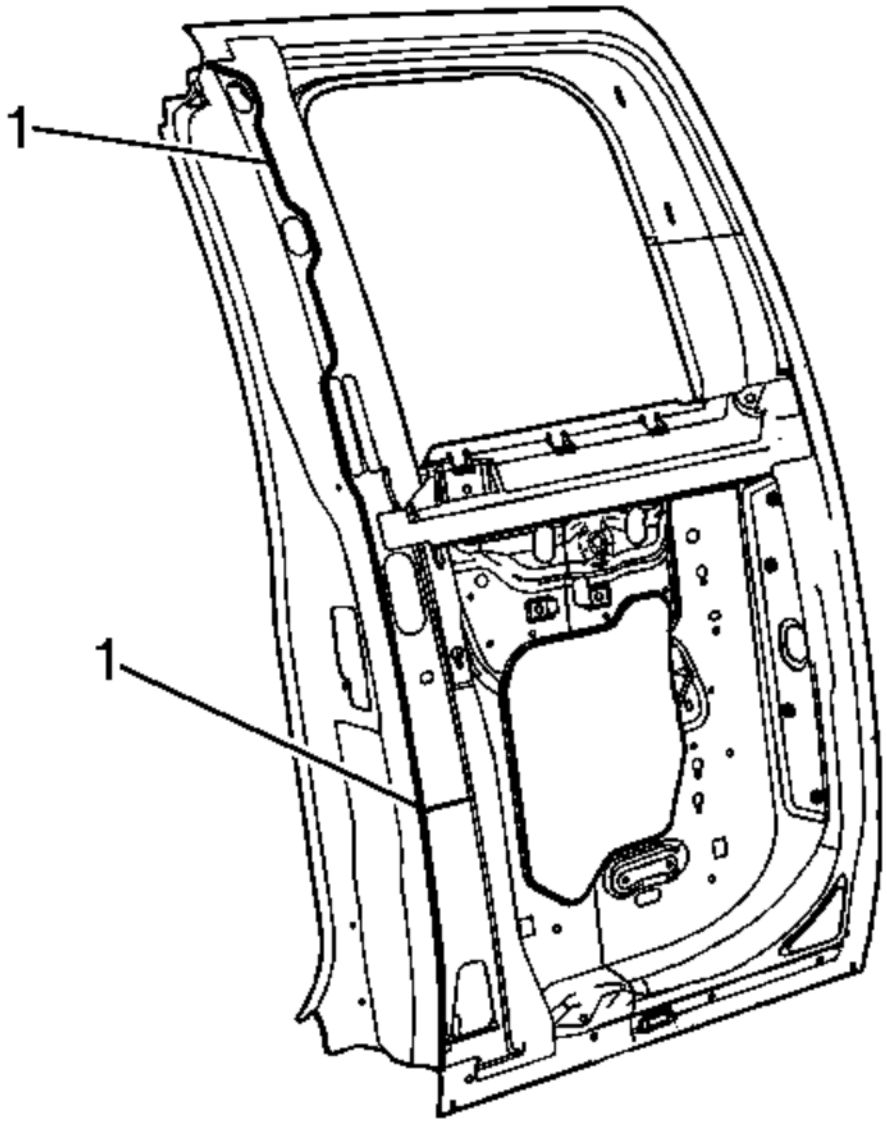


Fig. 71: Applying Metal Bonding Adhesive
Courtesy of GENERAL MOTORS CORP.

8. Apply a 3-6 mm (1/8-1/4 in) bead of metal bonding adhesive along the front portion of the door shell (1).

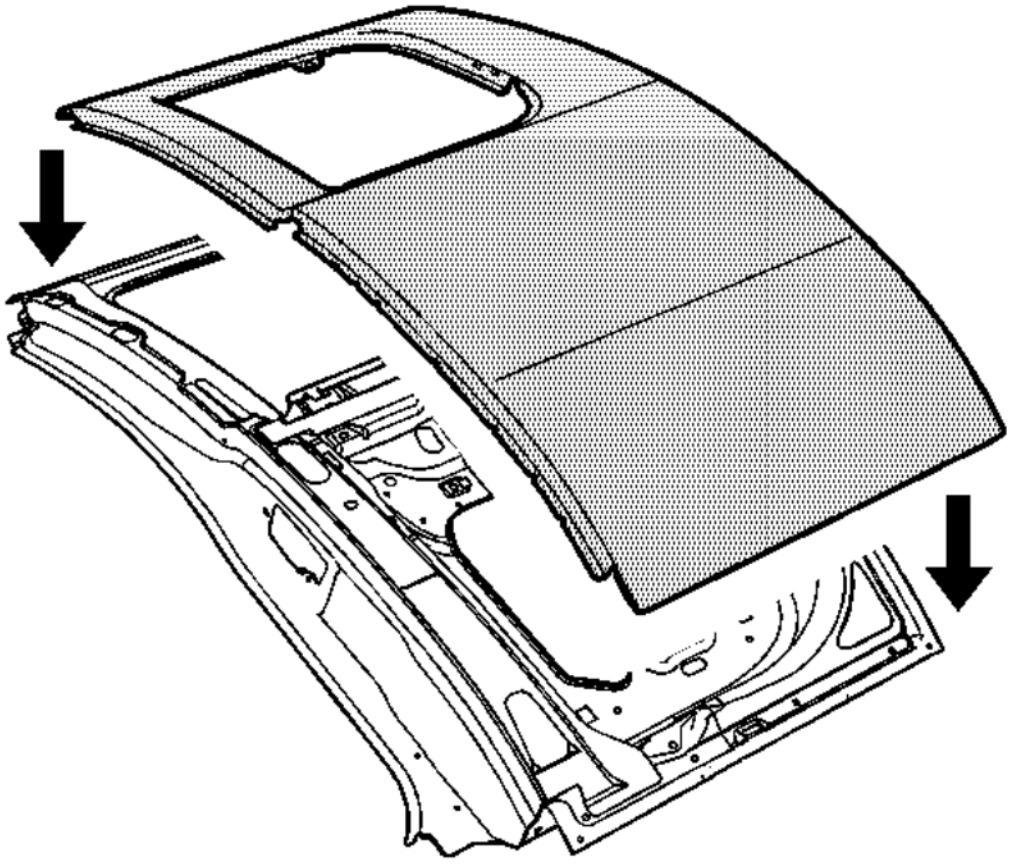


Fig. 72: View Of Outer Door Panel
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do NOT pull the panels apart after being joined together. Slide the panels against each other to realign the panels.

9. Install the door outer panel to the door shell.
10. Clamp the door outer panel into position, as required.

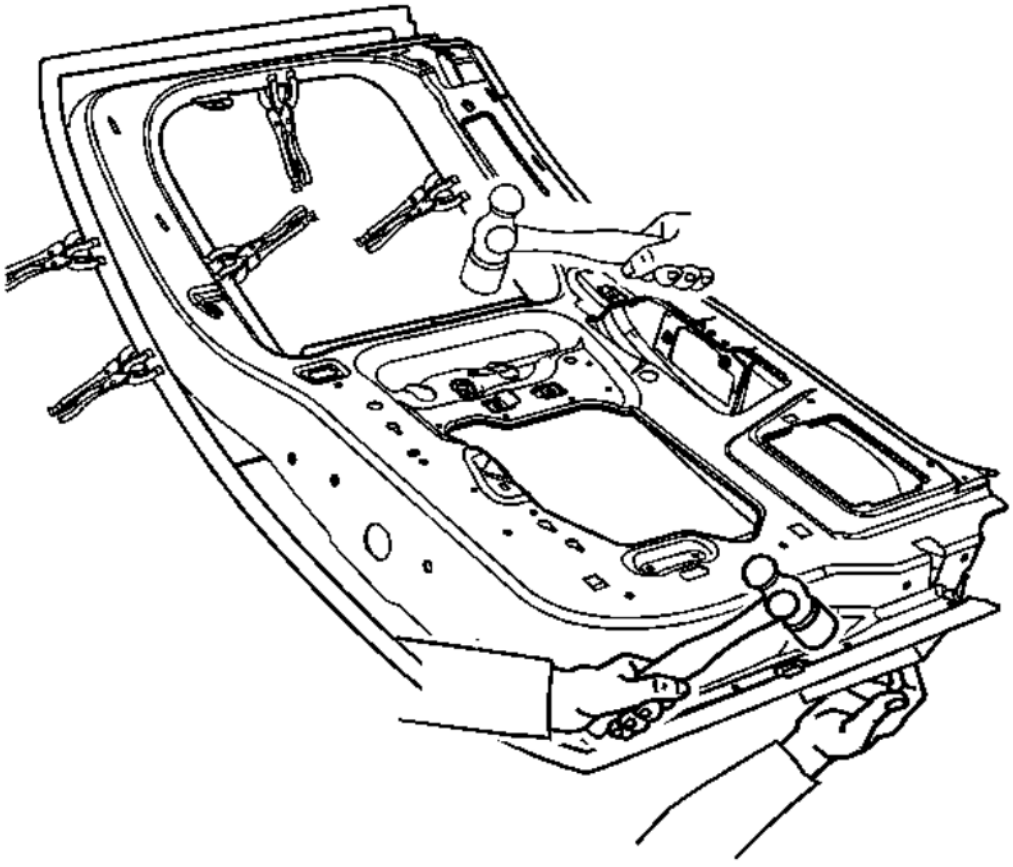


Fig. 73: Re-Hemming The Hem Flanges
Courtesy of GENERAL MOTORS CORP.

11. Using a hammer re-hem the hem flanges around the door shell.

    Continue to hammer in stages along the hem flanges.

12. Remove the excess adhesive from the door panel area.
13. Install the door to the vehicle. Inspect the door outer panel for proper alignment; then adjust the alignment, as required. Refer to **Rear Door Replacement (Extended Cab)** or **Rear Door Replacement (Crew Cab)** .

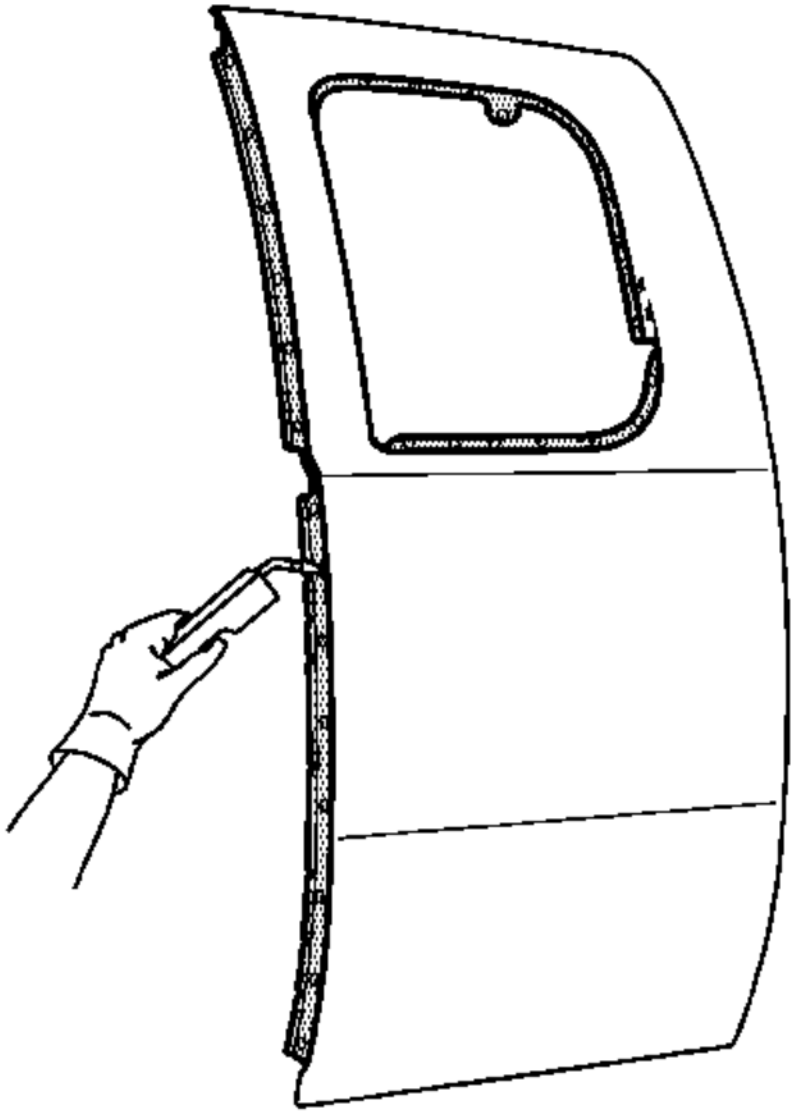


Fig. 74: MIG Welding Outer Door Panel
Courtesy of GENERAL MOTORS CORP.

14. Using metal-inert gas (MIG), weld the door outer panel to the door frame in the locations noted at the upper door frame.
15. Clean and prepare all welded surfaces.

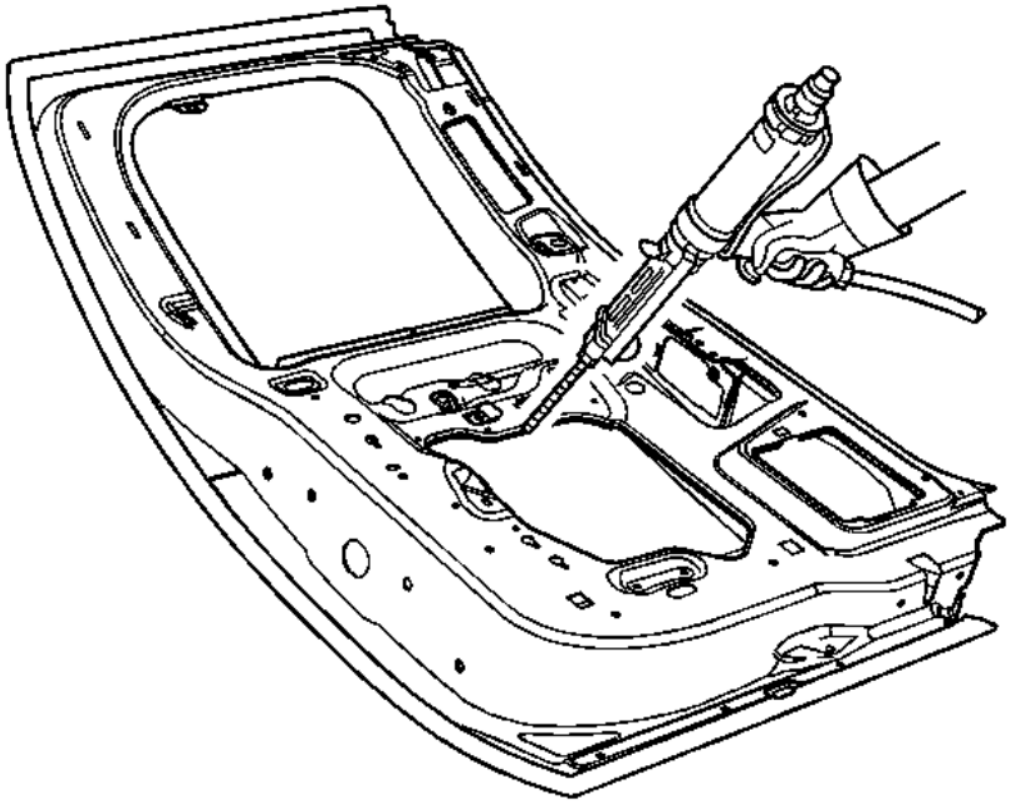


Fig. 75: Applying Anti-Flutter Foam
Courtesy of GENERAL MOTORS CORP.

16. Apply Fusor super flexible anti-flutter foam-fast set, Fusor P/N 121/124, or equivalent, evenly between the door outer panel and the upper belt reinforcement.
17. Apply sealers and anti-corrosion materials to the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
18. Paint the repaired area. Refer to **Basecoat/Clearcoat Paint Systems** .
19. Install all related panels and components.
20. Enable the SIR system. Refer to **SIR Disabling and Enabling** .
21. Connect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .

FRONT HINGE PILLAR SECTIONING

Removal Procedure

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

CAUTION: Refer to Glass and Sheet Metal Handling Caution .

CAUTION: Refer to Collision Sectioning Caution .

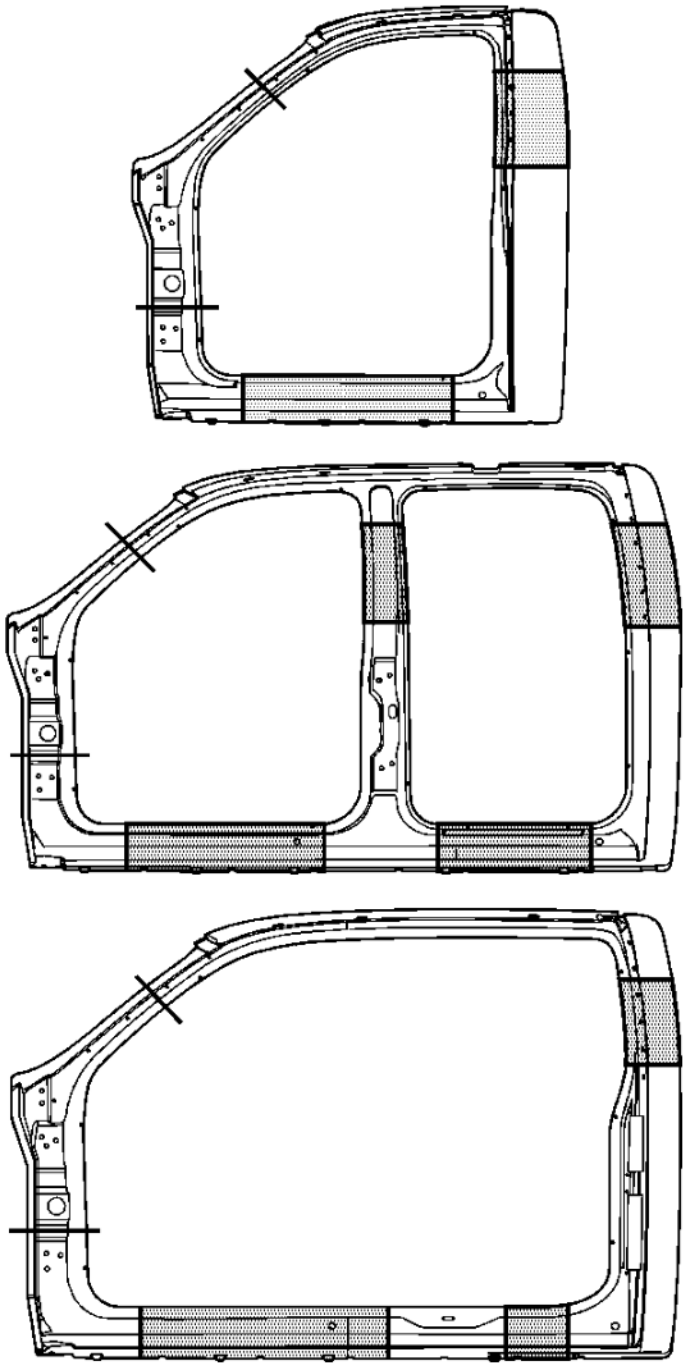


Fig. 76: View Of Sectioned Frame Areas
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The door frame can be replaced at the factory seams, but requires the

removal of the windshield, roof, and quarter panel. The sectioning procedures have been developed as a more cost-effective alternative to complete replacement. The specific area to be sectioned is determined by the extent of the damage to the vehicle.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling** .
2. Disconnect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .
3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications. Refer to **Dimensions - Body**.

CAUTION: Refer to Foam Sound Deadeners Caution .

5. Note the location and remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
6. Perform additional sectioning procedures as necessary. Refer to the following procedures:
   - **Outer Windshield Frame Pillar Sectioning**
   - **Rocker Outer Panel Sectioning**
   - **Center Pillar Sectioning**
   - **Rear Pillar Sectioning**

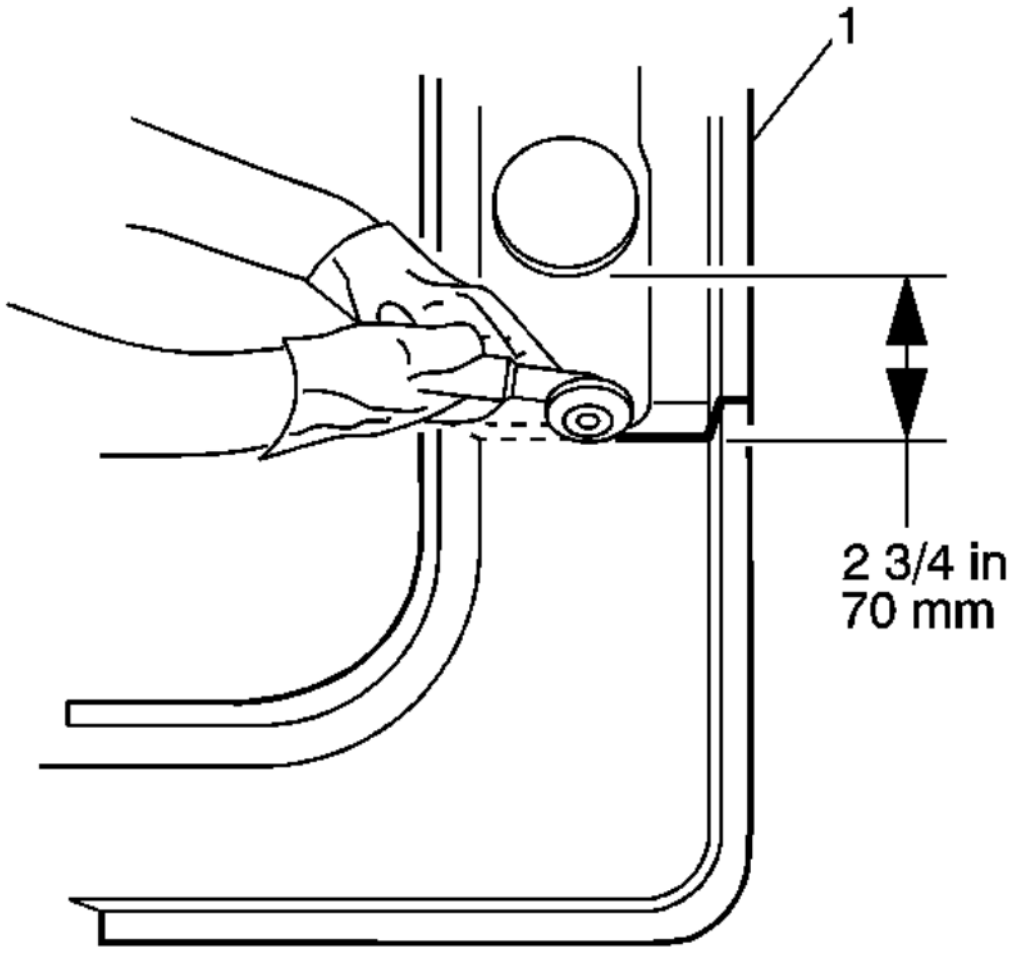


Fig. 77: Cutting Sectioning Panels
Courtesy of GENERAL MOTORS CORP.

7. Measure 70 mm (2 3/4 in) down from the large wiring harness hole in the hinge pillar (1). Mark a horizontal line.

IMPORTANT: Do not damage any inner panels or reinforcements.

8. Cut the panel in the locations where sectioning is to be performed.

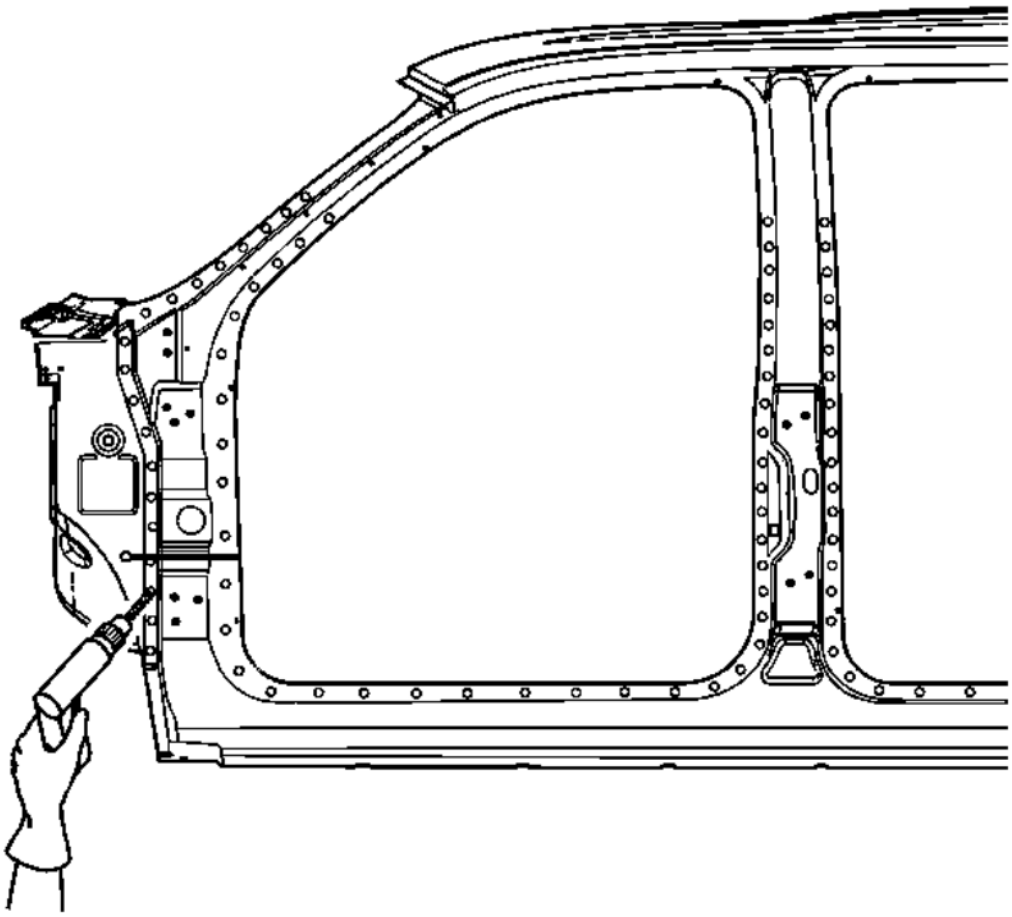


Fig. 78: Drilling Out Factory Welds
Courtesy of GENERAL MOTORS CORP.

9. Locate and drill out all factory welds. Note the number and location of the welds for installation of the service part.

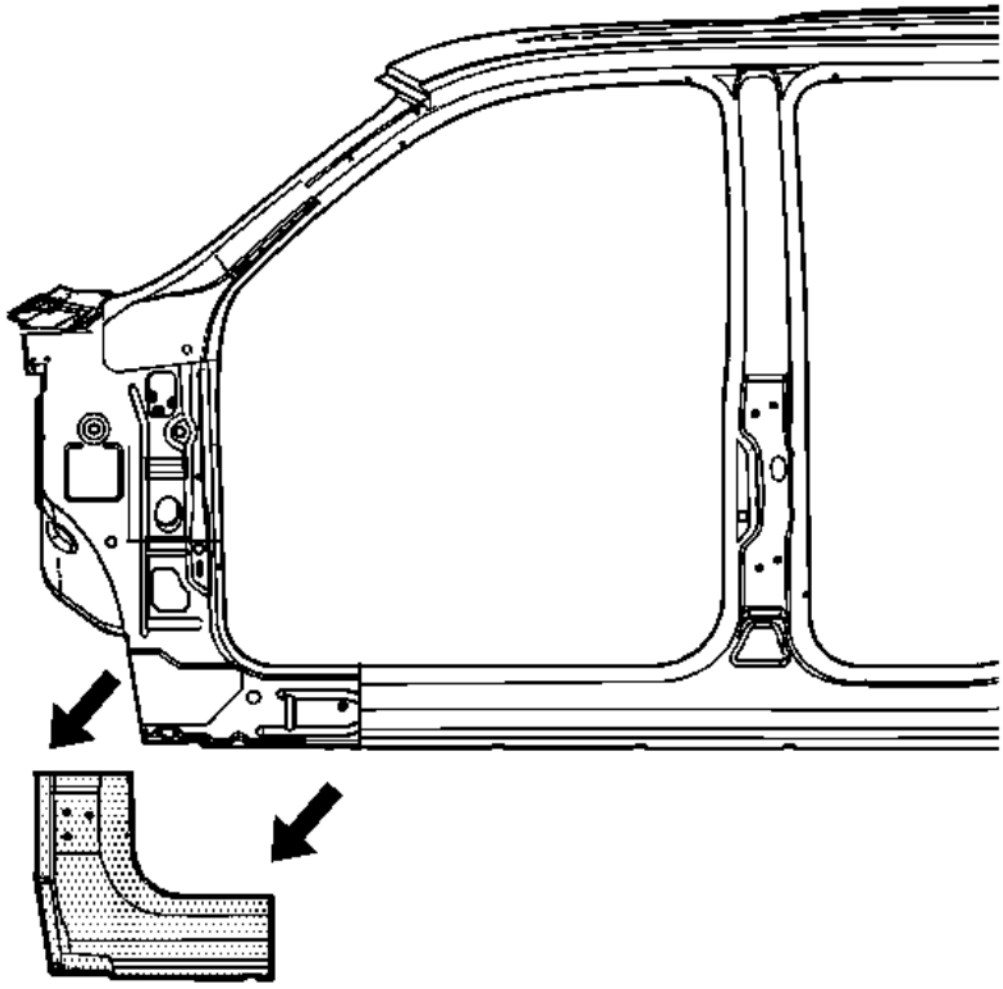


Fig. 79: View Of Damaged Hinge Pillar
Courtesy of GENERAL MOTORS CORP.

10. Remove the damaged hinge pillar.

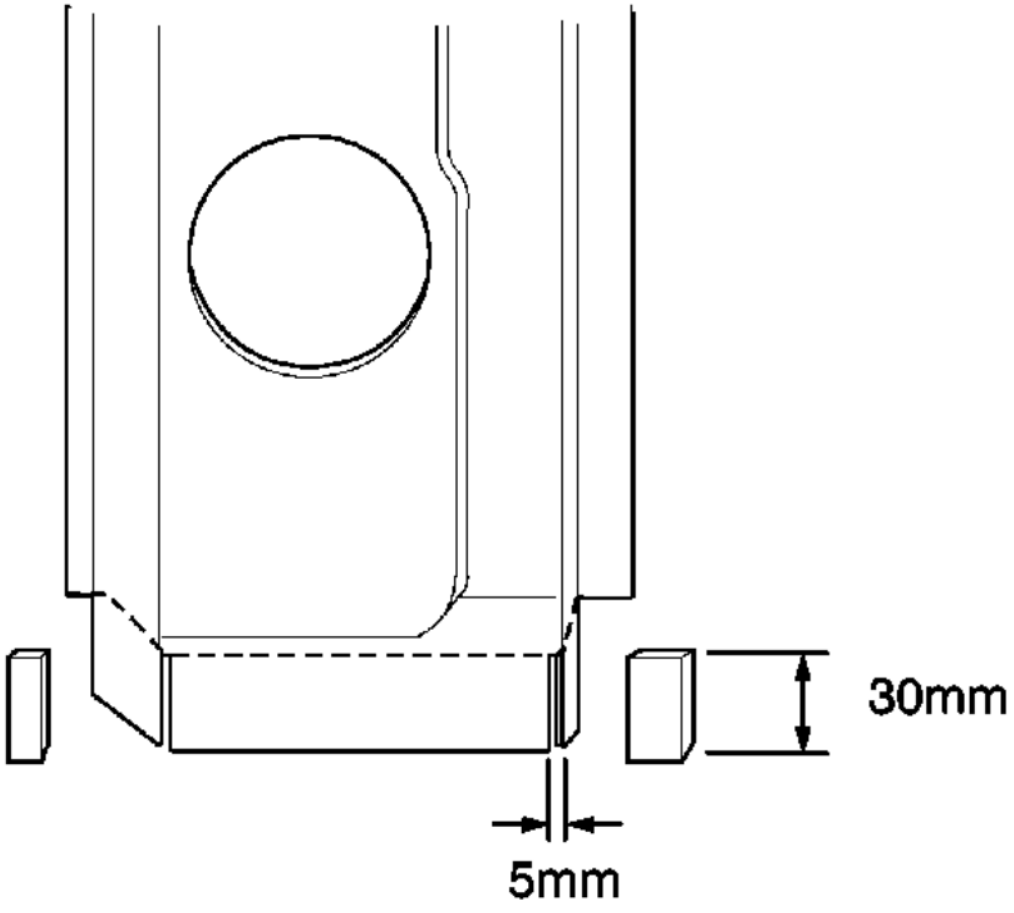


Fig. 80: Cutting 30 mm Tabs
Courtesy of GENERAL MOTORS CORP.

11. Cut and remove 30 mm (1 3/16 in) from the flanges on either side of the remaining section of the original piller. Cut 5 mm (3/16 in) wide gaps in the bottom corners.

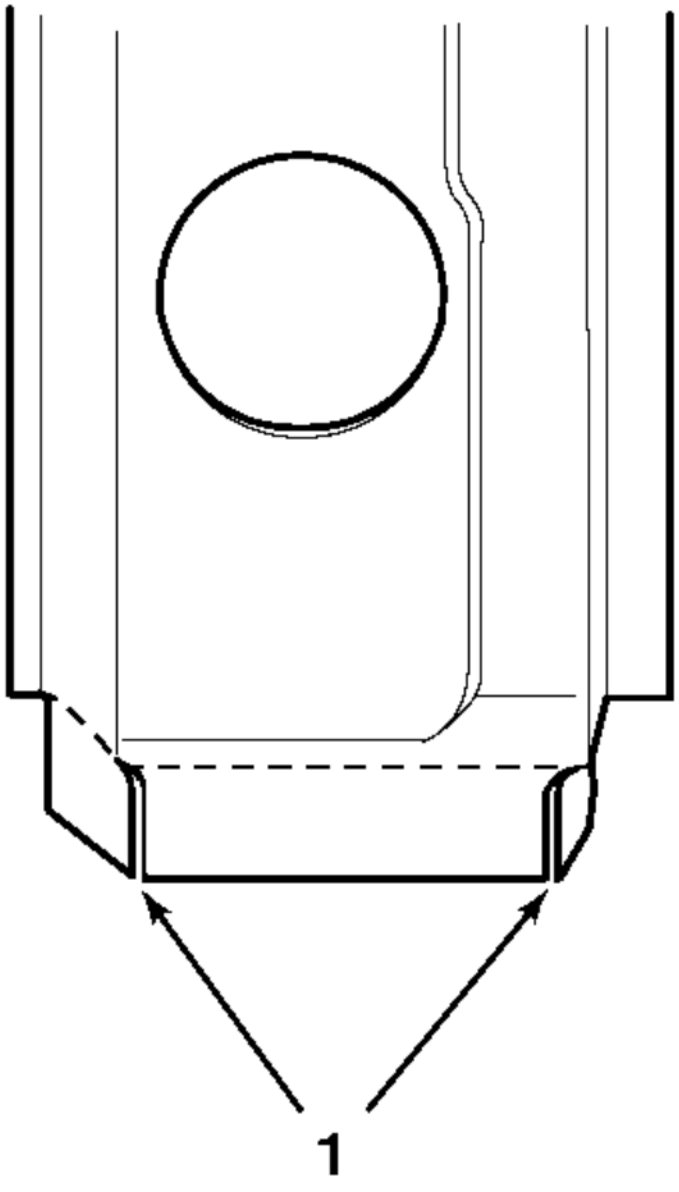


Fig. 81: Stepping Tabs
Courtesy of GENERAL MOTORS CORP.

12. Step the tabs (1) inward to allow the door frame opening service section to fit over the original hinge pillar.

Installation Procedure

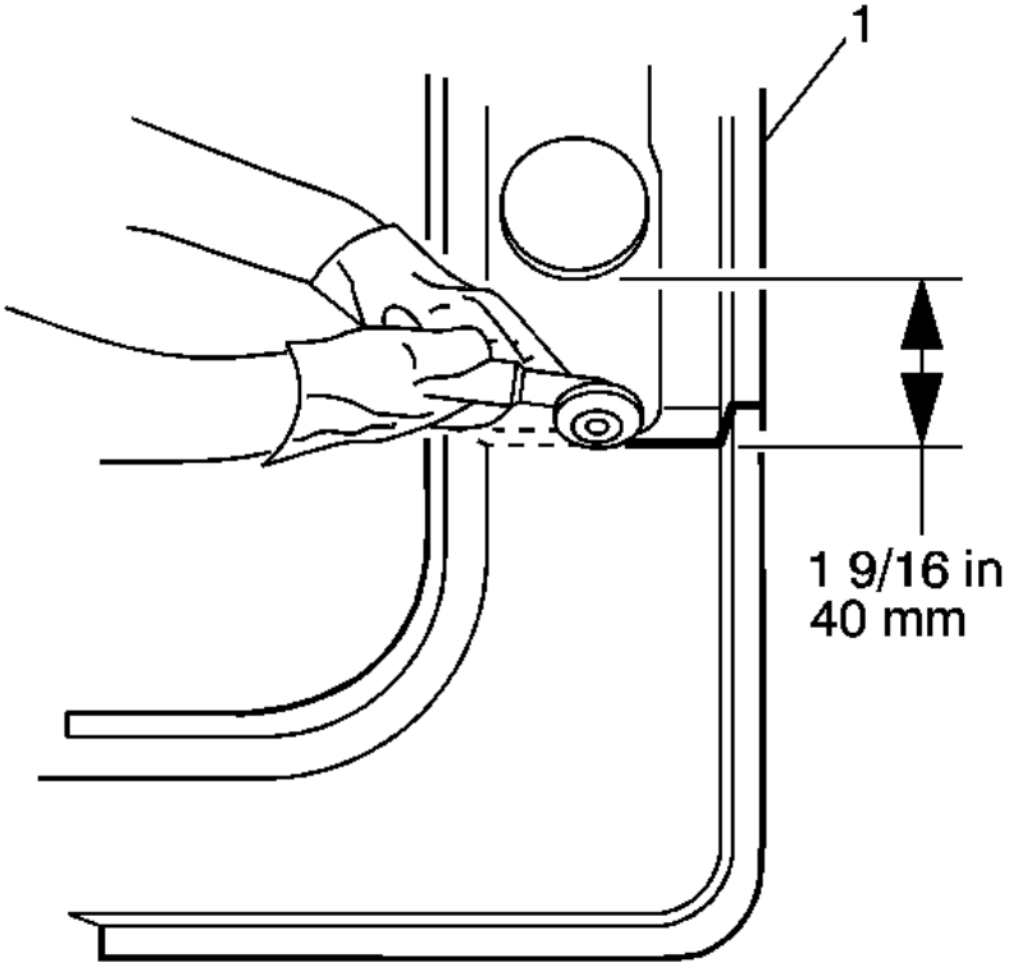


Fig. 82: Cutting Hinge Pillar
Courtesy of GENERAL MOTORS CORP.

1. On the service body side, measure 40 mm (1 9/16 in) down from the large wiring harness hole in the hinge pillar. Mark a horizontal line. Cut the hinge pillar (1) along this line.
2. Perform additional sectioning procedures as necessary to remove the unused areas of the service part.

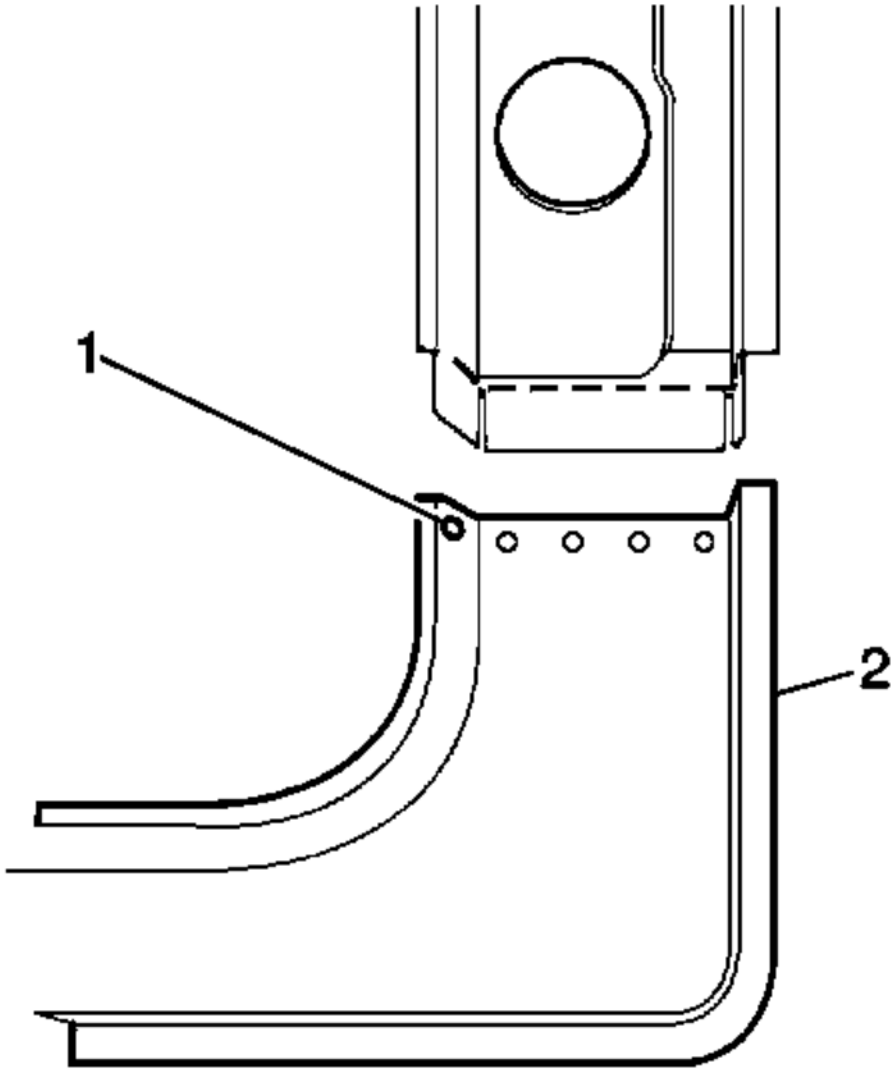


Fig. 83: Plug Weld Holes & Service Part
Courtesy of GENERAL MOTORS CORP.

3. Drill 8 mm (5/16 in) plug weld holes along the sectioning cut on the remaining original part (2). Locate these holes approximately 25 mm (1 in) (a) from the edge and spaced 40 mm (1 1/2 in) apart.

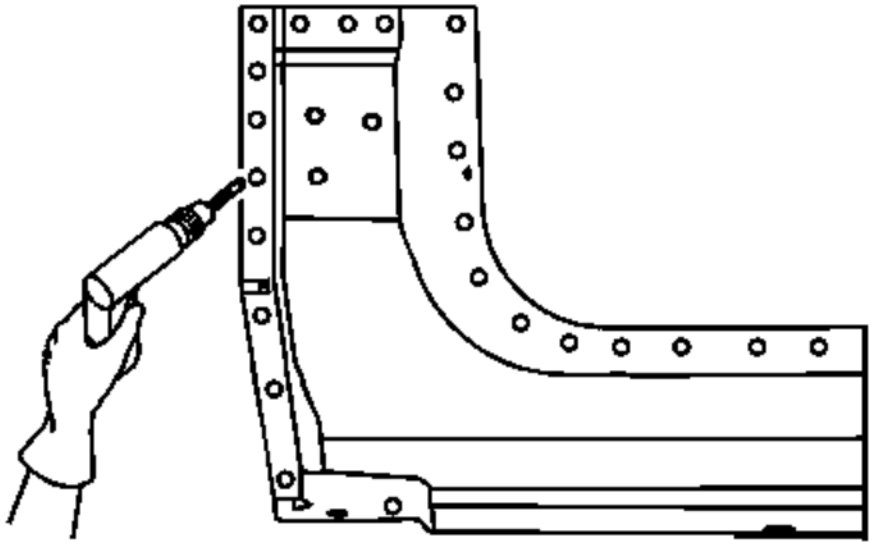


Fig. 84: Drilling Plug Weld Holes
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: If the location of the original plug weld holes cannot be determined, or if structural weld-thru adhesive was present, space the plug weld holes every 40 mm (1 1/2 in) apart.

4. Drill 8 mm (5/16 in) plug weld holes in the service part, as necessary, in the locations noted from the original panel and along the sectioning cut.
5. Prepare all attachment surfaces, as necessary.
6. Apply GM-approved Weld-Thru Coating or equivalent to all mating surfaces. Refer to **Anti-Corrosion Treatment and Repair** .

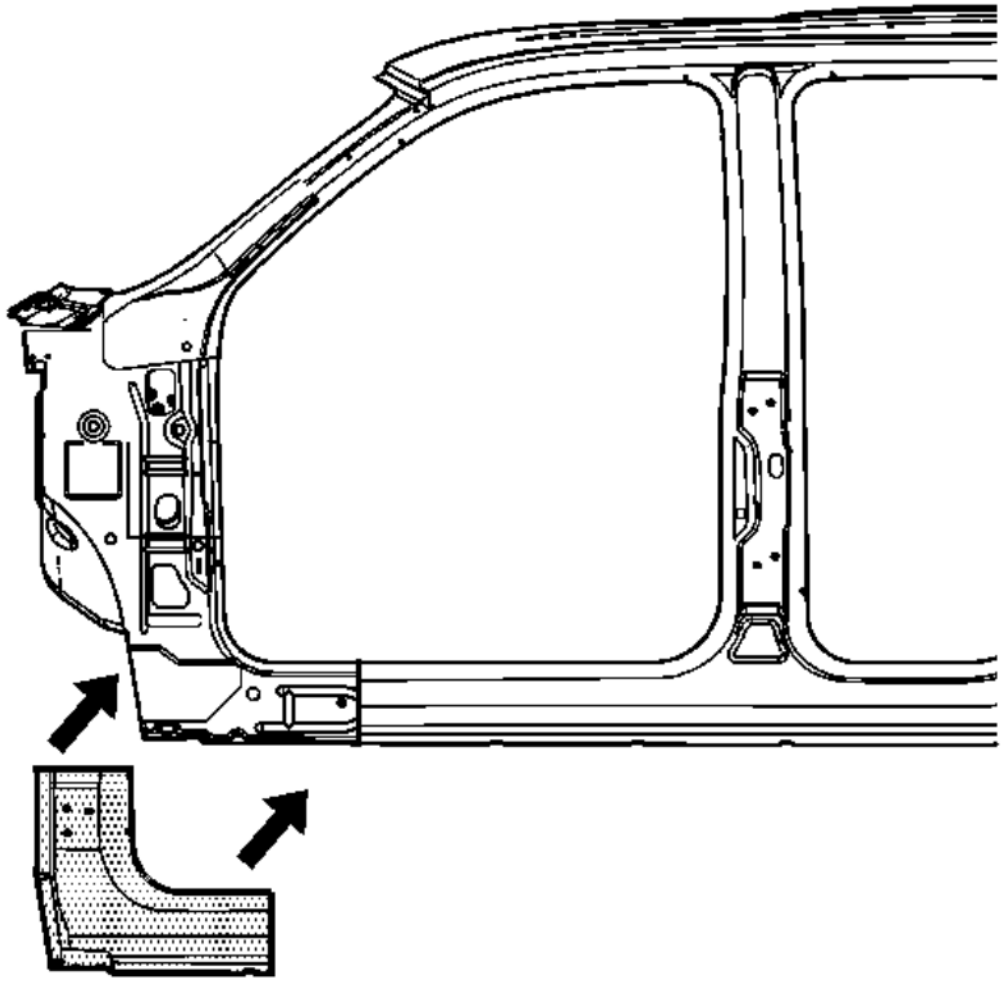


Fig. 85: View Of Hinge Pillar
Courtesy of GENERAL MOTORS CORP.

7. Position the hinge pillar to the vehicle using 3-dimensional measuring equipment. Clamp in place.

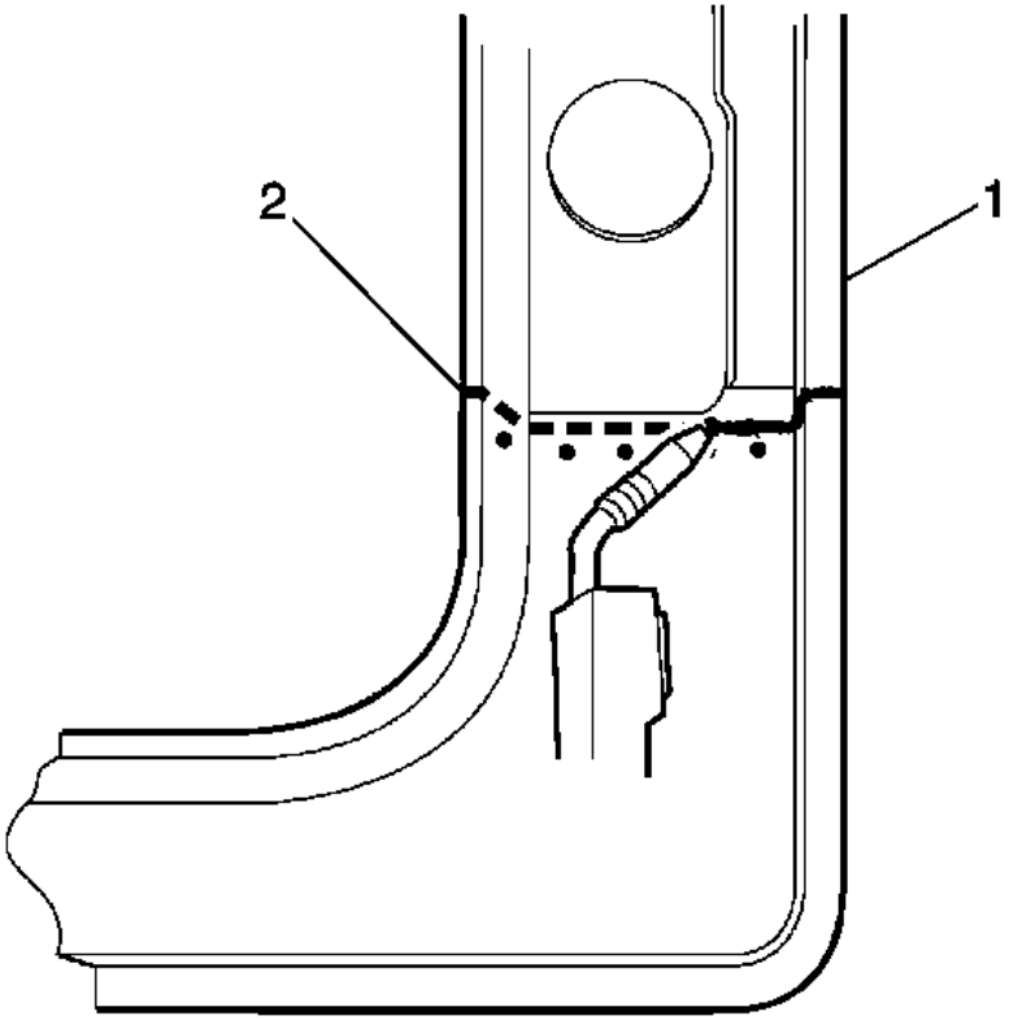


Fig. 86: Welding Service Part
Courtesy of GENERAL MOTORS CORP.

8. Plug weld accordingly.

IMPORTANT: To create a solid weld with minimum heat distortion, make 25 mm (1 in) stitch welds along the seam (2) with 25 mm (1 in) gaps between them. Complete the stitch weld.

9. Clean and prepare all welded surfaces.
10. Apply the sealers and anti-corrosion materials to the repair area (1), as necessary. Refer to **Anti-**

Corrosion Treatment and Repair .

11. Paint the repair area. Refer to **Basecoat/Clearcoat Paint Systems** .
12. Install all related panels and components.
13. Connect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .
14. Enable the SIR system. Refer to **SIR Disabling and Enabling** .

CENTER PILLAR SECTIONING

Removal Procedure

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

CAUTION: Refer to Glass and Sheet Metal Handling Caution .

CAUTION: Refer to Collision Sectioning Caution .

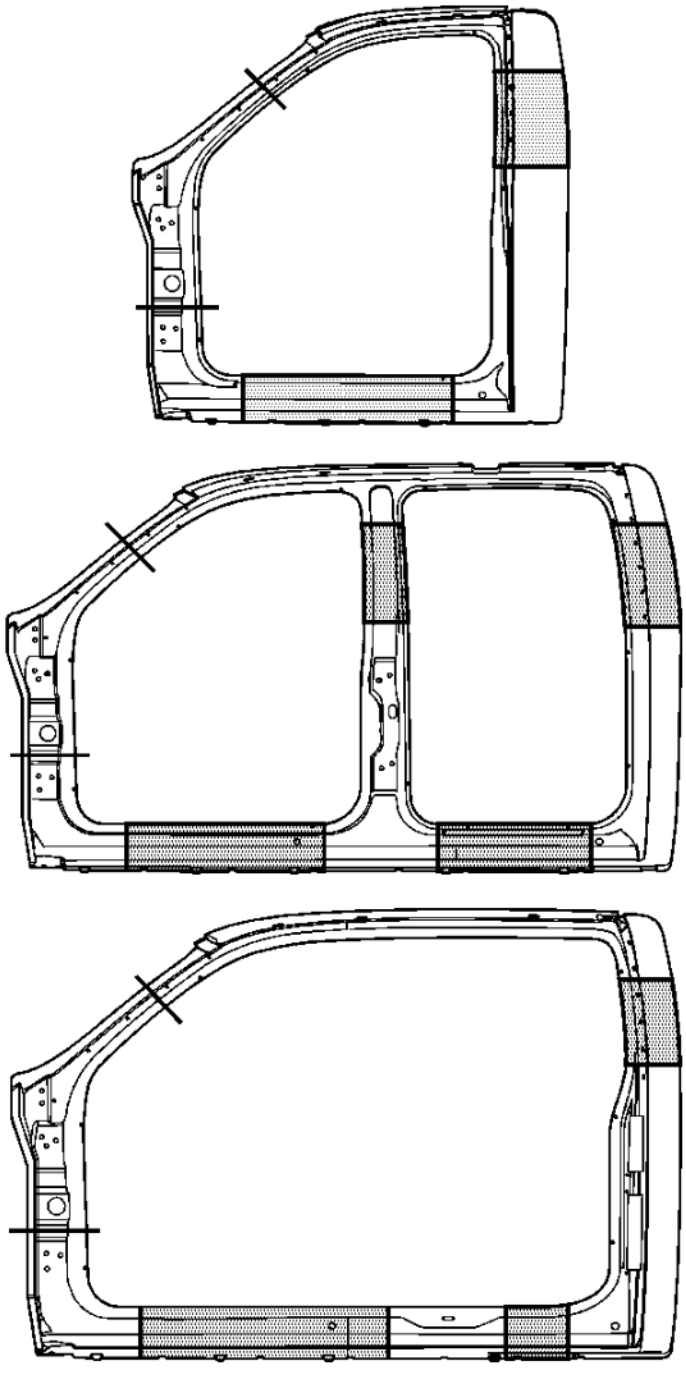


Fig. 87: View Of Sectioned Frame Areas
Courtesy of GENERAL MOTORS CORP.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling** .

2. Disconnect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .
3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications. Refer to **Dimensions - Body**.

CAUTION: Refer to Foam Sound Deadeners Caution .

5. Note the location and remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
6. Perform additional sectioning procedures as necessary. Refer to the following procedures:
   - **Outer Windshield Frame Pillar Sectioning**
   - **Front Hinge Pillar Sectioning**
   - **Rocker Outer Panel Sectioning**
   - **Rear Pillar Sectioning**

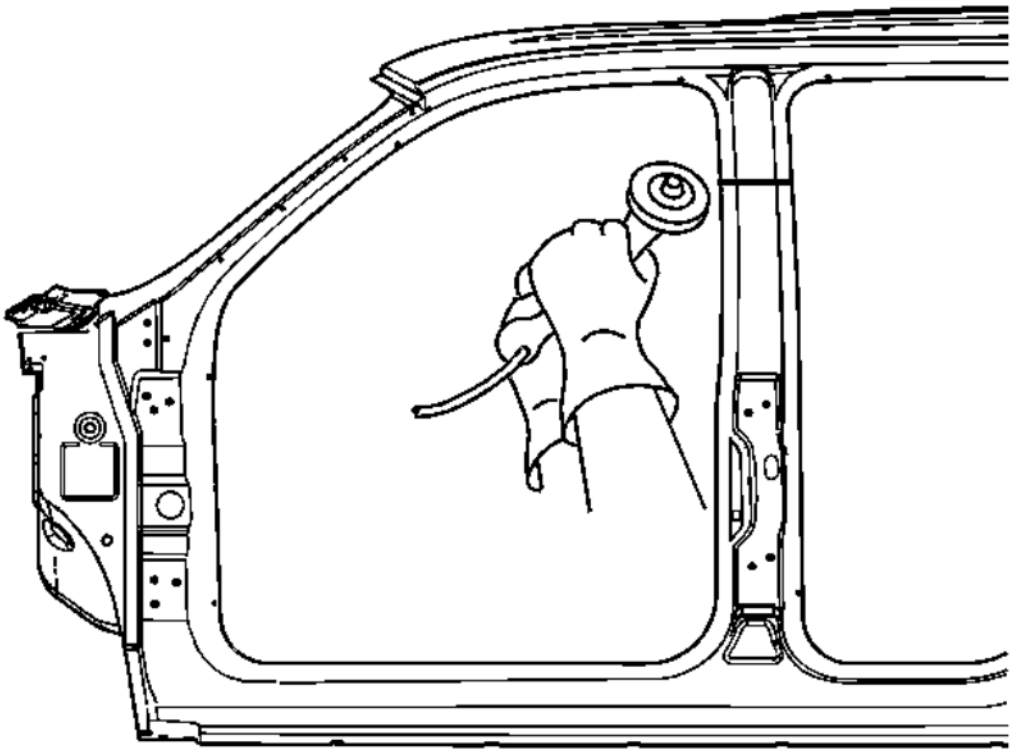


Fig. 88: Cutting Panel In Sectioning Locations
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not damage any inner panels or reinforcements.

7. Cut the panel in the locations where sectioning is to be performed.

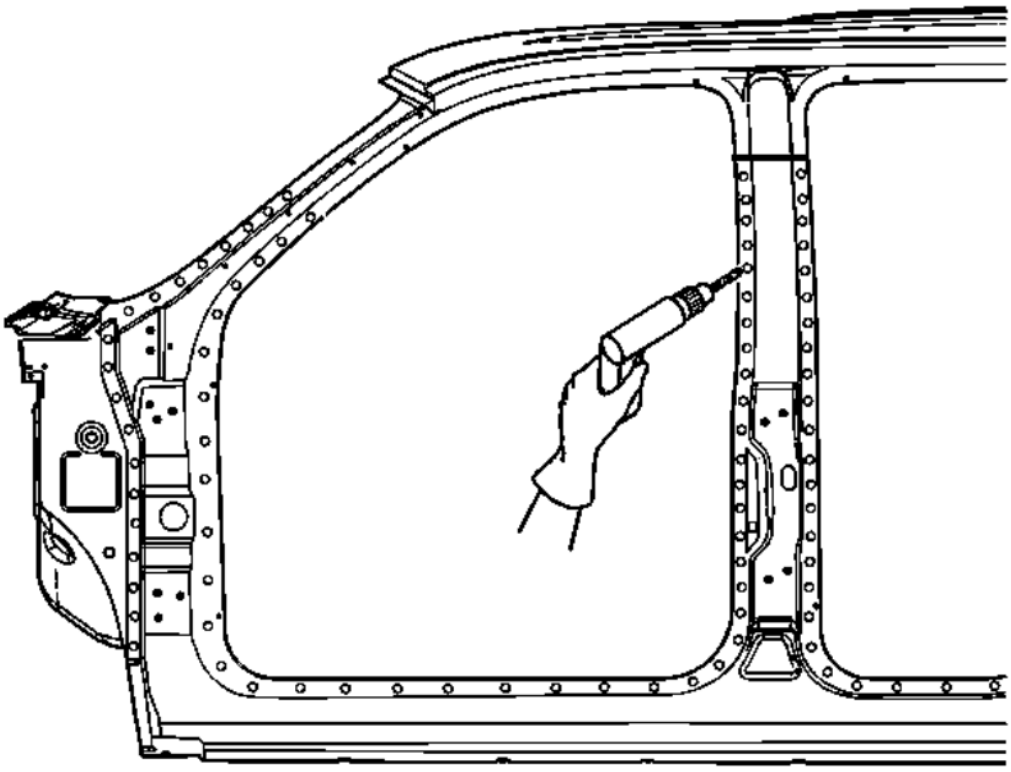


Fig. 89: Drilling Out Factory Welds
Courtesy of GENERAL MOTORS CORP.

8. Locate and drill out all factory welds. Note the number and location of the welds for installation of the service part.

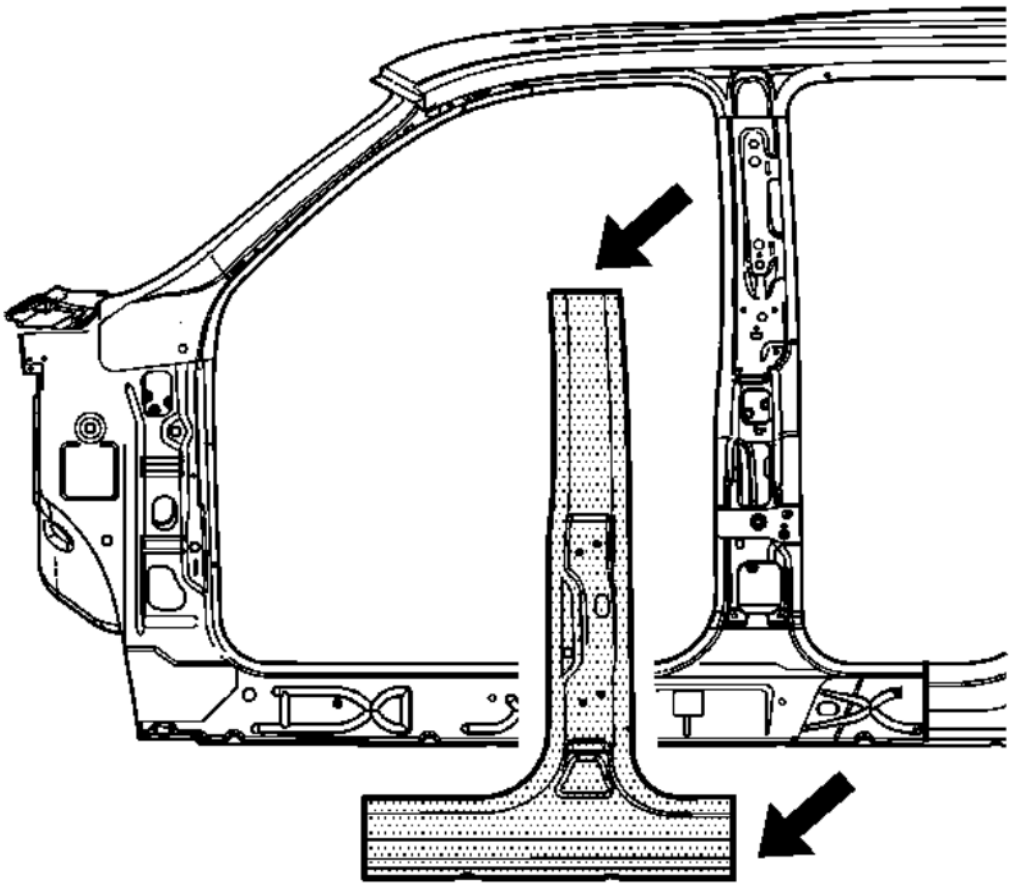


Fig. 90: View Of Damaged Pillar Section
Courtesy of GENERAL MOTORS CORP.

9. Remove the damaged pillar section.

Installation Procedure

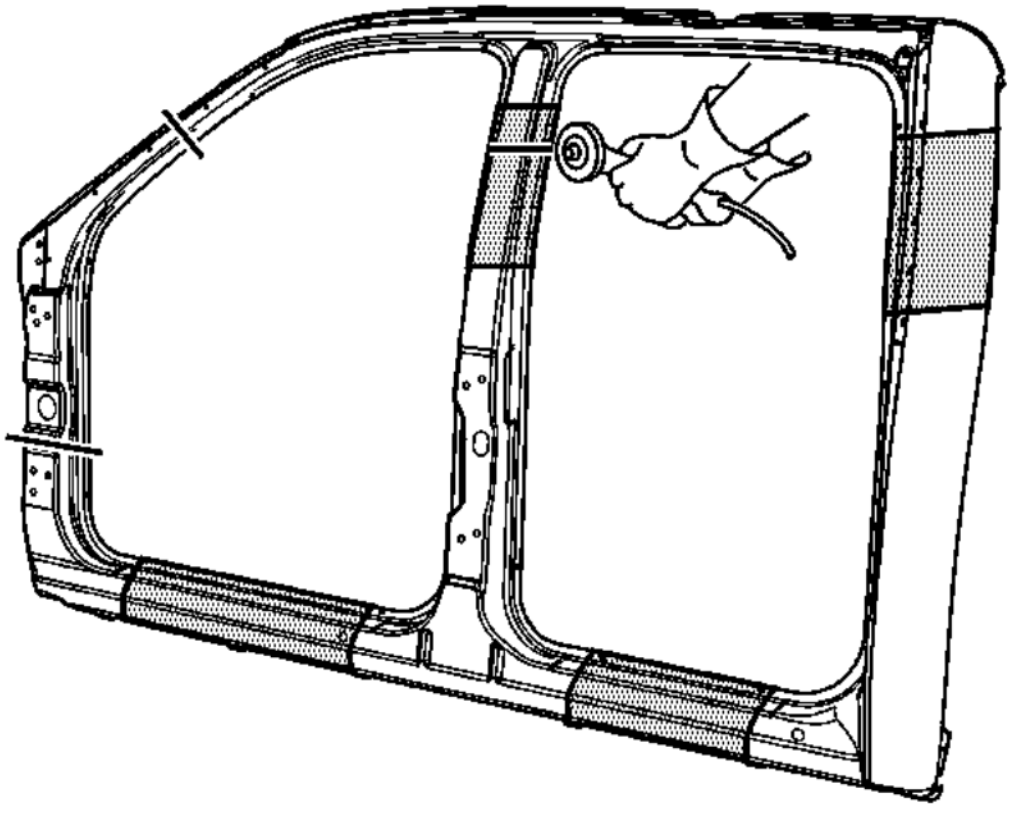


Fig. 91: Cutting Body For Sectioning Joint
Courtesy of GENERAL MOTORS CORP.

1. Cut the replacement body side in corresponding locations to fit the remaining original panel. The sectioning joint should be trimmed to allow a gap of 11/2 times the metal thickness at the sectioning joint.

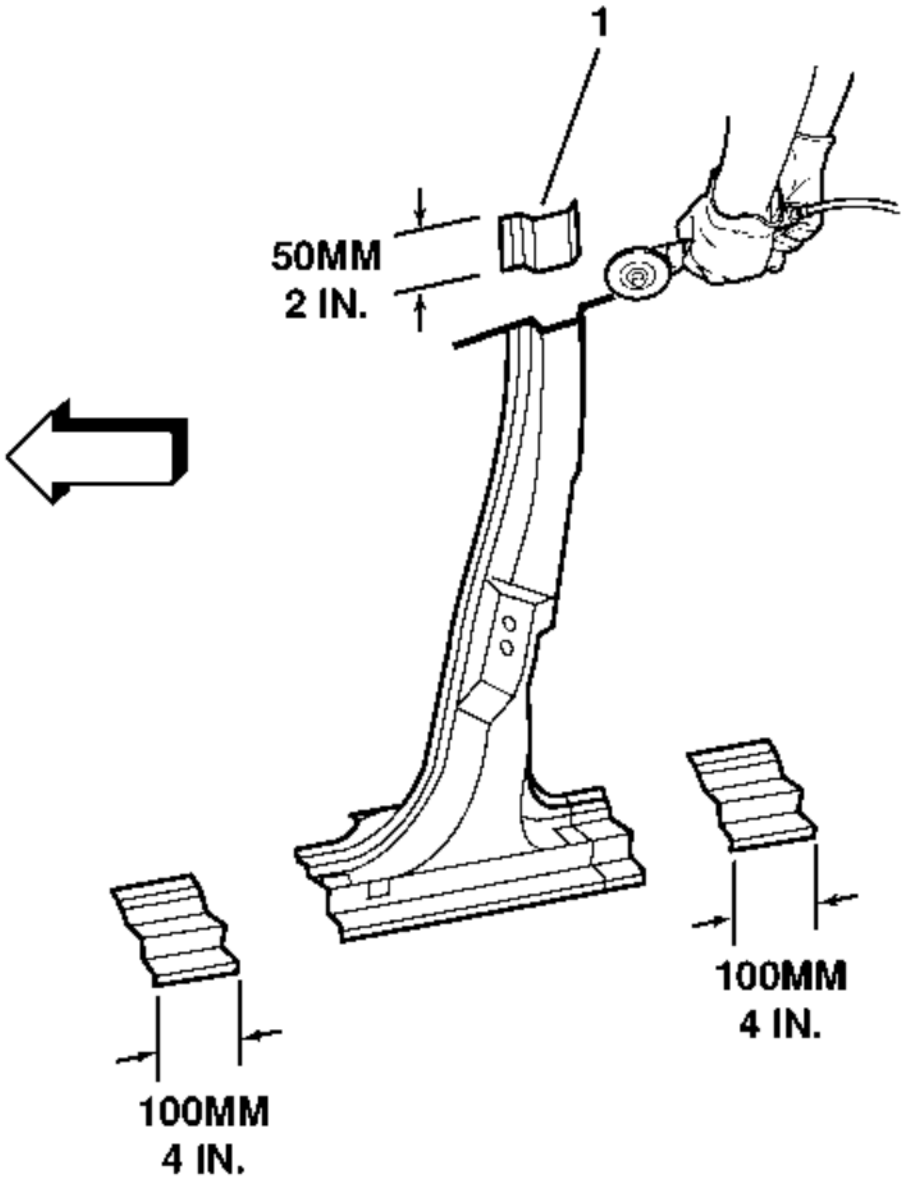


Fig. 92: Creating Backing Plate
Courtesy of GENERAL MOTORS CORP.

2. Create a 50 mm (2 in) (1) backing plate from the unused portion of the service part. Trim the backing plate as necessary to fit behind the sectioning joint where there is no reinforcement.

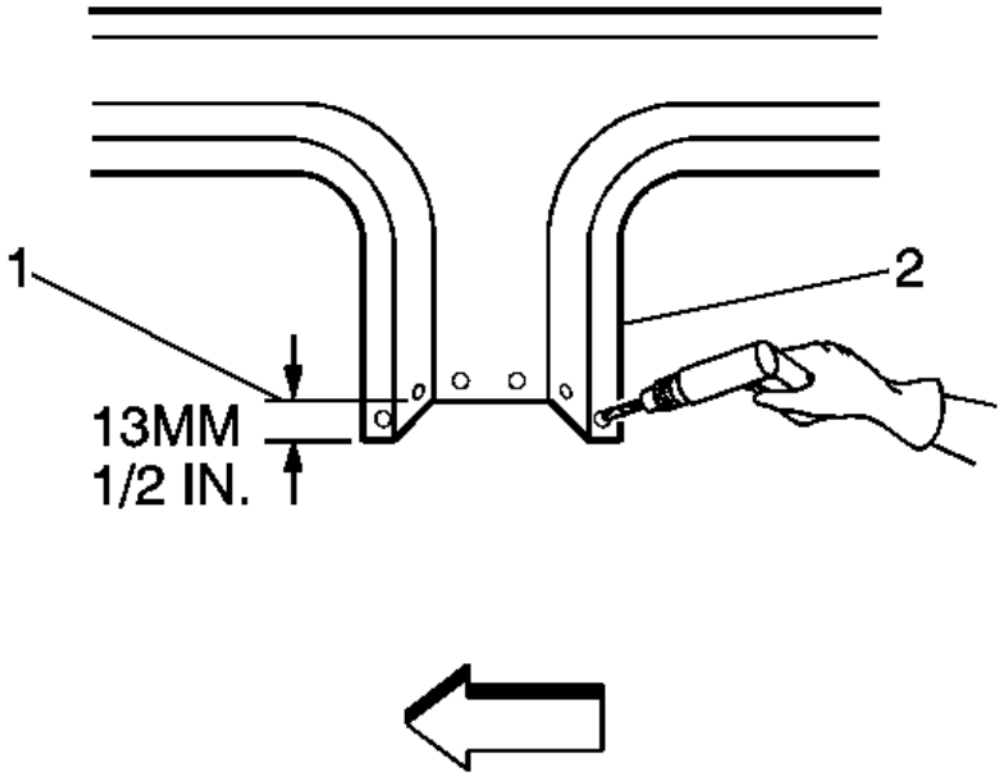


Fig. 93: Drilling Plug Weld Holes
Courtesy of GENERAL MOTORS CORP.

3. Drill 8 mm (5/16 in) plug weld holes along the sectioning cut on the remaining original part (2). Locate these holes approximately 13 mm (1/2 in) from the edge (1) and spaced 40 mm (1 1/2 in) apart.

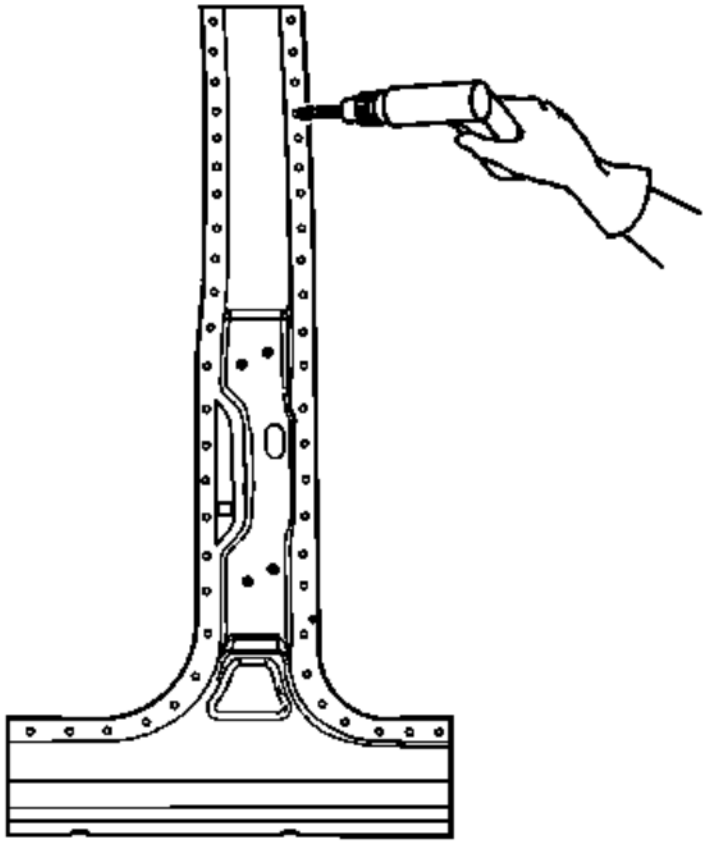


Fig. 94: Drilling Plug Weld Holes
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: If the location of the original plug weld holes cannot be determined, space the plug weld holes every 40 mm (1 1/2 in) apart.

4. Drill 8 mm (5/16 in) plug weld holes in the service part as necessary in the locations noted from the original panel and along the sectioning cut.

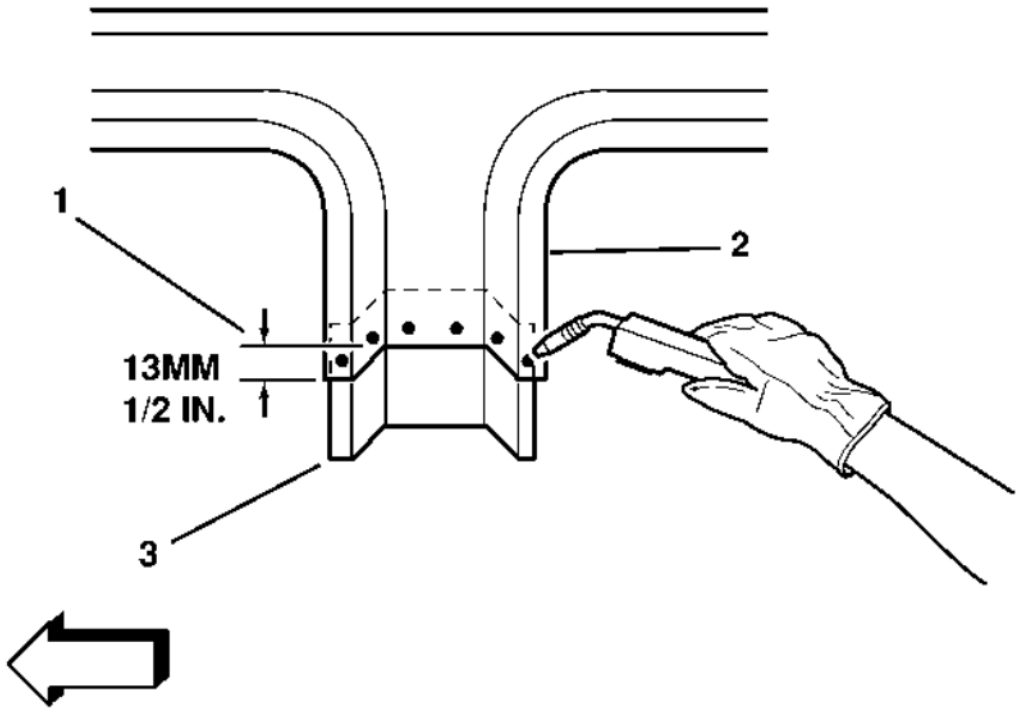


Fig. 95: Plug Weld Holes & Welding Backing Plate
Courtesy of GENERAL MOTORS CORP.

5. Prepare all attachment surfaces, as necessary.
6. Apply GM-approved Weld-Thru Coating or equivalent to all mating surfaces. Refer to **Anti-Corrosion Treatment and Repair** .
7. Fit the backing plate (3) halfway into the sectioning joint, clamp and plug weld to the vehicle.

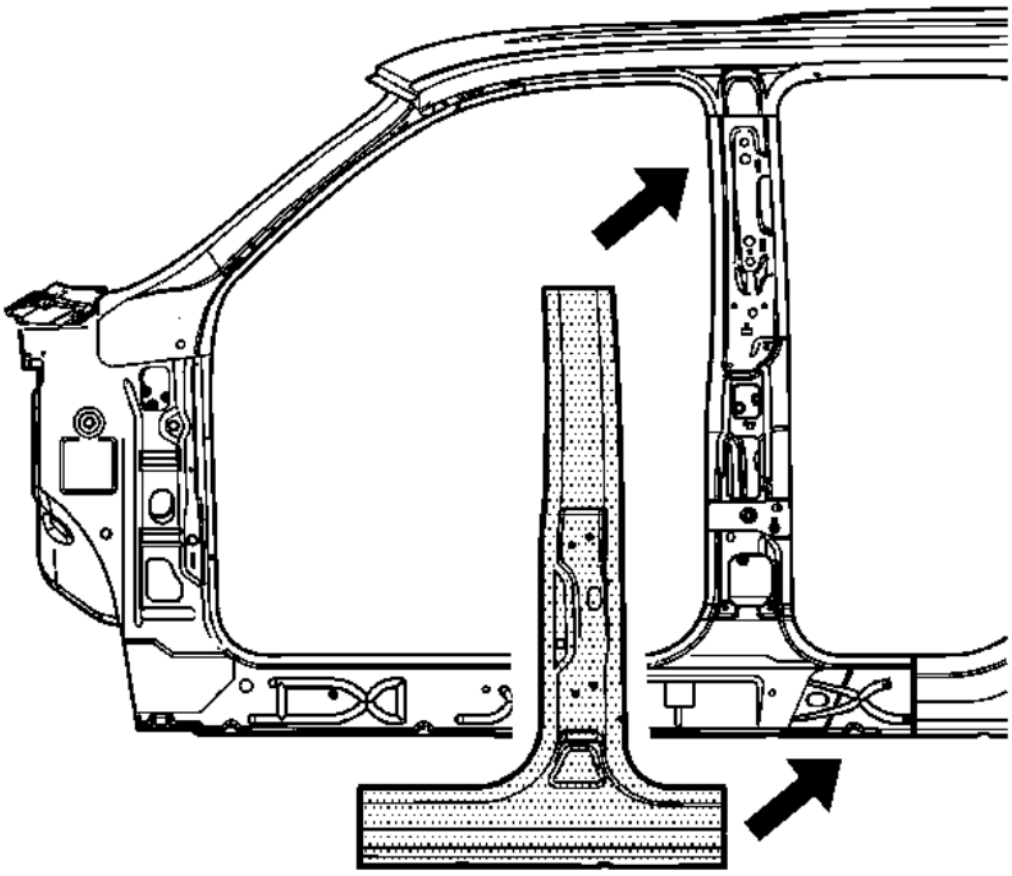


Fig. 96: View Of Replacement Pillar
Courtesy of GENERAL MOTORS CORP.

8. Position the center pillar to the vehicle using 3-dimensional measuring equipment. Clamp in place.

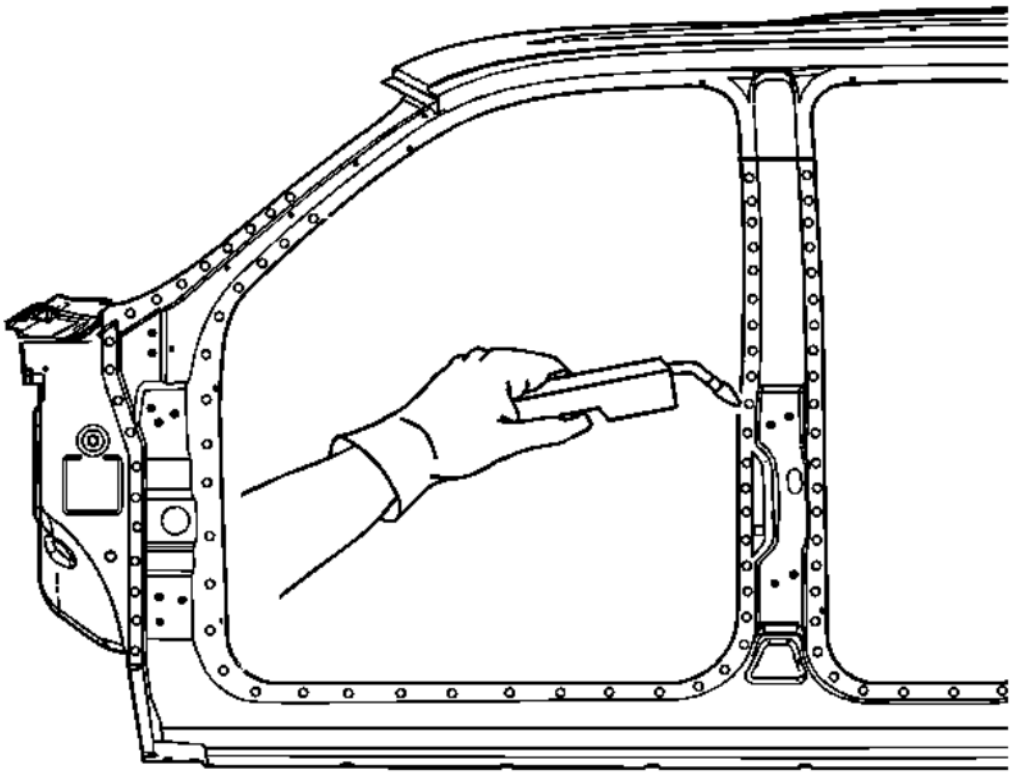


Fig. 97: View Of Plug Welding Replacement Pillar
Courtesy of GENERAL MOTORS CORP.

9. Plug weld accordingly.

IMPORTANT: To create a solid weld with minimum heat distortion, make 25 mm (1 in) stitch welds along the seam with 25 mm (1 in) gaps between them. Complete the stitch weld.

10. Clean and prepare all welded surfaces.
11. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
12. Paint the repair area. Refer to **Basecoat/Clearcoat Paint Systems** .
13. Install all related panels and components.
14. Connect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .

15. Enable the SIR system. Refer to **SIR Disabling and Enabling** .

REAR PILLAR SECTIONING

Removal Procedure

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

CAUTION: Refer to Glass and Sheet Metal Handling Caution .

CAUTION: Refer to Collision Sectioning Caution .

CAUTION: Refer to Sealing the Quarter Panel Caution .

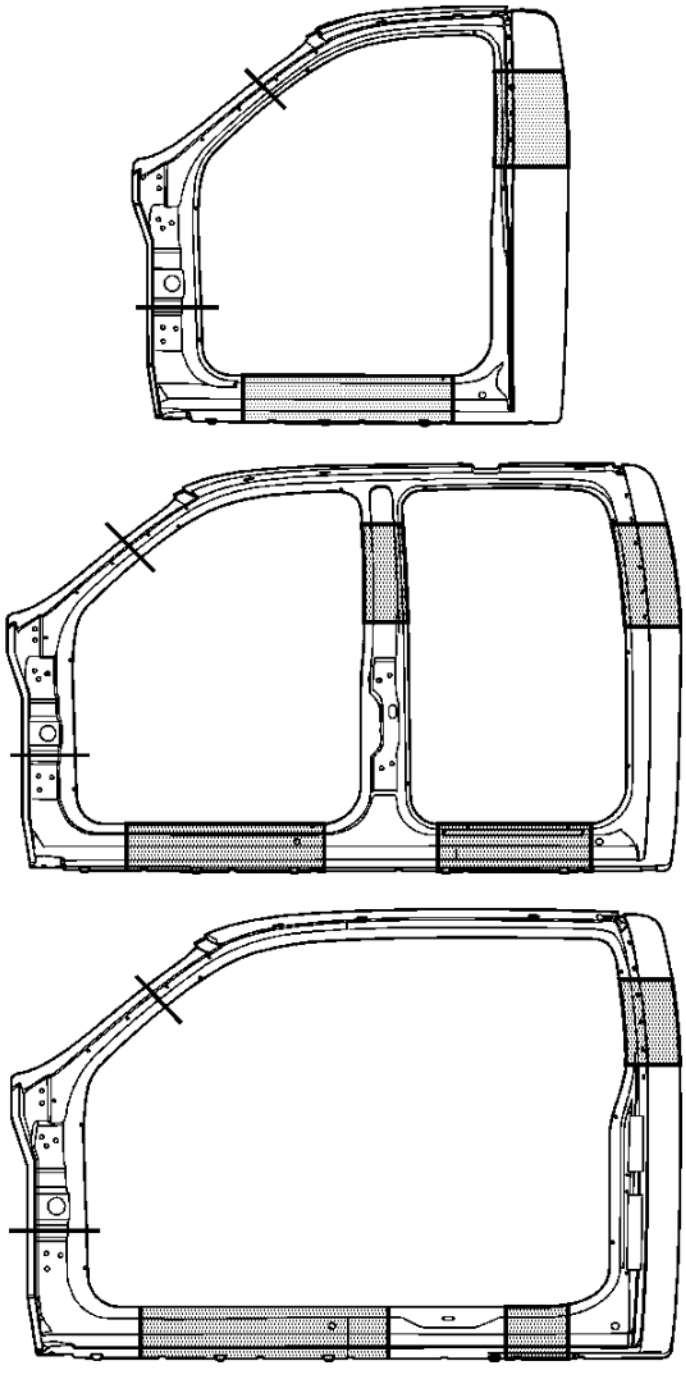


Fig. 98: View Of Sectioned Frame Areas
Courtesy of GENERAL MOTORS CORP.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling** .

2. Disconnect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .
3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications. Refer to **Dimensions - Body**.

CAUTION: Refer to Foam Sound Deadeners Caution .

5. Note the location and remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
6. Perform additional sectioning procedures, as necessary. Refer to the following procedures:
   - **Outer Windshield Frame Pillar Sectioning**
   - **Front Hinge Pillar Sectioning**
   - **Rocker Outer Panel Sectioning**
   - **Center Pillar Sectioning**

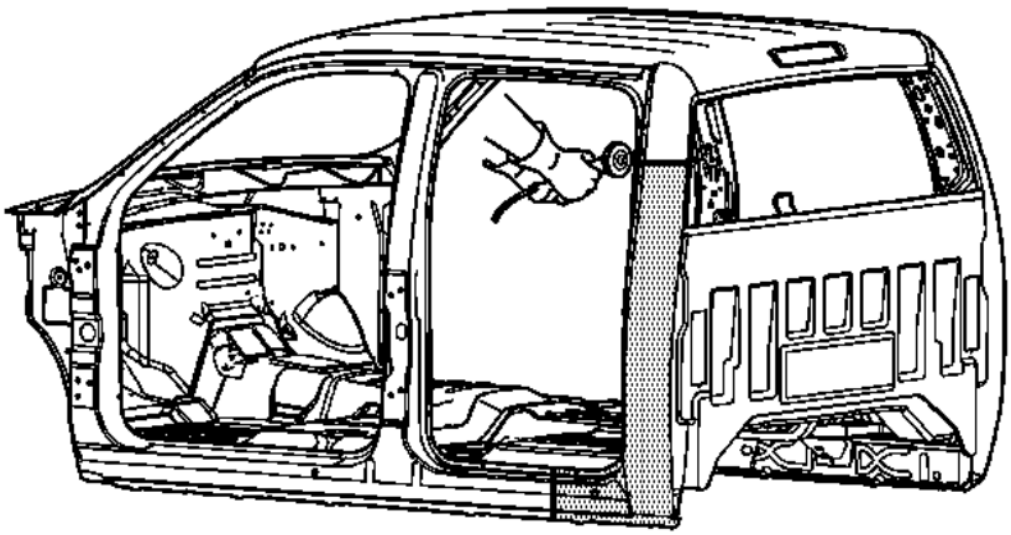


Fig. 99: Cutting Panels For Sectioning
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not damage any inner panels or reinforcements.

7. Cut the panel in the locations where sectioning is to be performed.

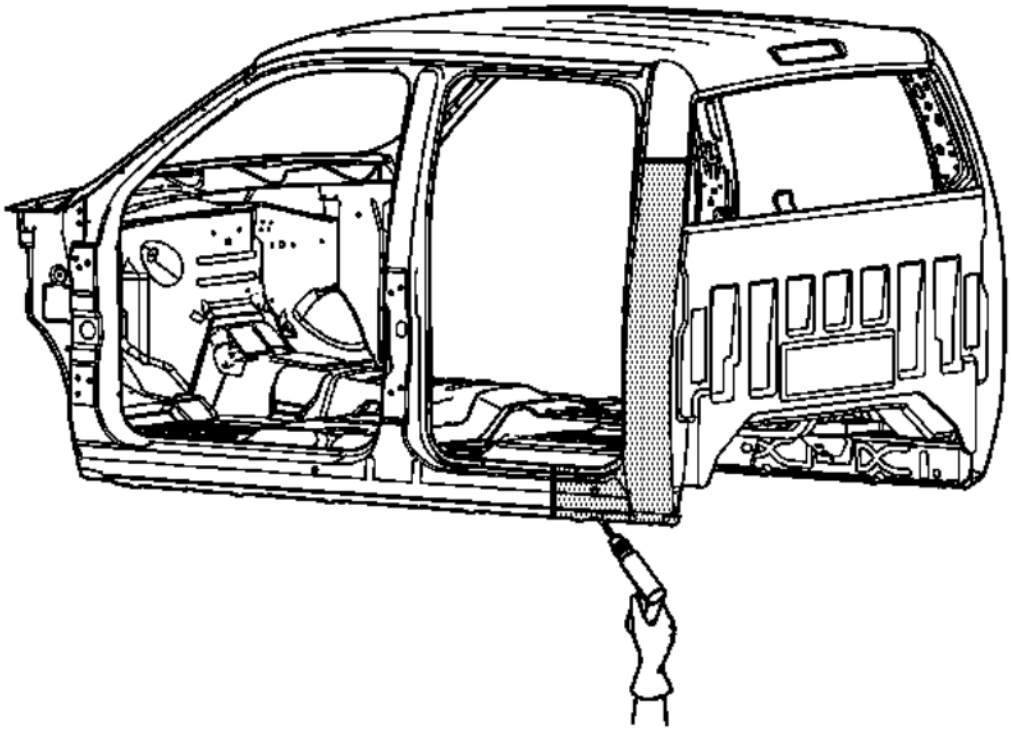


Fig. 100: Drilling Out Factory Welds
Courtesy of GENERAL MOTORS CORP.

8. Locate and drill out all factory welds. Note the number and location of the welds for installation of the service part.

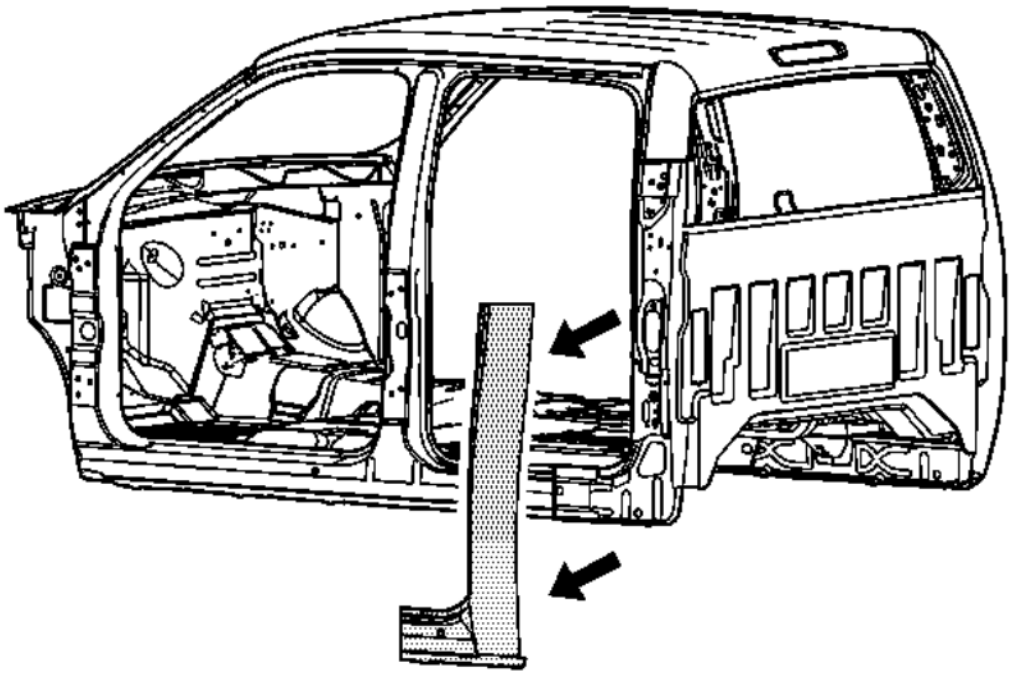


Fig. 101: View Of Damaged Pillar Section
Courtesy of GENERAL MOTORS CORP.

9. Remove the damaged pillar section.

Installation Procedure

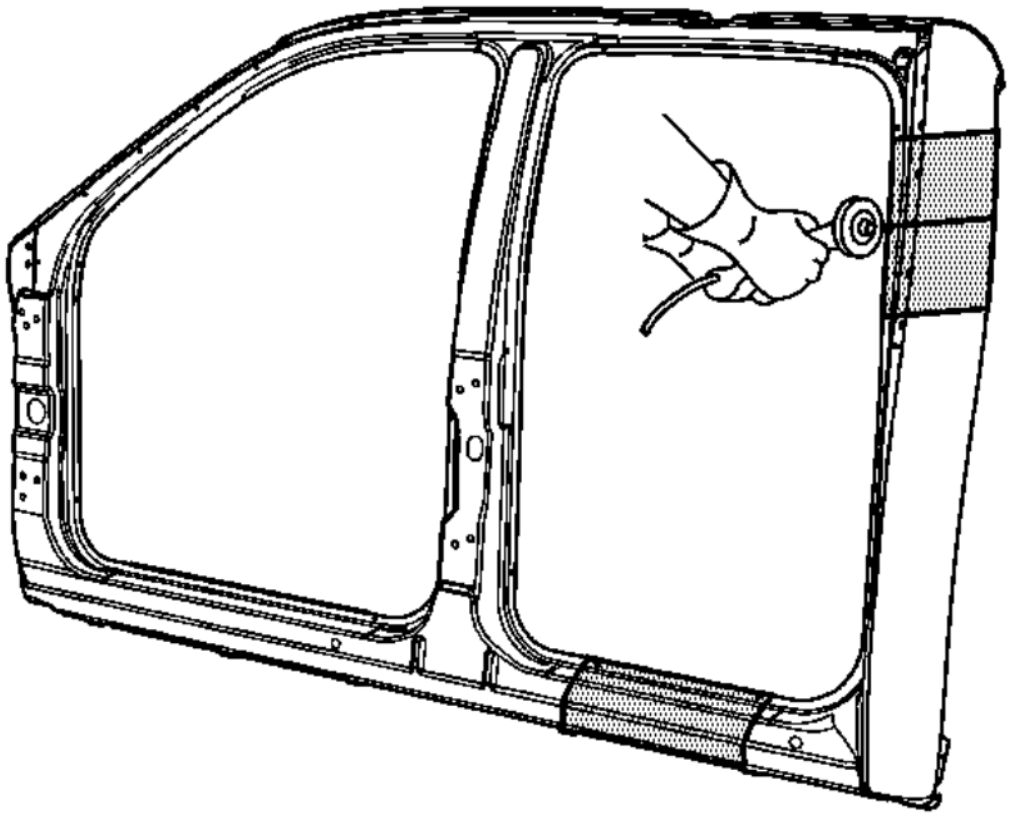


Fig. 102: Cutting Panel For Sectioning
Courtesy of GENERAL MOTORS CORP.

1. Cut the replacement body side in corresponding locations to fit the remaining original panel. The sectioning joint should be trimmed to allow a gap of 11/2 times the metal thickness at the sectioning joint.

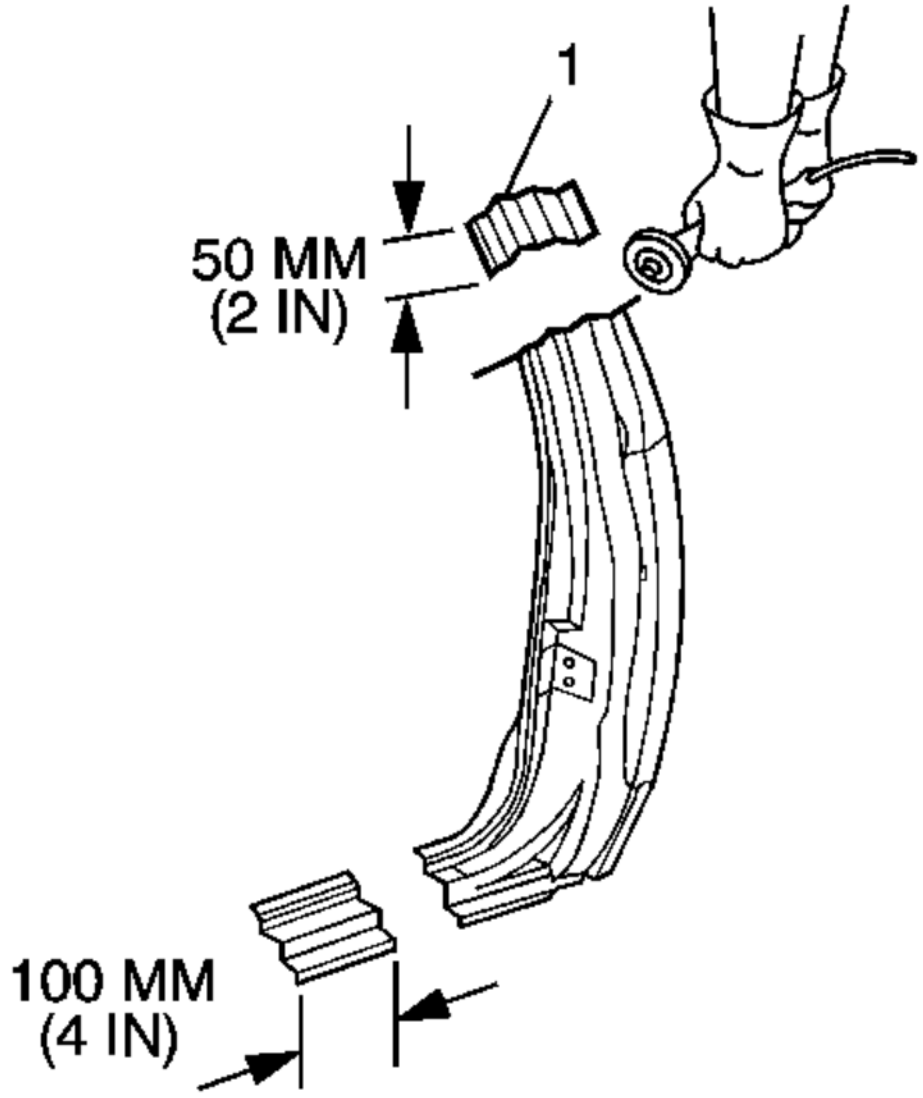


Fig. 103: Trimming Backing Plate To Fit
Courtesy of GENERAL MOTORS CORP.

2. Create a 50 mm (2 in) (1) backing plate from the unused portion of the service part. Trim the backing plate as necessary to fit behind the sectioning joint where there is no reinforcement.

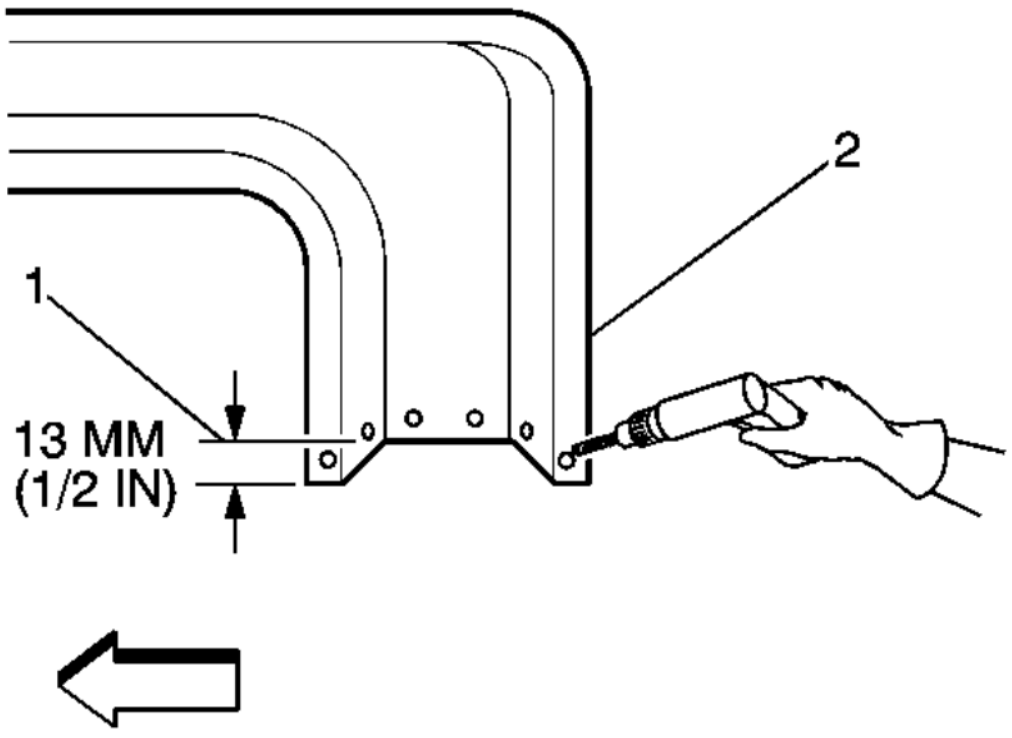


Fig. 104: Drilling Plug Weld Holes
Courtesy of GENERAL MOTORS CORP.

3. Drill 8 mm (5/16 in) plug weld holes along the sectioning cut on the remaining original part (2). Locate these holes approximately 13 mm (1/2 in) from the edge (1) and spaced 40 mm (1 1/2 in) apart.

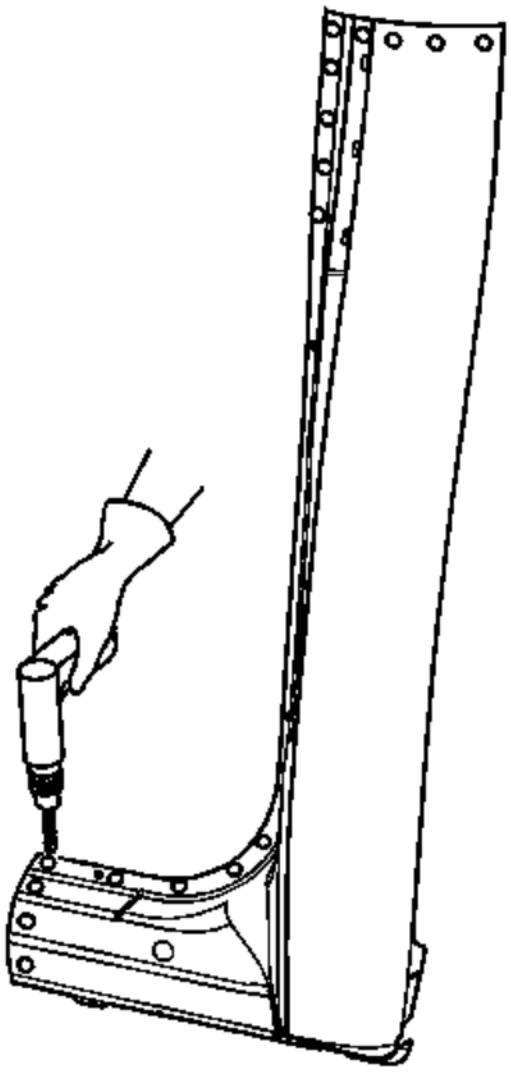


Fig. 105: Drilling Plug Weld Holes
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: If the location of the original plug weld holes cannot be determined, space the plug weld holes every 40 mm (1 1/2 in) apart.

4. Drill 8 mm (5/16 in) plug weld holes in the service part as necessary in the locations noted from the original panel and along the sectioning cut.

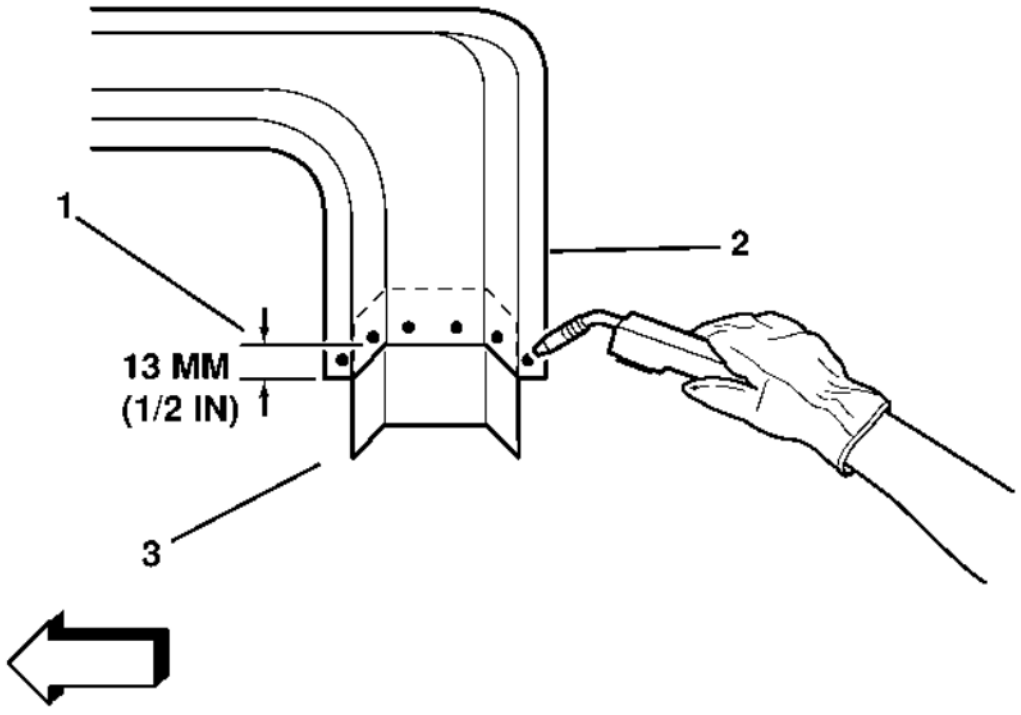


Fig. 106: Plug Welding Backing Plate
Courtesy of GENERAL MOTORS CORP.

5. Prepare all attachment surfaces, as necessary.
6. Apply GM-approved Weld-Thru Coating or equivalent to all mating surfaces. Refer to **Anti-Corrosion Treatment and Repair** .
7. Fit the backing plate (3) halfway into the sectioning joint, clamp and plug weld to the vehicle.

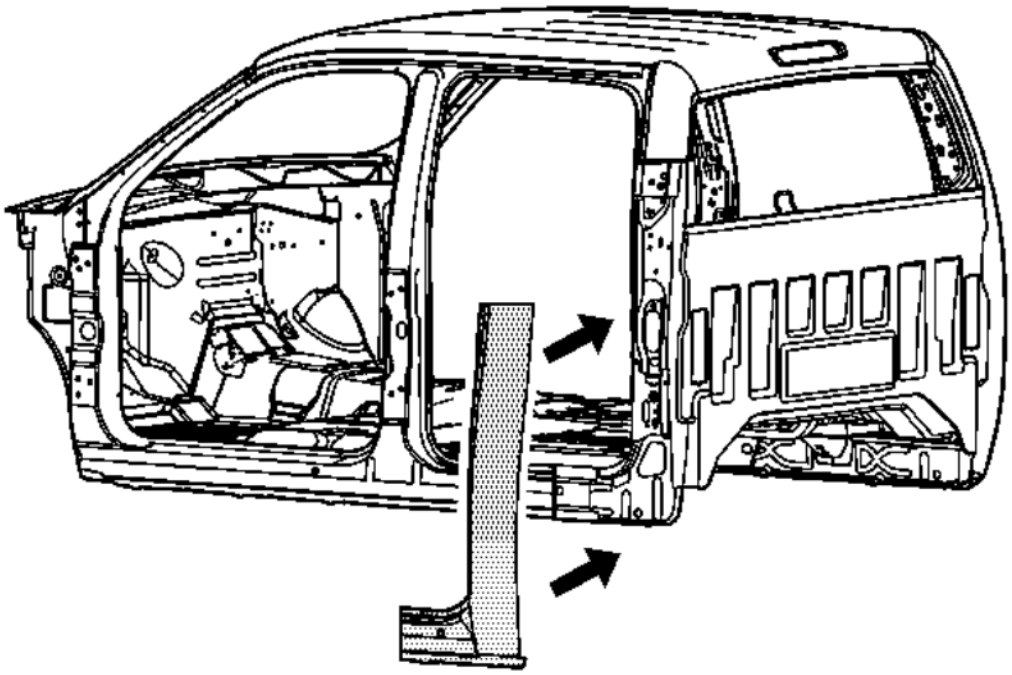


Fig. 107: View Of New Rear Pillar Section
Courtesy of GENERAL MOTORS CORP.

8. Position the rear pillar to the vehicle using 3-dimensional measuring equipment. Clamp in place.

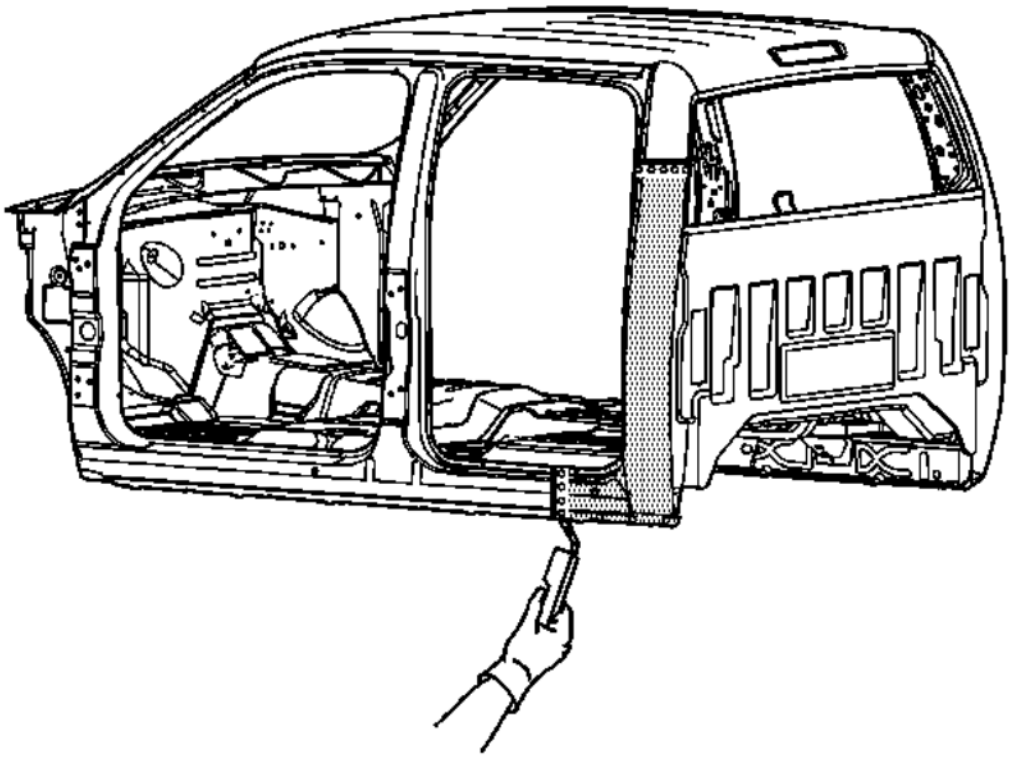


Fig. 108: Plug Welding Seams
Courtesy of GENERAL MOTORS CORP.

9. Plug weld accordingly.

IMPORTANT: To create a solid weld with minimum heat distortion, make 25 mm (1 in) stitch welds along the seam with 25 mm (1 in) gaps between them. Complete the stitch weld.

10. Clean and prepare all welded surfaces.
11. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
12. Paint the repair area. Refer to **Basecoat/Clearcoat Paint Systems** .
13. Install all related panels and components.
14. Connect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .

15. Enable the SIR system. Refer to **SIR Disabling and Enabling** .

PICKUP BOX FRONT END PANEL REPLACEMENT

Removal Procedure

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

1. Remove the pickup box assembly. Refer to **Pickup Box Replacement** .
2. Restore as much damage as possible.
3. Note the location and remove the sealers and anti-corrosion materials from the repair area as necessary. Refer to **Anti-Corrosion Treatment and Repair** .

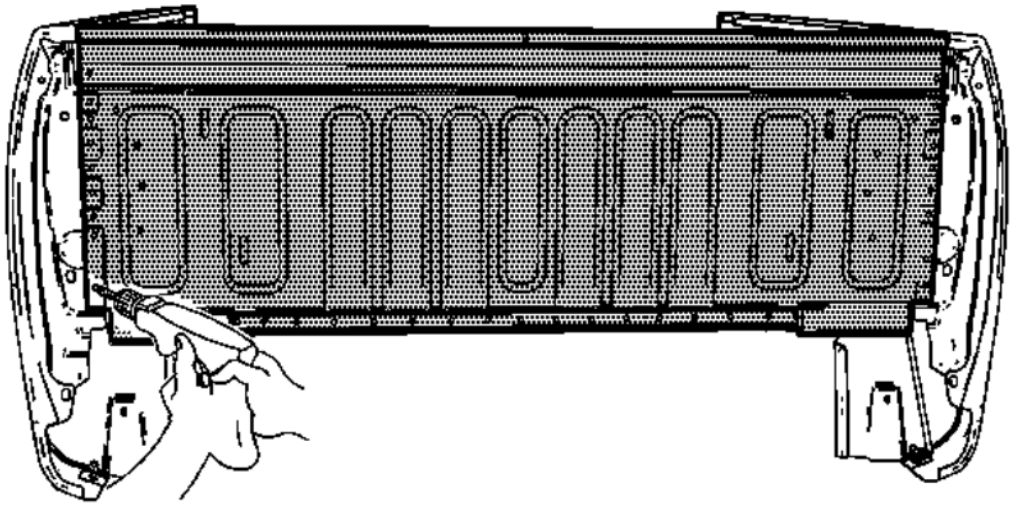


Fig. 109: Drilling Out Pickup Box Front Panel Factory Welds
Courtesy of GENERAL MOTORS CORP.

4. Locate and drill out all factory welds. Note the location of the welds for installation of the service part.
5. Remove the front panel.

Installation Procedure

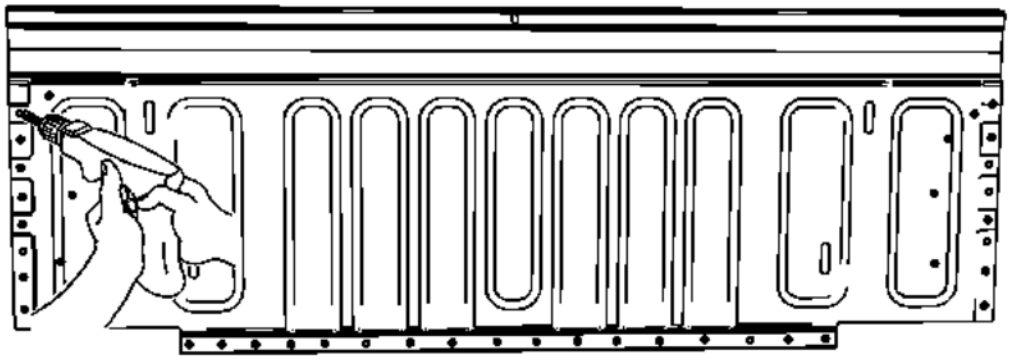


Fig. 110: Drilling Pickup Box Front Panel Plug Weld Holes
Courtesy of GENERAL MOTORS CORP.

1. Drill 8 mm (5/16 in) plug weld holes in the service part as necessary in the locations noted from the original part. Prepare all mating surfaces as necessary.
2. Apply GM-approved Weld-Thru Coating or equivalent to all mating surfaces. Refer to **Anti-Corrosion Treatment and Repair** .
3. Align the service part to the pickup box.

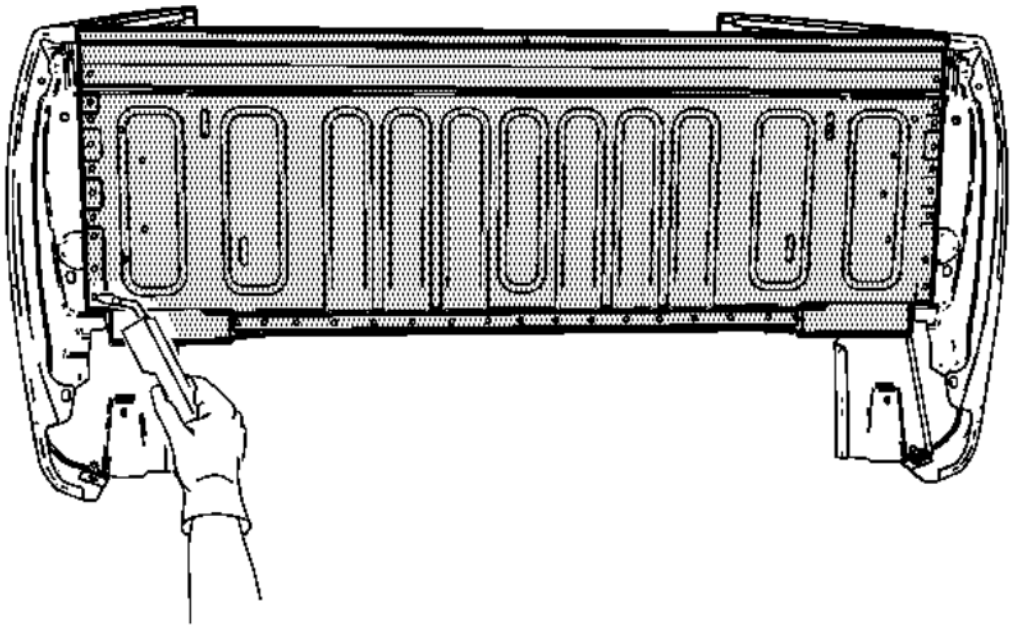


Fig. 111: Plug Welding Pickup Box Front Panel
Courtesy of GENERAL MOTORS CORP.

4. Plug weld into position.
5. Clean and prepare all welded surfaces.
6. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
7. Paint and repair the area. Refer to **Basecoat/Clearcoat Paint Systems** .
8. Install the pickup box assembly. Refer to **Pickup Box Replacement** .

PICKUP BOX REPLACEMENT - SIDE

Description

This procedure shows illustrations for the 6.6L box. The 5.8, 8.0, and dually pickup boxes are similar. This procedure may be used for all pickup box sizes.

Removal Procedure

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

1. Remove the box assembly. Refer to **Pickup Box Replacement** .
2. Remove all related panels and components.
3. Repair as much of the damage as possible, according to factory specifications.
4. Note the location and remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .

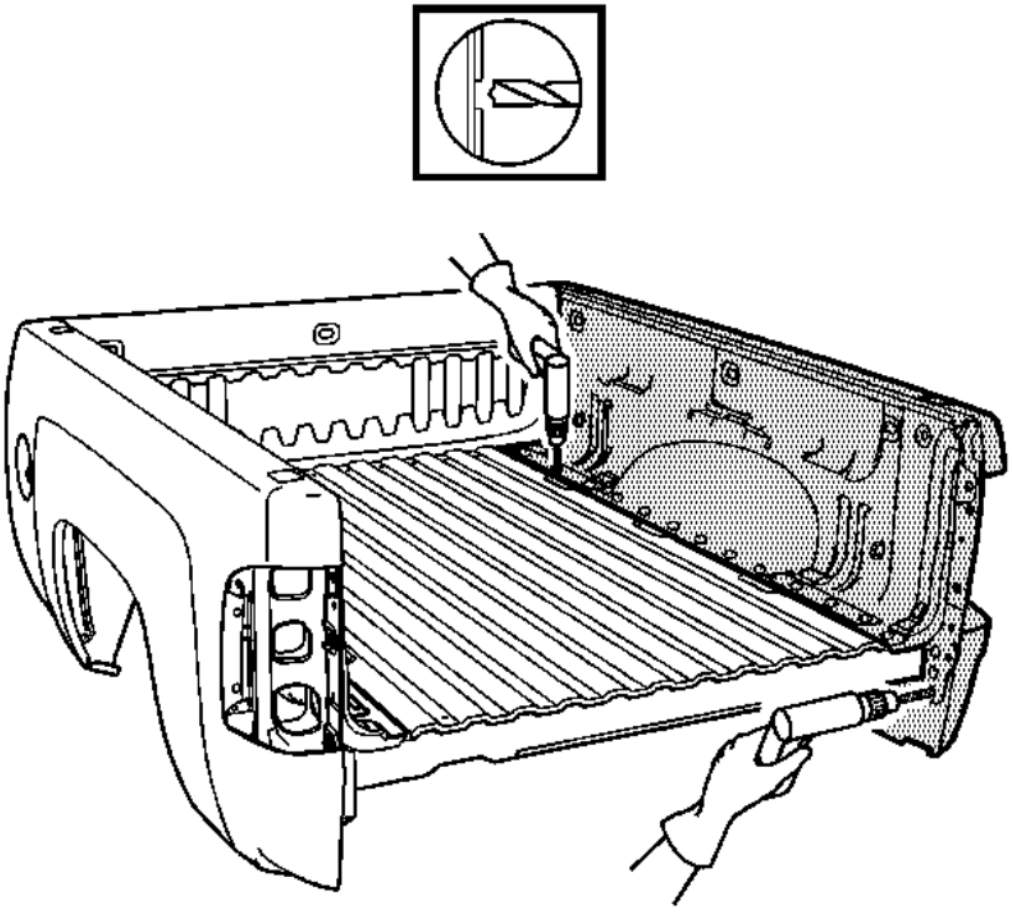


Fig. 112: Drilling Out Spot Welds
Courtesy of GENERAL MOTORS CORP.

5. Locate and drill out spot welds on the inside of the panel.

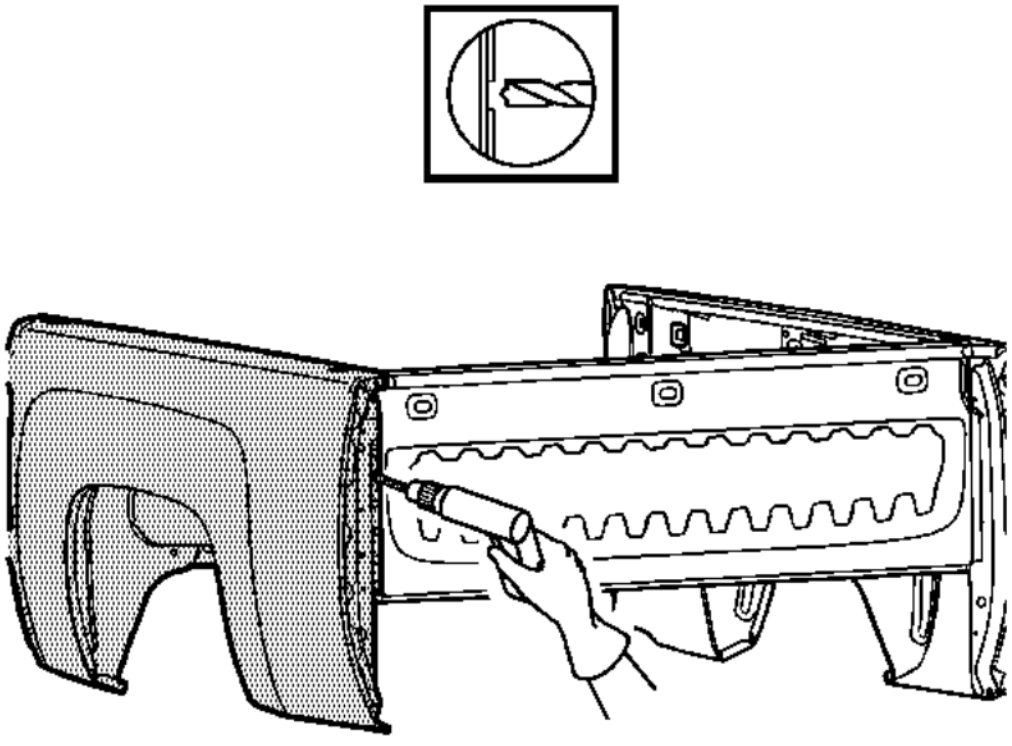


Fig. 113: Drilling Out Spot Welds On Front Bed Panel
Courtesy of GENERAL MOTORS CORP.

6. Locate and drill out the spot welds along the front bed panel.

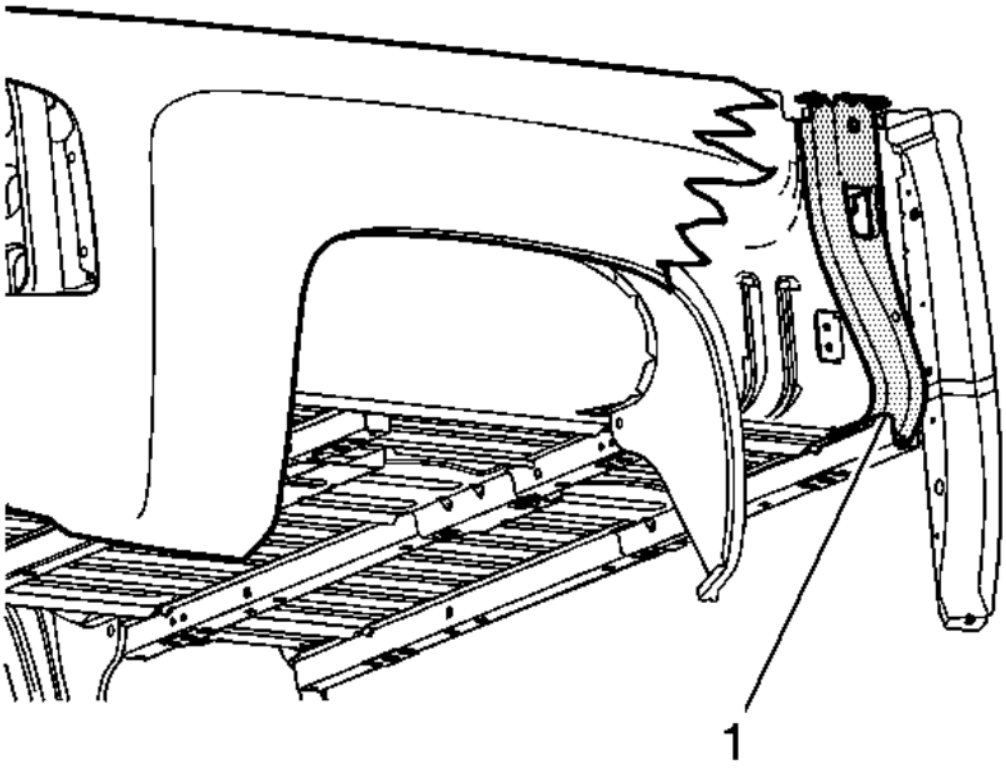


Fig. 114: View Of Cross Sill
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Structural adhesive is used to bond the front stake pocket reinforcement to the mating cross sill.

7. Use a heat gun or a chisel to separate the stake pocket reinforcement from the cross sill (1).

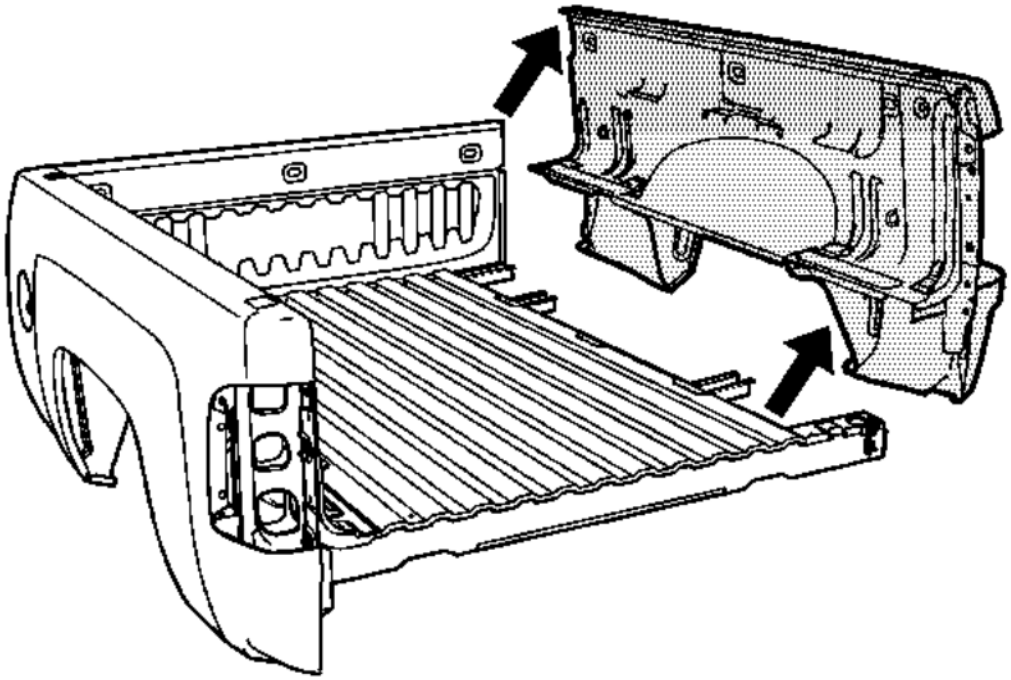


Fig. 115: View Of Damaged Side Panel
Courtesy of GENERAL MOTORS CORP.

8. Remove the side panel.

Installation Procedure

1. Drill 8 mm (5/16 in) plug weld holes in the service part as noted.
2. Prepare all mating surfaces as necessary.
3. Apply GM-approved Weld-Thru Coating or equivalent to all mating surfaces. Refer to **Anti-Corrosion Treatment and Repair** .

IMPORTANT: Before you begin the repair, refer to Metal Panel Bonding for proper adhesive preparation and general information.

4. Grind the surface of the pickup box cross sill and the front stake pocket reinforcement mating flanges to bare steel.

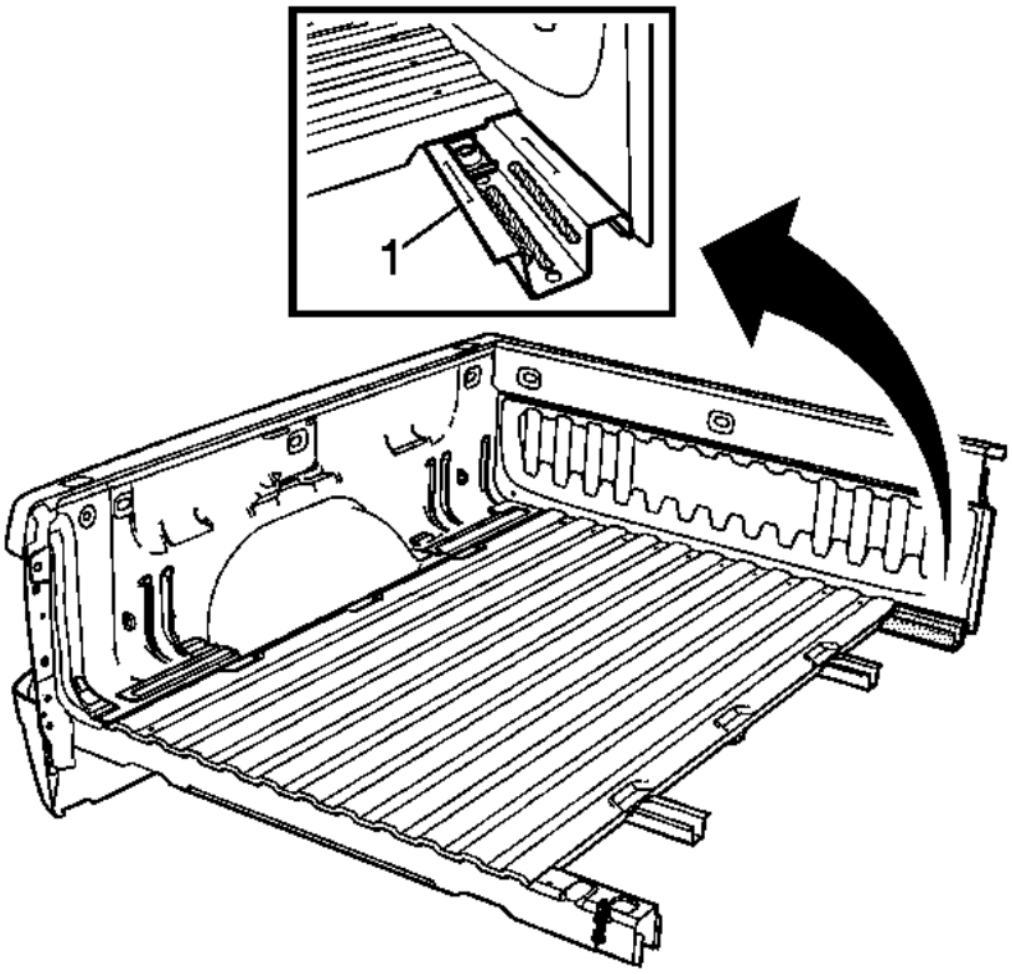


Fig. 116: Applying Metal Panel Bonding Adhesive
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not allow the adhesive to cure prior to installing the service side panel.

5. Apply a 3-6 mm (1/8-1/4 in) bead of metal panel bonding adhesive to both of the mating surfaces.
6. using a small acid brush, spread a coat of adhesive to both of the mating surfaces. Cover all of the bare metal to ensure corrosion protection.
7. Apply three 9-13 mm (3/8-1/2 in) beads of metal panel bonding adhesive as shown.

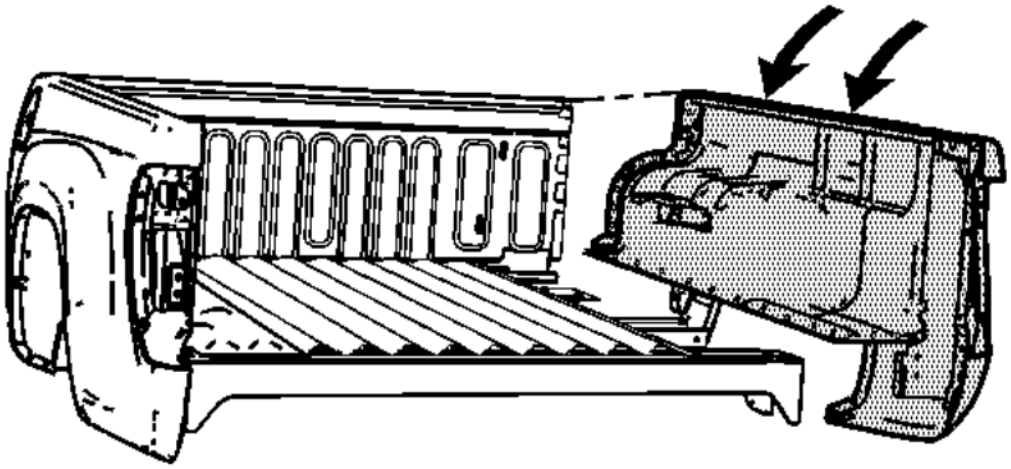


Fig. 117: View Of Side Panel
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do NOT pull the panels apart after you have joined the panels together. Slide the panels against each other to realign the panels.

8. Position the service side panel to the bed assembly.

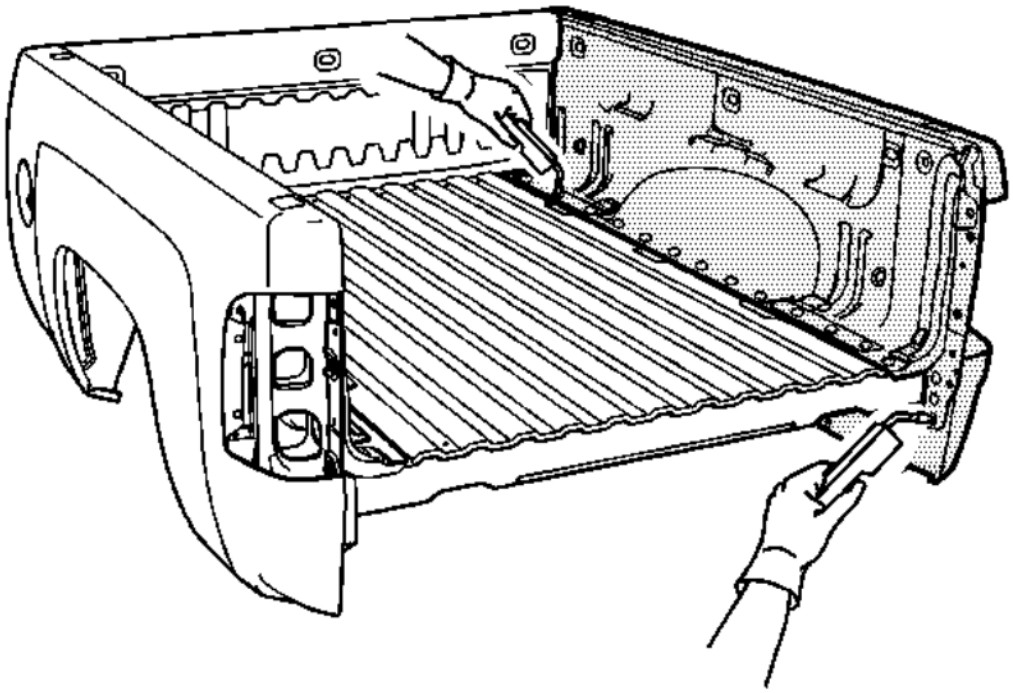


Fig. 118: Plug Welding New Side Panel
Courtesy of GENERAL MOTORS CORP.

9. Plug weld as necessary
10. Clean and prepare all welded surfaces.
11. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
12. Paint and repair the area. Refer to **Basecoat/Clearcoat Paint Systems** .
13. Install all related panels and components.
14. Install the box assembly. Refer to **Pickup Box Replacement** .

PICKUP BOX OUTER SIDE PANEL REPLACEMENT (BOND-ON)

Removal Procedure

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

IMPORTANT: This adhesive bonding procedure represents one manufacturer's installation application. Other manufacturers' procedures may vary, including MIG welding in some areas of the repair. Always follow the system manufacturer's instructions for application, handling, and curing.

IMPORTANT: Before you begin the repair, refer to Metal Panel Bonding for proper adhesive preparations and general information.

1. Remove the box assembly. Refer to **Pickup Box Replacement** .
2. Remove all related panels and components.
3. Repair as much or the damage as possible, according to factory specifications.
4. Note the location and remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .

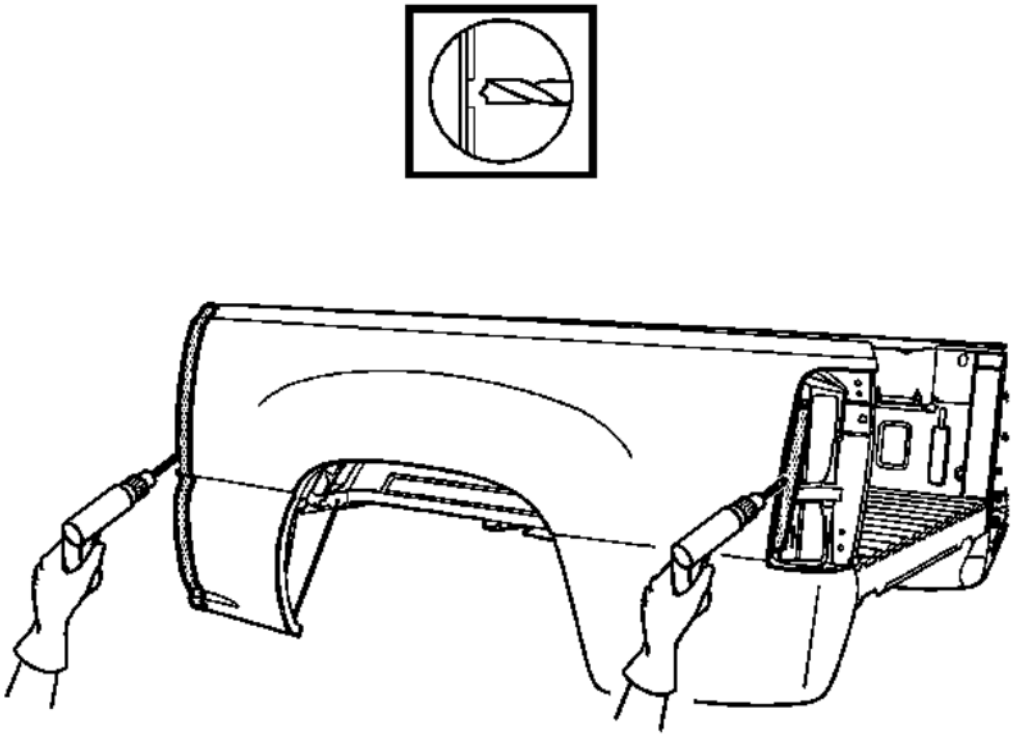


Fig. 119: Identifying Spot Welds
Courtesy of GENERAL MOTORS CORP.

5. Locate and drill out the spot welds attaching the front panel, the wheelhouse, and the tail lamp pocket

area.

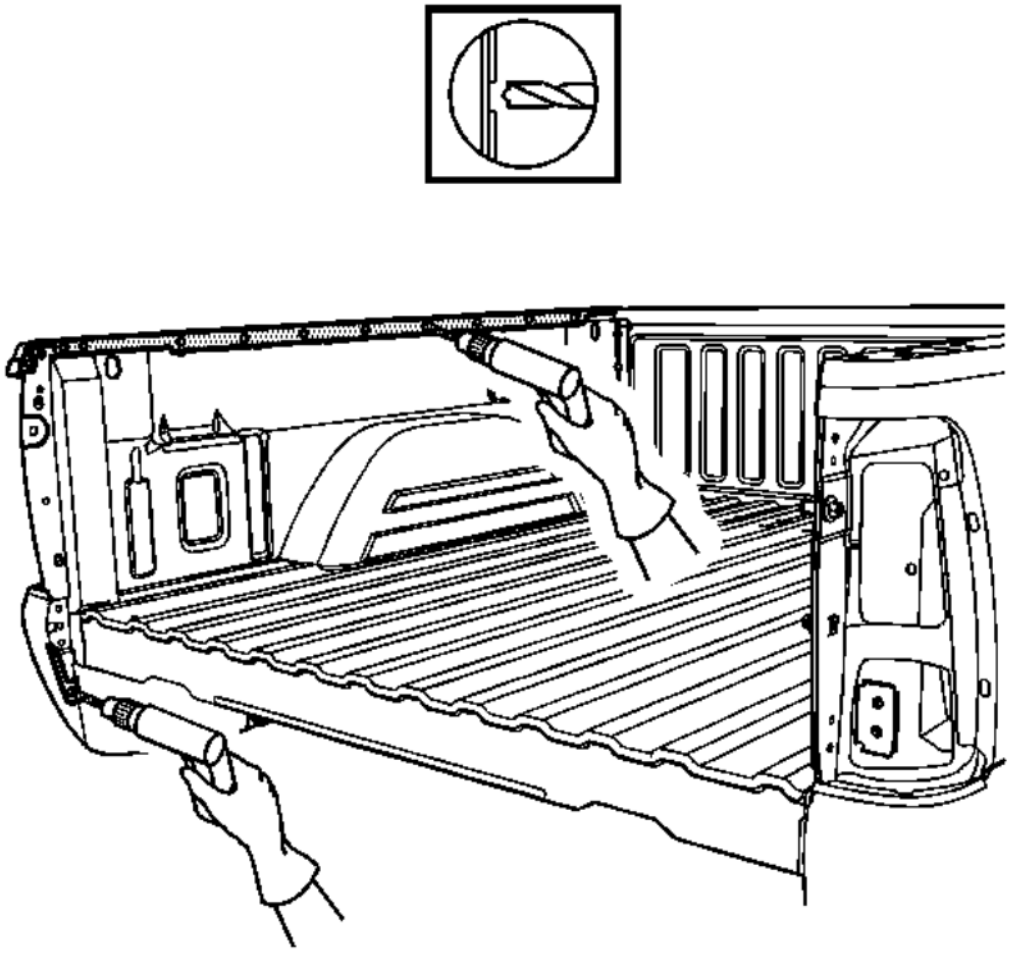


Fig. 120: View Of Upper Rail Spot Welds
Courtesy of GENERAL MOTORS CORP.

6. Locate and drill out spot welds on the upper rail and the rear sill area.

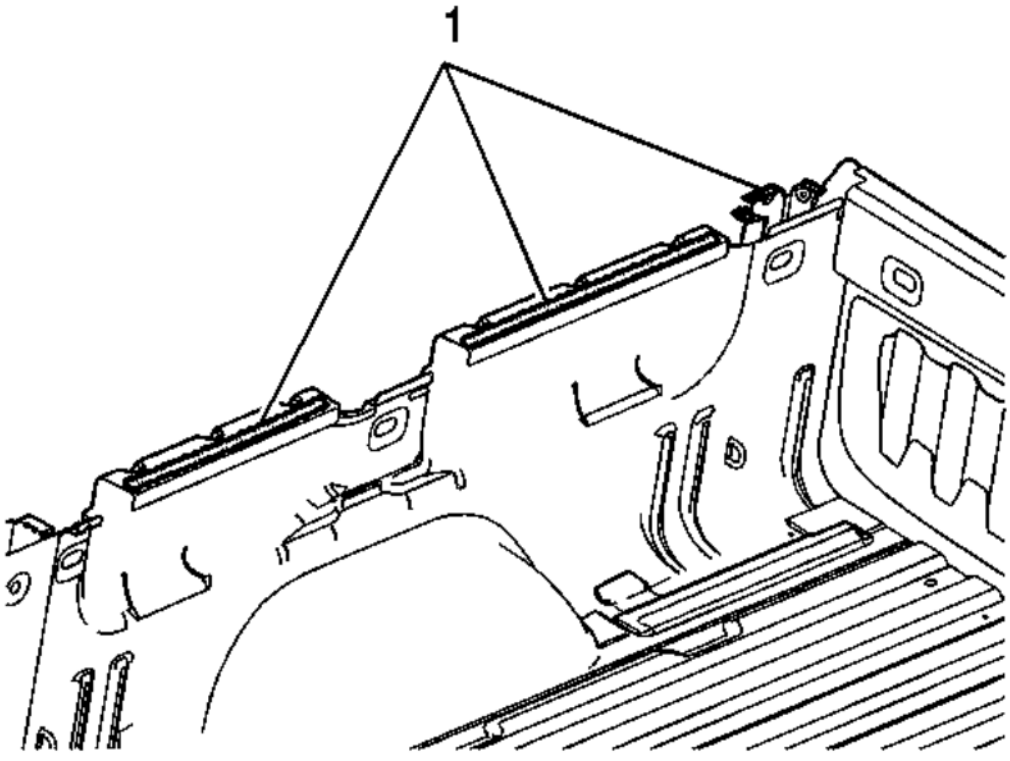


Fig. 121: View Of Inner Panel
Courtesy of GENERAL MOTORS CORP.

7. Structural adhesive is present between the upper inner panel (1) and the outer panel. If necessary, use a chisel to separate the outer panel from the inner panel.

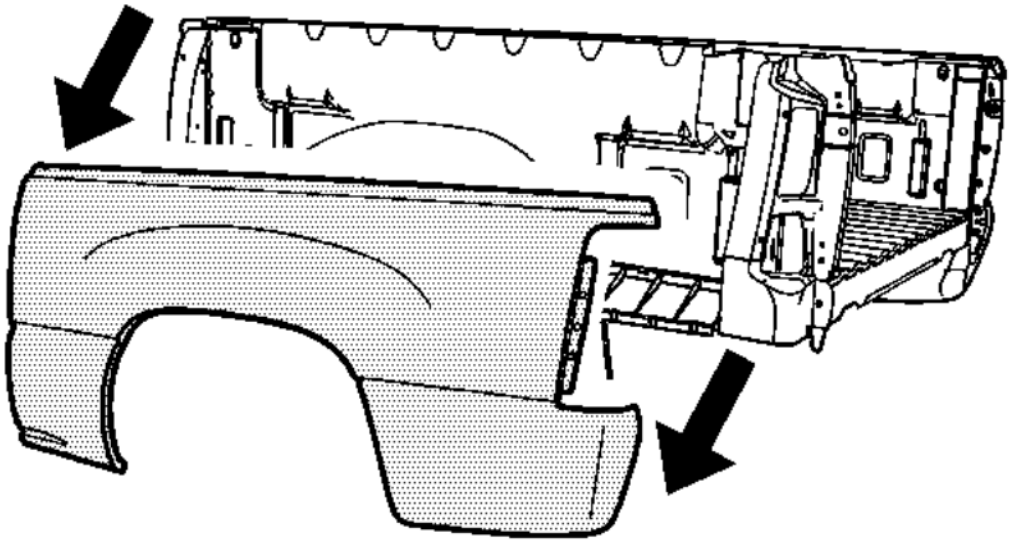


Fig. 122: View Of Side Panel
Courtesy of GENERAL MOTORS CORP.

8. Remove the side panel.

Installation Procedure

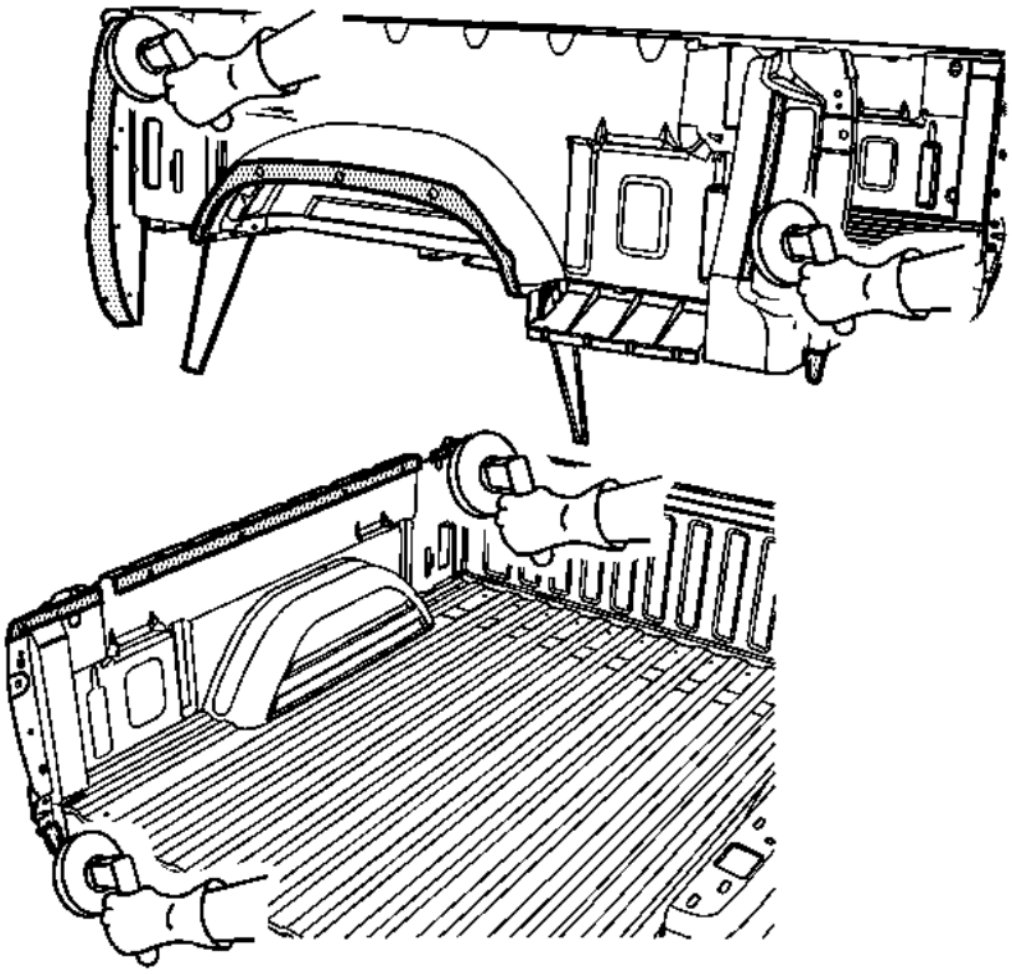


Fig. 123: Grinding Assembly Mating Flanges To Bare Steel
Courtesy of GENERAL MOTORS CORP.

1. Grind the surface of the bed assembly mating flanges to bare steel. Do not damage the corners or thin the metal during the grinding process.

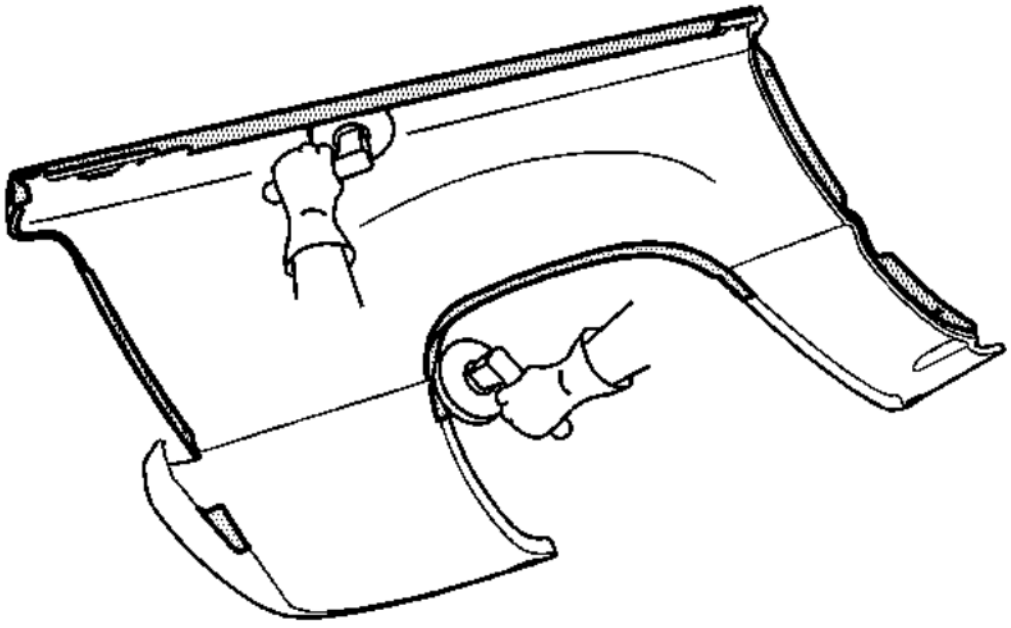


Fig. 124: Identifying Mating Flanges Of The Service Side Panel
Courtesy of GENERAL MOTORS CORP.

2. Grind the mating flanges of the service side panel to remove the E-coating. Do not damage the corners or thin the metal during the grinding operation.
3. Clean the mating surfaces.

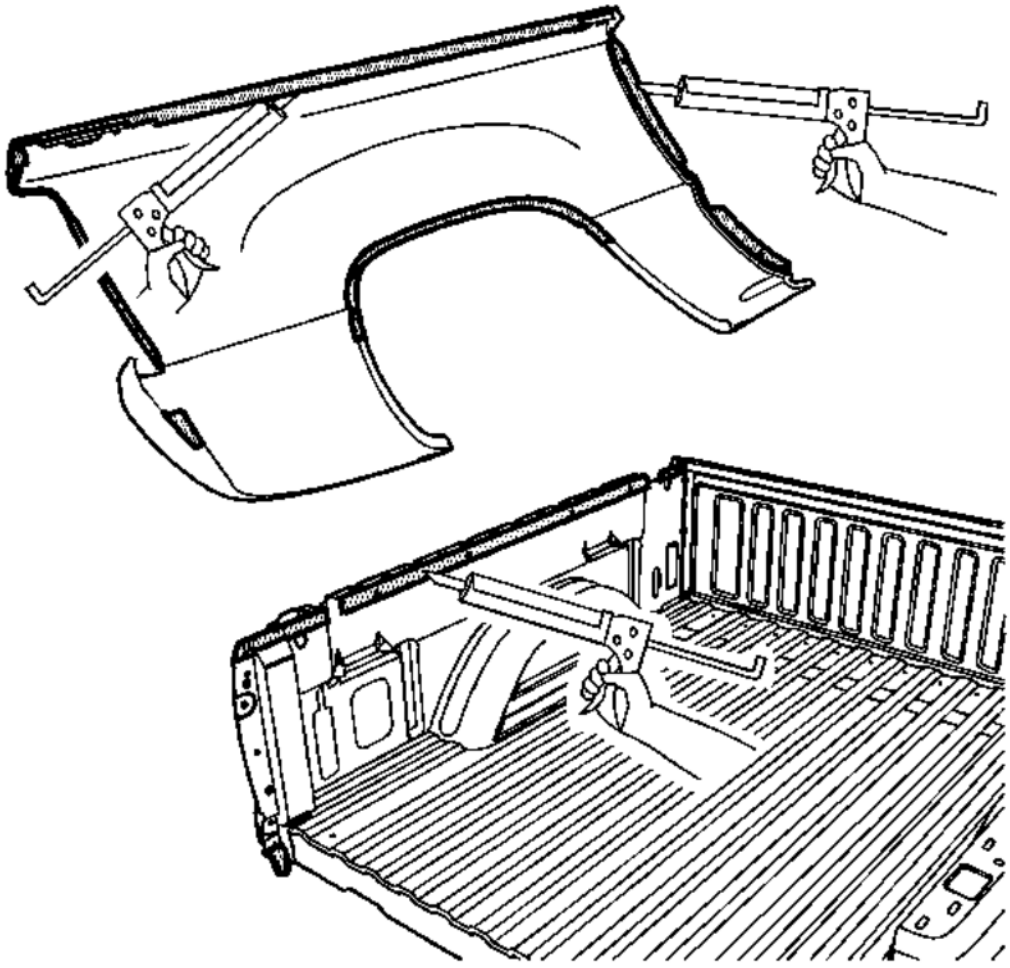


Fig. 125: Applying Metal Panel Bonding Adhesive To Mating Surfaces
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not allow the adhesive to cure prior to installing the service side panel.

4. Apply a 3-6 mm (1/8-1/4 in) bead of metal panel bonding adhesive to both of the mating surfaces.

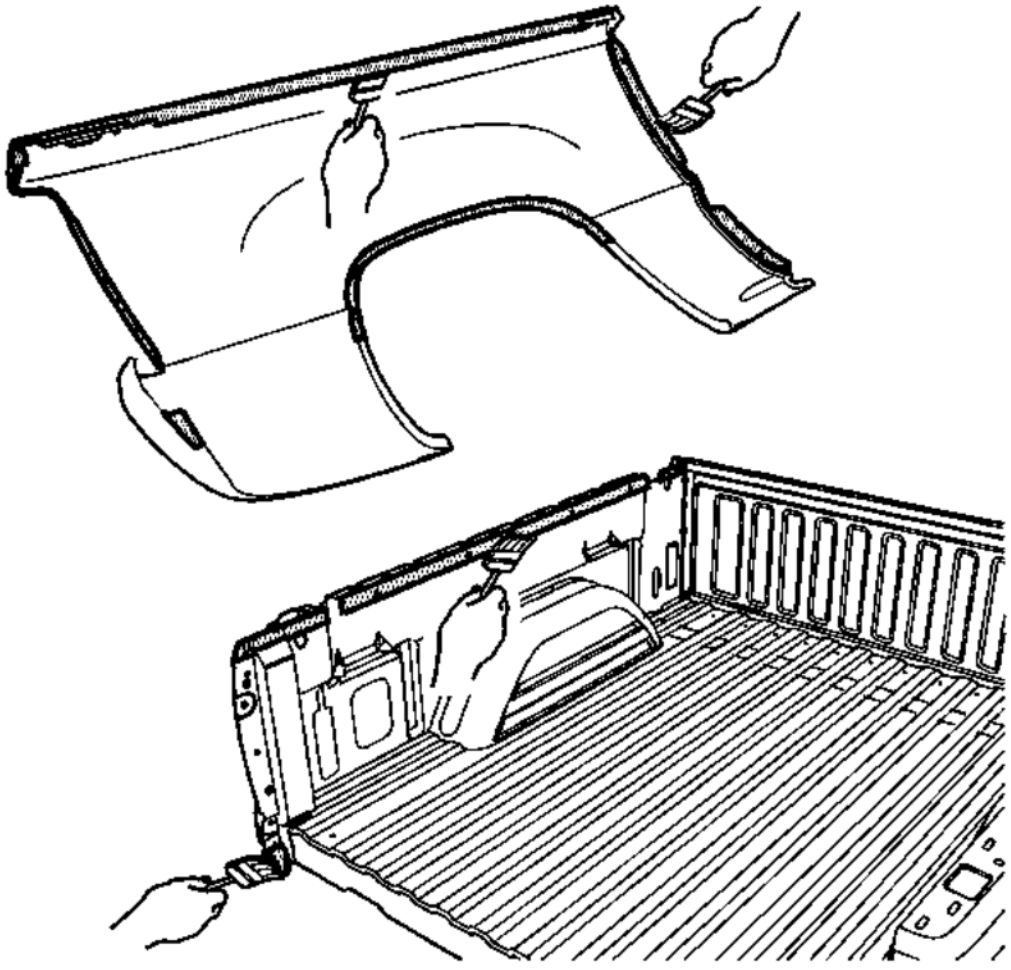


Fig. 126: Applying Adhesive To Mating Surfaces With Brush
Courtesy of GENERAL MOTORS CORP.

5. Using a small acid brush, spread a coat of adhesive to both of the mating surfaces. Cover all of the bare metal to ensure corrosion protection.

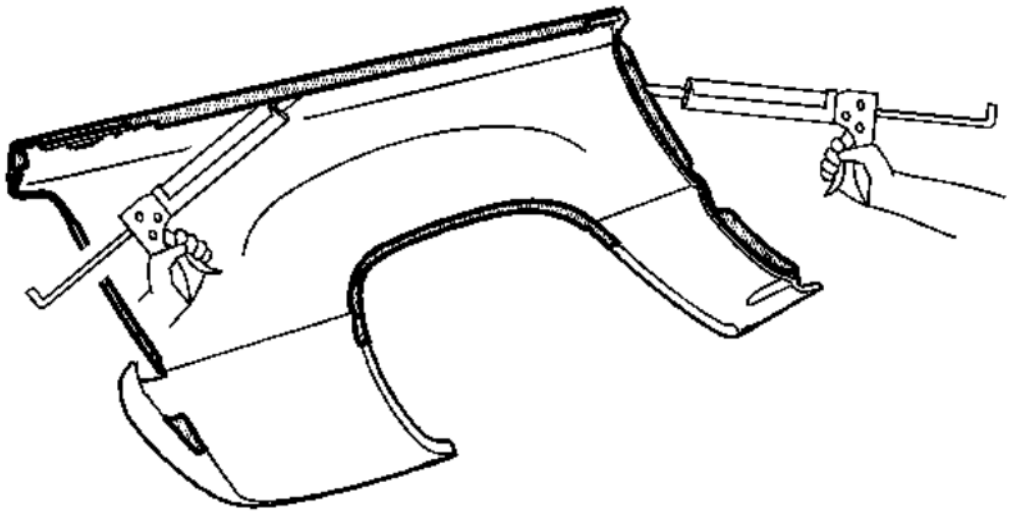


Fig. 127: Applying Metal Panel Bonding Adhesive To Mating Surfaces
Courtesy of GENERAL MOTORS CORP.

6. Apply a 9-13 mm (3/8-1/2 in) bead of metal panel bonding adhesive to the mating surface of the service side panel.

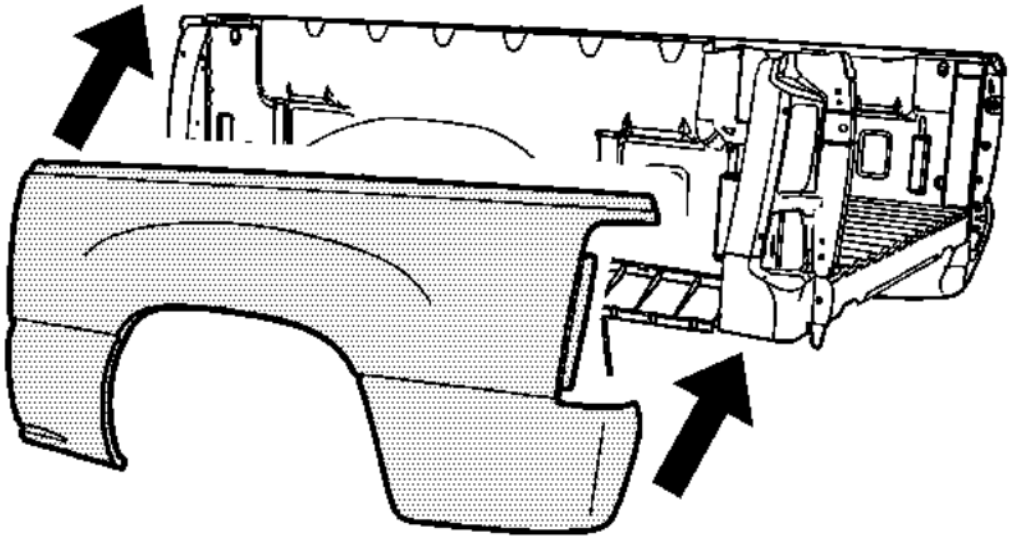


Fig. 128: Identifying Service Side Panel
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do NOT pull the panels apart after you have joined the panels together. Slide the panels against each other to realign the panels.

7. Position the service side panel to the bed assembly.

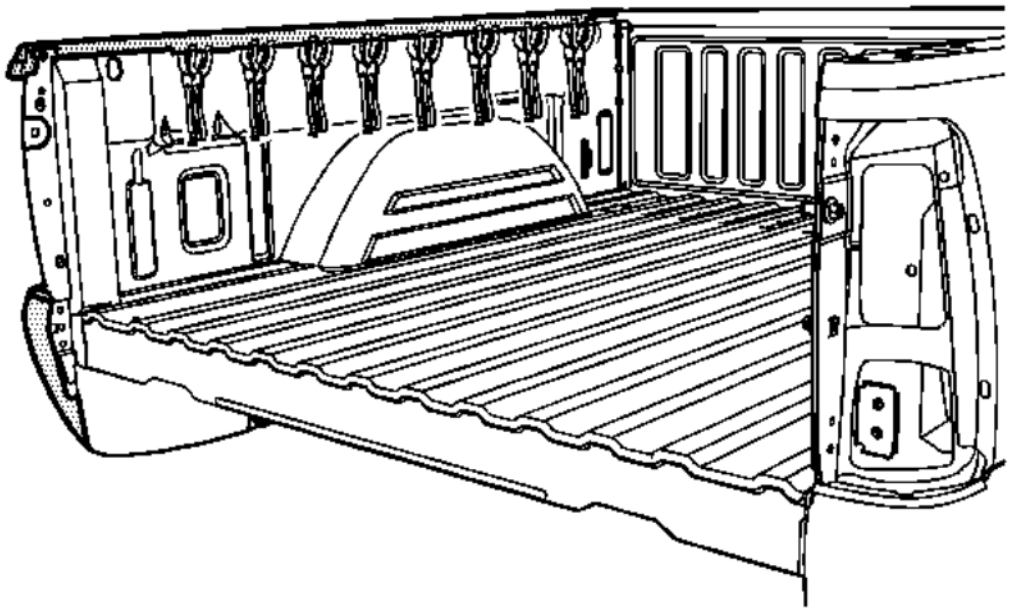


Fig. 129: Identifying Service Side Panel
Courtesy of GENERAL MOTORS CORP.

8. Clamp the service side panel into position.
9. Using lacquer thinner remove the excess adhesive from the bed side panel area.
10. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
11. Paint the repair area. Refer to **Basecoat/Clearcoat Paint Systems** .
12. Install all related panels and components.
13. Install the box assembly. Refer to **Pickup Box Replacement** .

PICKUP BOX OUTER SIDE PANEL REPLACEMENT (WELD-ON)

Removal Procedure

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

IMPORTANT: Before you begin the repair, refer to Metal Panel Bonding for proper adhesive preparations and general information.

1. Remove the box assembly. Refer to **Pickup Box Replacement** .
2. Remove all related panels and components.
3. Repair as much of the damage as possible, according to factory specifications.
4. Note the location and remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
5. Note the number and location of all spot welds to be drilled out for installation of the service part.

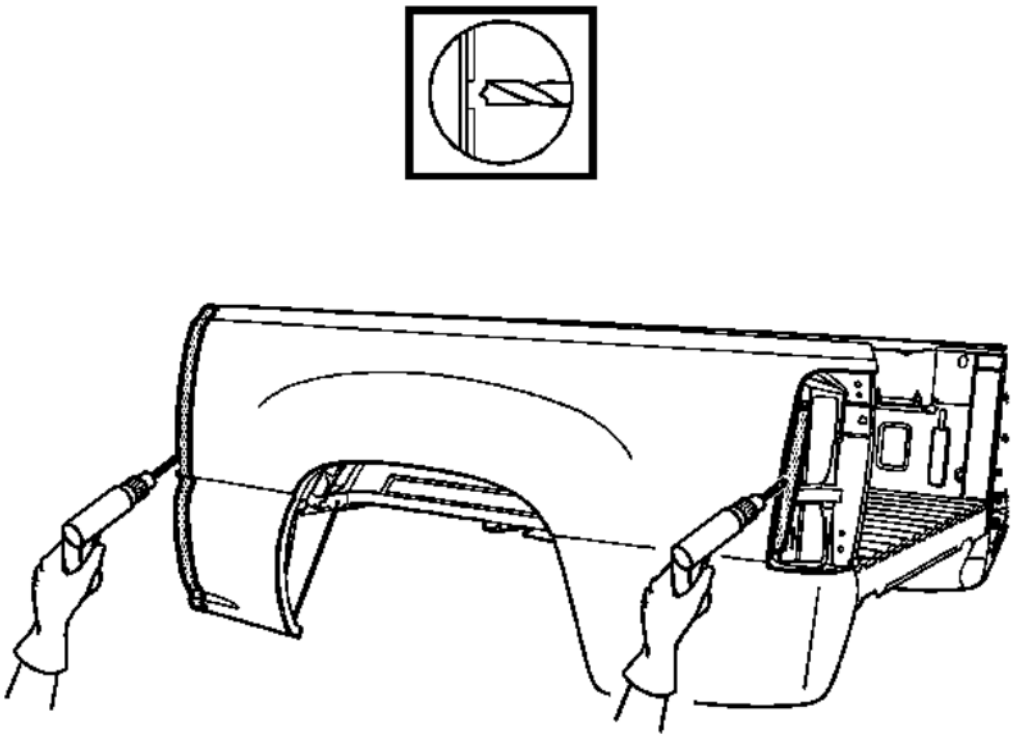


Fig. 130: Identifying Spot Welds
Courtesy of GENERAL MOTORS CORP.

6. Locate and drill out the spot welds attaching the front panel wheelhouse and the tail lamp pocket area.
7. Locate and drill out the spot welds attaching the front panel, the wheelhouse and the tail lamp pocket area.

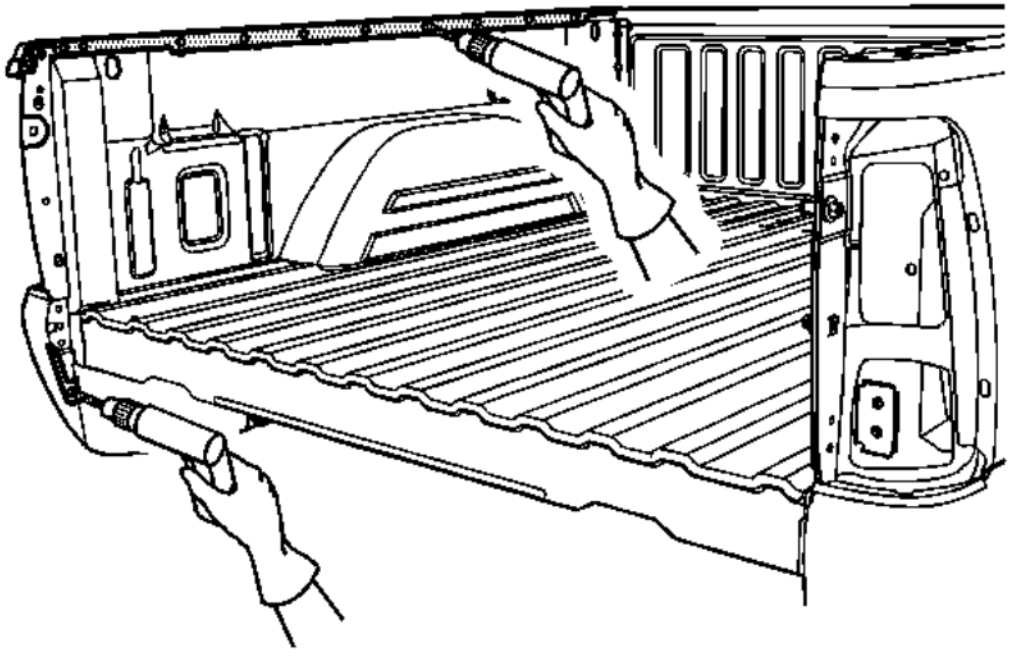


Fig. 131: View Of Upper Rail Spot Welds
Courtesy of GENERAL MOTORS CORP.

8. Locate and drill out the spot welds along the upper rail and the rear sill area.

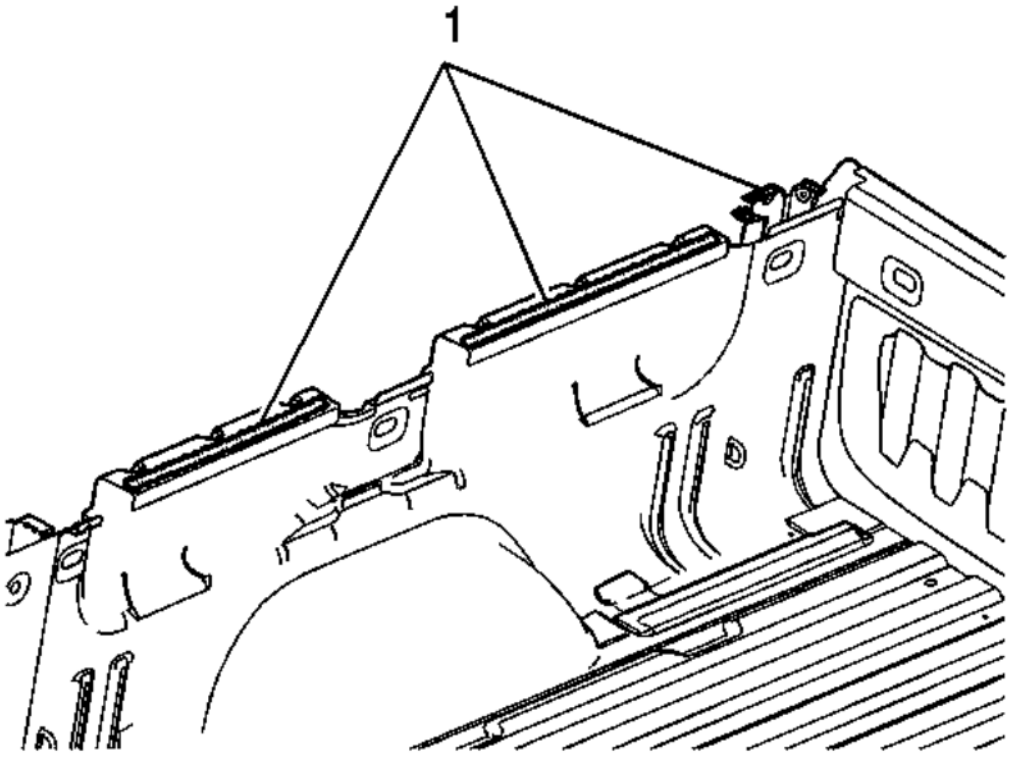


Fig. 132: View Of Inner Panel
Courtesy of GENERAL MOTORS CORP.

9. Structural adhesive is present between the upper inner panel (1) and the outer panel. If necessary, use a chisel to separate the outer panel from the inner panel.

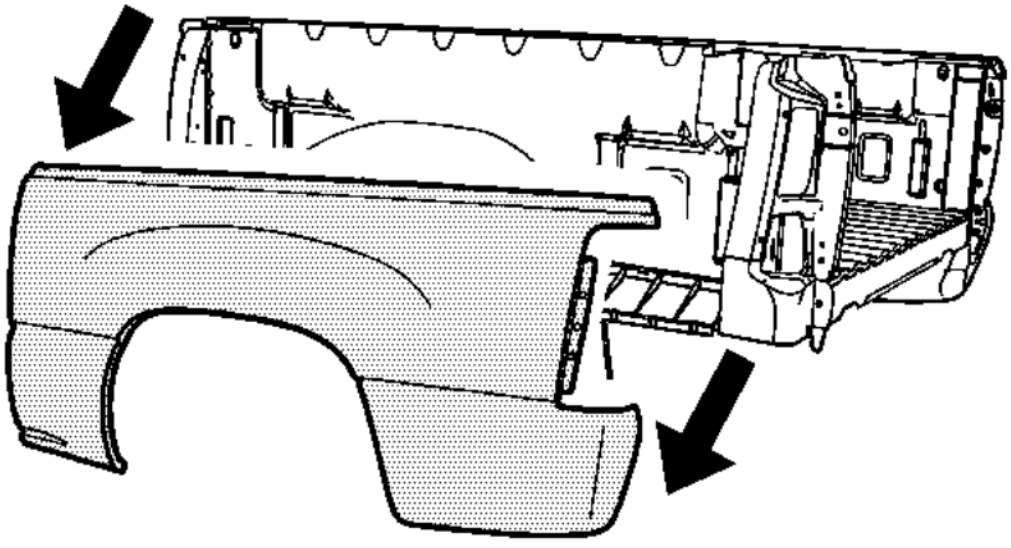


Fig. 133: View Of Side Panel
Courtesy of GENERAL MOTORS CORP.

10. Remove the side panel.

Installation Procedure

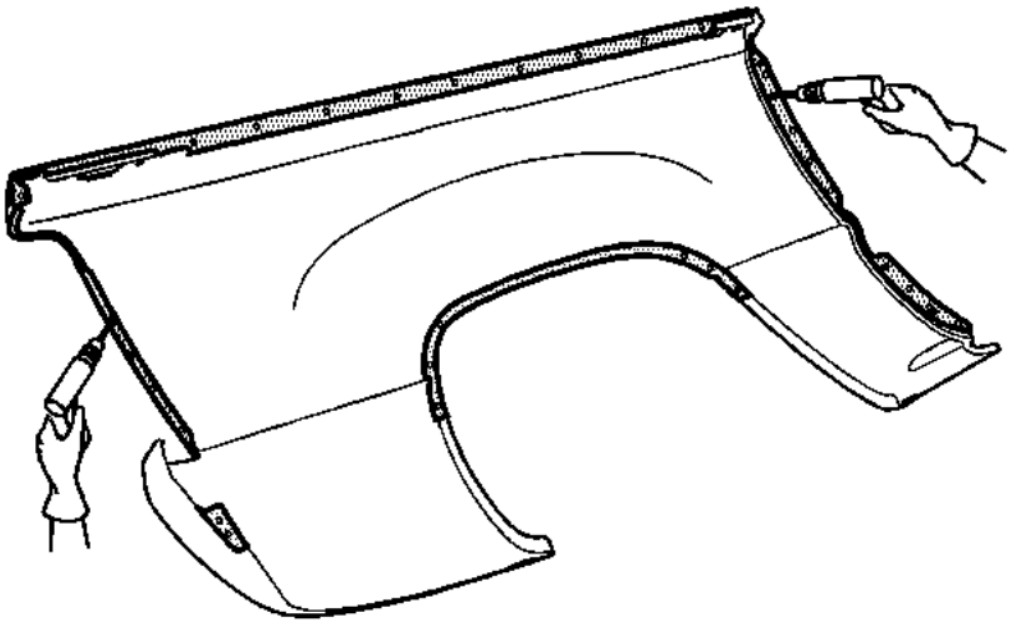


Fig. 134: Drilling Plug Weld Holes
Courtesy of GENERAL MOTORS CORP.

1. Drill 8-mm (5/16-in) plug weld holes in the service part as noted.
2. Prepare all mating surfaces as necessary.
3. Apply Weld-Thru Coating to all mating surfaces.
4. Apply a 9 to 13-mm (3/8 to 1/2-in) bead of metal panel bonding adhesive to the mating surface of the box inner panel.

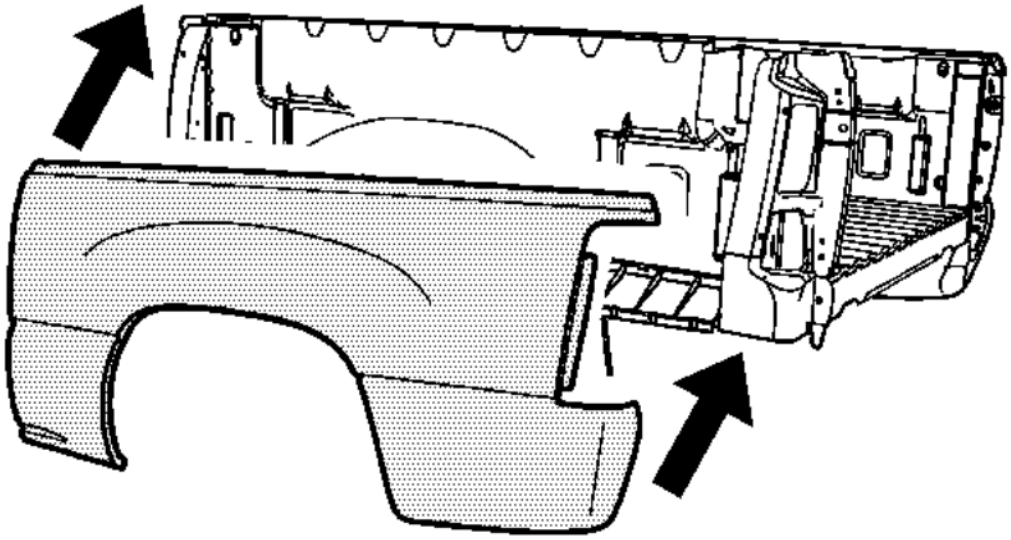


Fig. 135: Identifying Service Side Panel
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not pull the panels apart after the panels have been joined together. Slide the panels against each other to align the panels.

5. Position the service part onto the bed assembly.

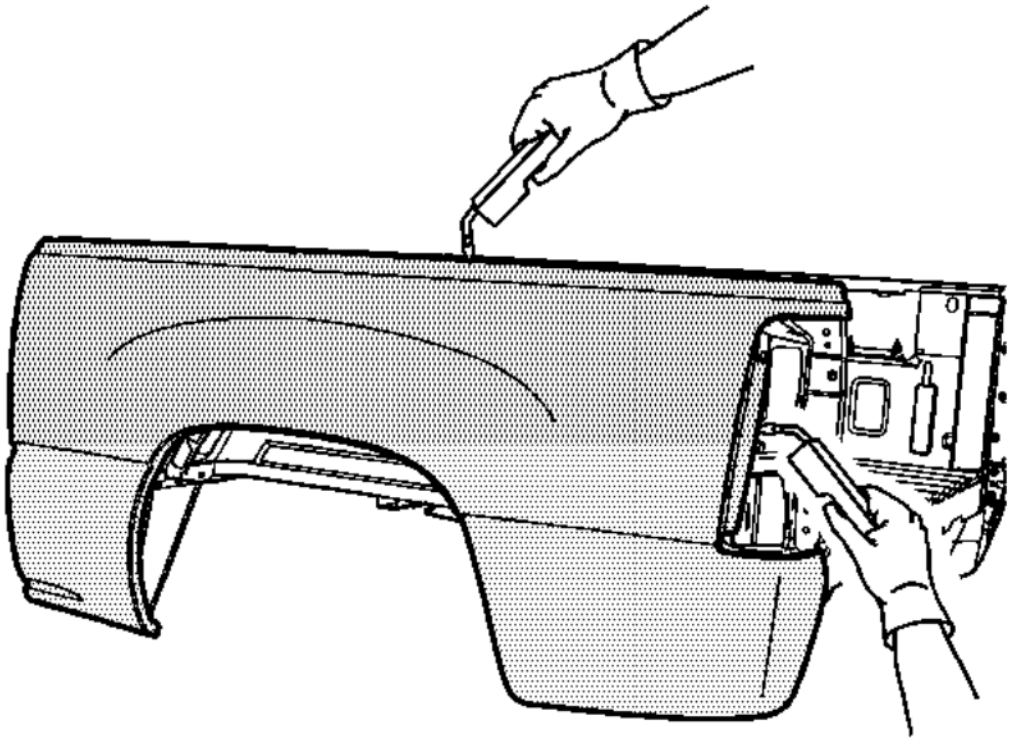


Fig. 136: Identifying Repair Area
Courtesy of GENERAL MOTORS CORP.

6. Plug weld as necessary
7. Clean and prepare all welded surfaces.
8. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
9. Paint and repair the area. Refer to **Basecoat/Clearcoat Paint Systems** .
10. Install all related panels and components.
11. Install the box assembly. Refer to **Pickup Box Replacement** .

PICKUP BOX TIE DOWN LOOP REPLACEMENT

Removal Procedure

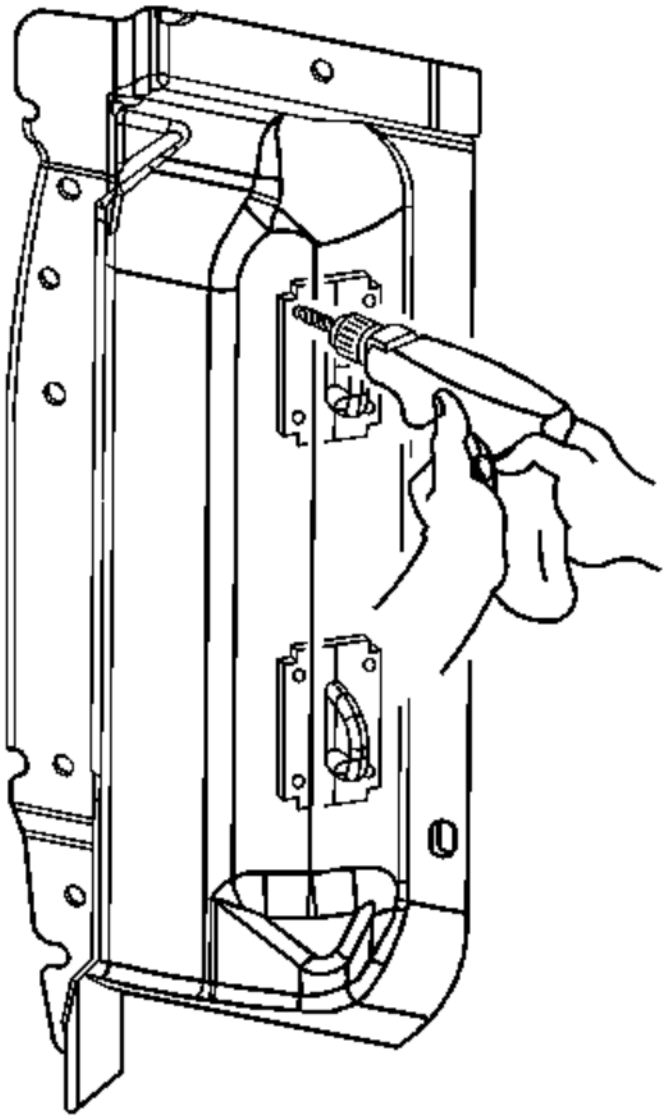


Fig. 137: Drilling Out Tie Down Loop Spot Welds
Courtesy of GENERAL MOTORS CORP.

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

1. Locate and drill out the spot welds.

2. Remove the tie down loop.

Installation Procedure

1. Prepare all mating surfaces as necessary.
2. Apply GM-approved Weld-Thru coating or equivalent to all mating surfaces. Refer to **Anti-Corrosion Treatment and Repair** .

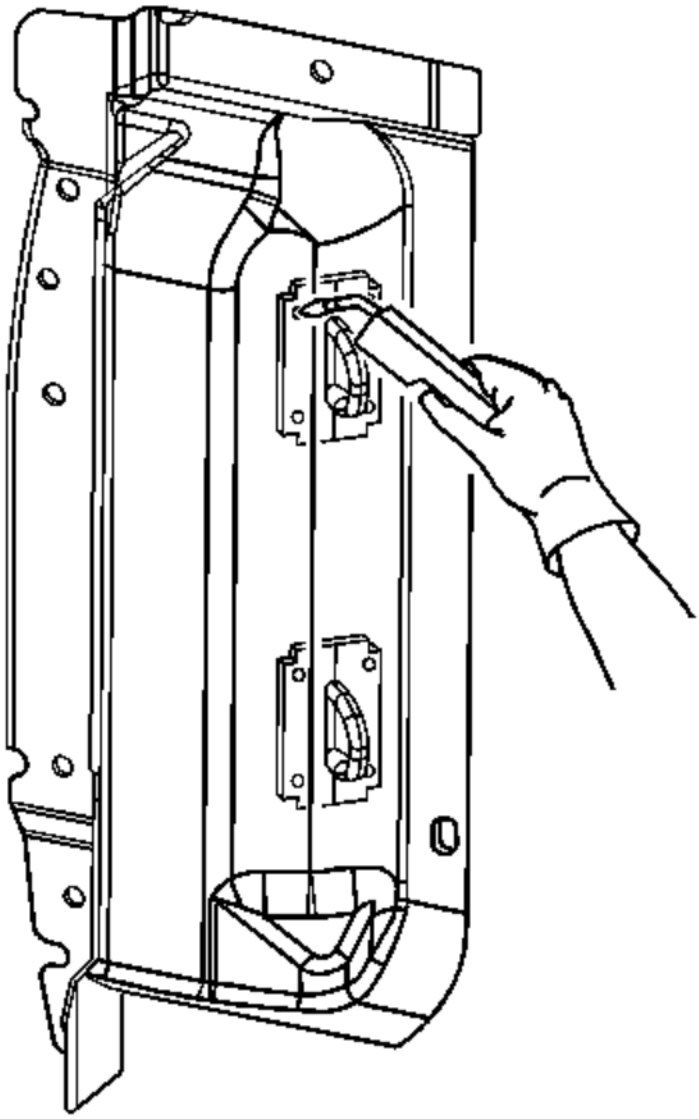


Fig. 138: Plug Welding Tie Down Loop
Courtesy of GENERAL MOTORS CORP.

3. Position the tie down loop.
4. Plug weld accordingly.
5. Clean and prepare all welded surfaces.
6. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to **Anti-Corrosion**

Treatment and Repair .

7. Paint and repair the area. Refer to **Basecoat/Clearcoat Paint Systems** .

RESISTANCE SPOT WELDED FULL PANEL REPLACEMENT

IMPORTANT: Use this procedure for all panels that are replaced at the factory seams, unless a specific procedure exists in the Collision Repair section of this vehicle's service information.

Removal Procedure

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

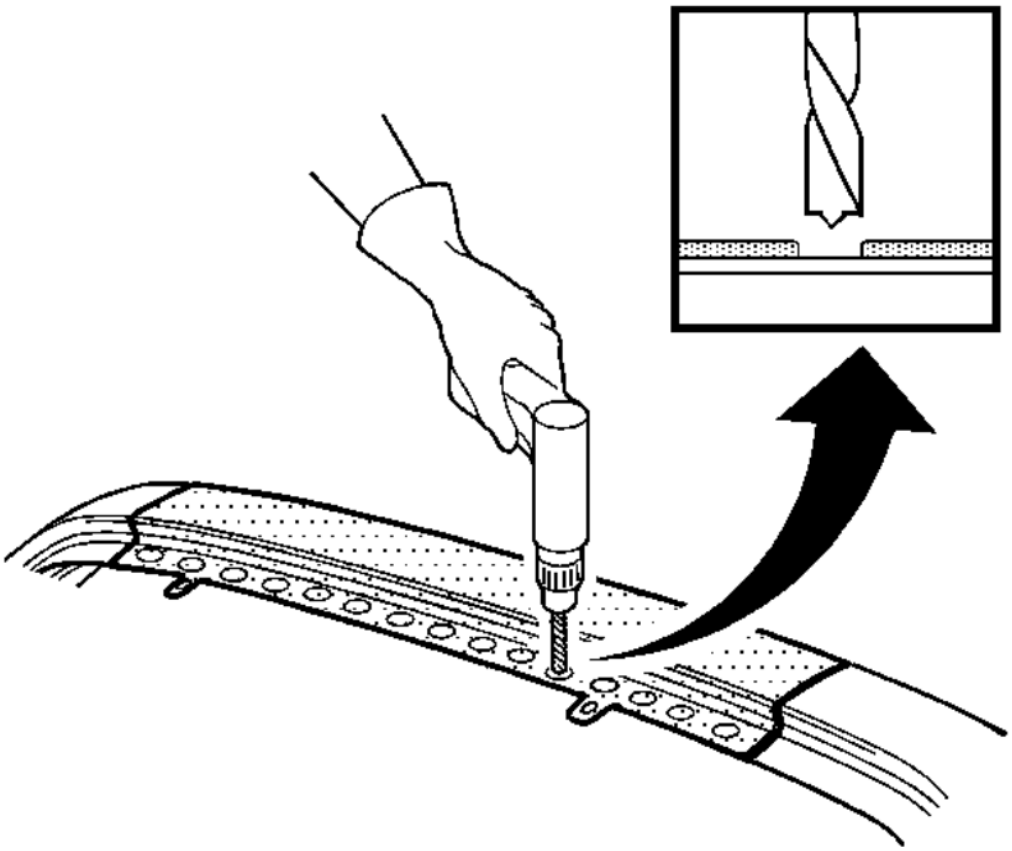


Fig. 139: Drilling Out Factory Welds

Courtesy of GENERAL MOTORS CORP.

1. Disable the SIR system. Refer to **SIR Disabling and Enabling** .
2. Disconnect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .
3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications.

CAUTION: Refer to Foam Sound Deadeners Caution .

5. Note the location and remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .

IMPORTANT: Do not damage any inner panels or reinforcements.

6. Locate and drill out all factory welds. Note the number and location of the welds for installation of the service part.

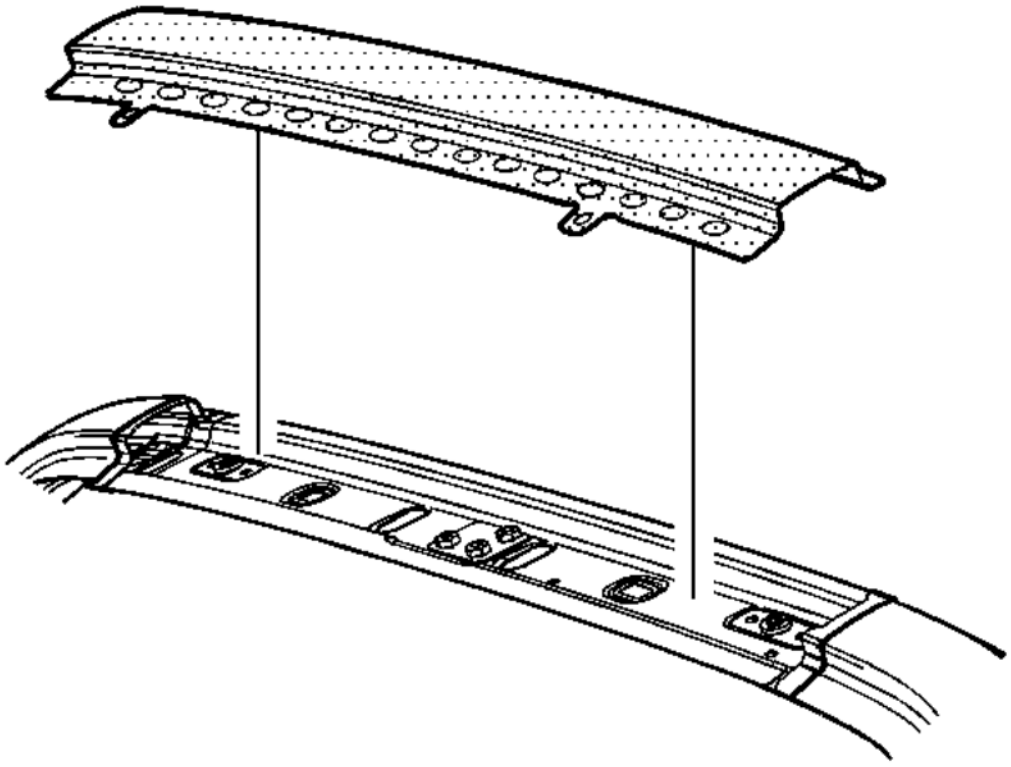


Fig. 140: View Of Inner & Outer Panels
Courtesy of GENERAL MOTORS CORP.

7. Remove the damaged part.

Installation Procedure

IMPORTANT: If the location of the original plug weld holes cannot be determined, space the plug weld holes every 40 mm (11/2 in) apart. Where structural adhesive was present, space the plug weld holes every 20 mm (3/4 in) apart.

1. Prepare all mating surfaces as necessary.
2. Apply GM-approved Weld-Thru Coating or equivalent to all mating surfaces. Refer to **Anti-Corrosion Treatment and Repair** .
3. Position the service part. Clamp in place.

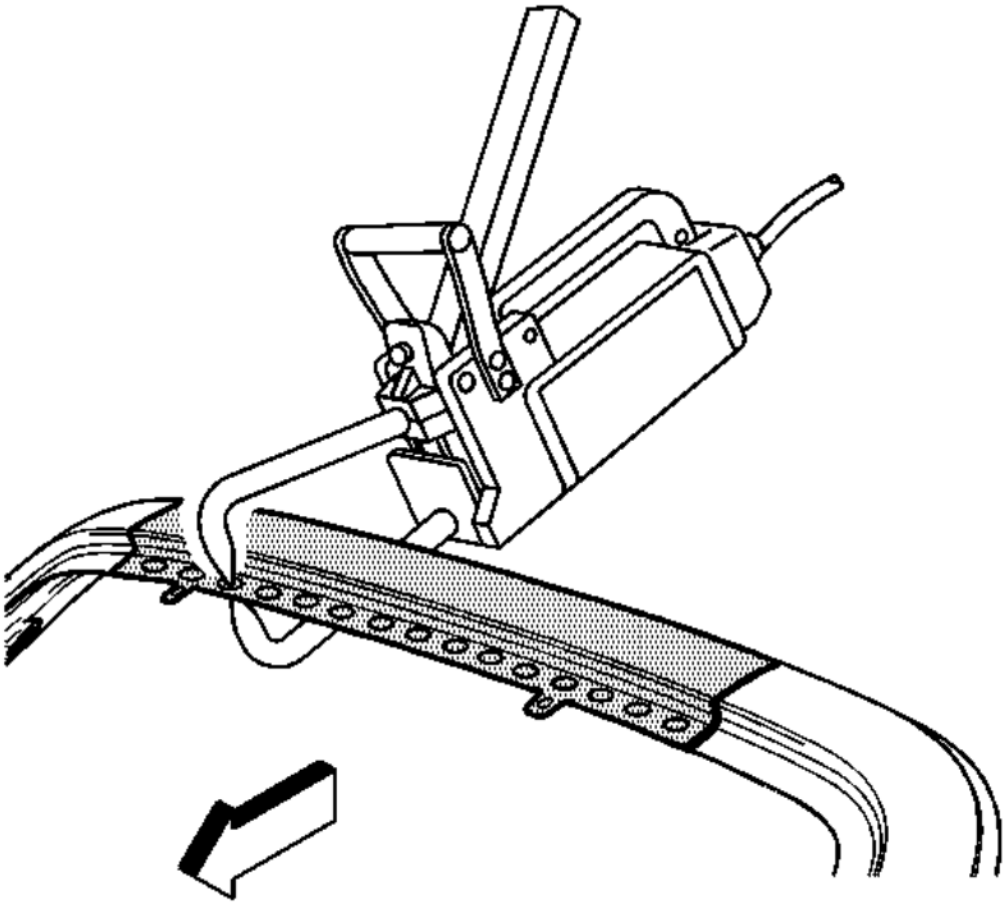


Fig. 141: View Of Welding Procedure
Courtesy of GENERAL MOTORS CORP.

4. Apply welds accordingly.
5. Clean and prepare all welded surfaces.
6. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
7. Paint the repair area. Refer to **Basecoat/Clearcoat Paint Systems** .
8. Install all related panels and components.
9. Connect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .
10. Enable the SIR system. Refer to **SIR Disabling and Enabling** .

MIG WELDED FULL PANEL REPLACEMENT

IMPORTANT: Use this procedure for all panels that are replaced at the factory seams, unless a specific procedure exists in the Collision Repair section of this vehicle's service information.

Removal Procedure

CAUTION: Refer to Approved Equipment for Collision Repair Caution .

1. Disable the SIR system. Refer to **SIR Disabling and Enabling** .
2. Disconnect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .
3. Remove all related panels and components.
4. Repair as much of the damage as possible to factory specifications.

CAUTION: Refer to Foam Sound Deadeners Caution .

5. Note the location and remove the sealers and anti-corrosion materials from the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .

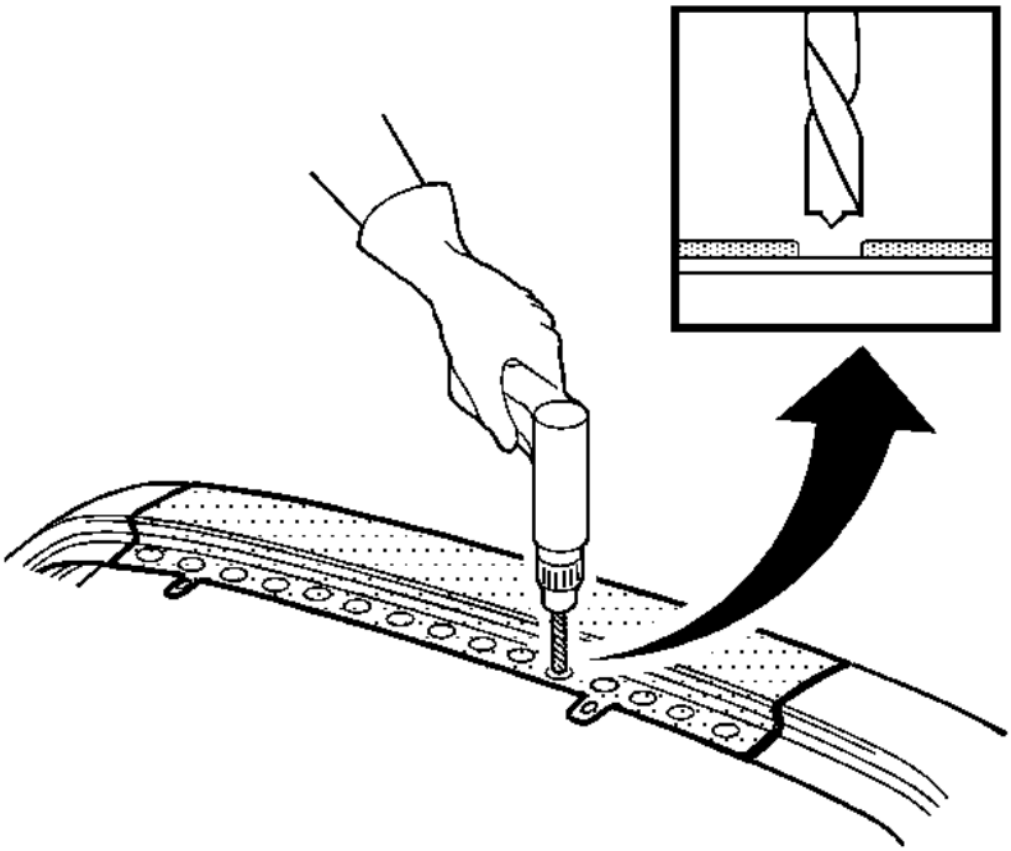


Fig. 142: Drilling Out Factory Welds
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Do not damage any inner panels or reinforcements.

6. Locate and drill out all factory welds. Note the number and location of the welds for installation of the service part.

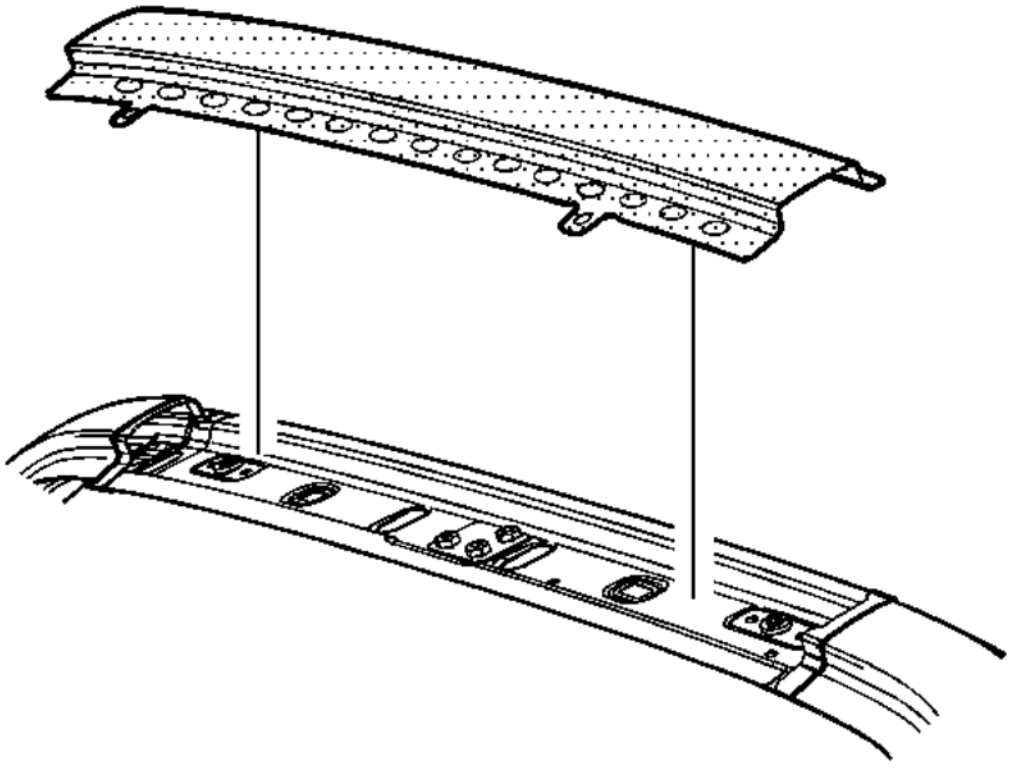


Fig. 143: View Of Inner & Outer Panels
Courtesy of GENERAL MOTORS CORP.

7. Remove the damaged part.

Installation Procedure

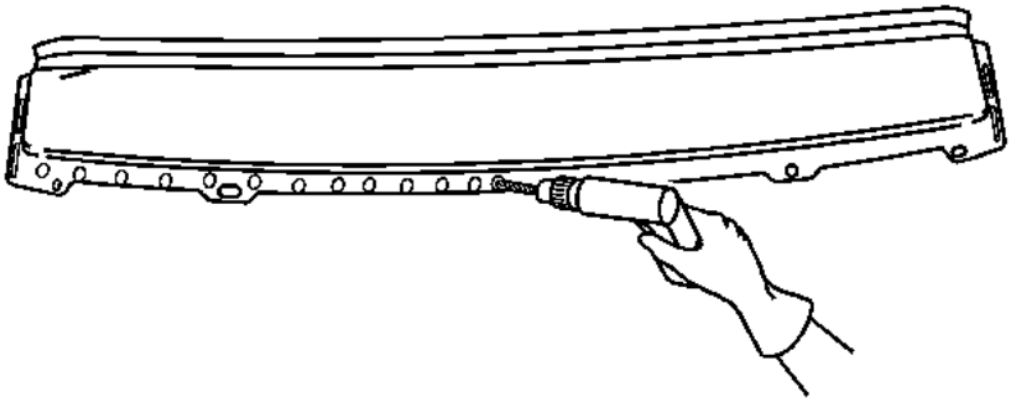


Fig. 144: Drilling Plug Weld Holes
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: If the location of the original plug weld holes can not be determined, space the plug weld holes every 40 mm (1 1/2 in) apart. Where structural adhesive was present, space the plug weld holes every 20 mm (3/4 in) apart.

1. Drill 8 mm (5/16 in) plug weld holes in the service part as necessary in the locations noted from the original panel.
2. Prepare all attachment surfaces as necessary.
3. Prepare all mating surfaces as necessary.
4. Apply GM-approved Weld-Thru Coating or equivalent to all mating surfaces. Refer to **Anti-Corrosion Treatment and Repair** .
5. Position the service part. Clamp in place.

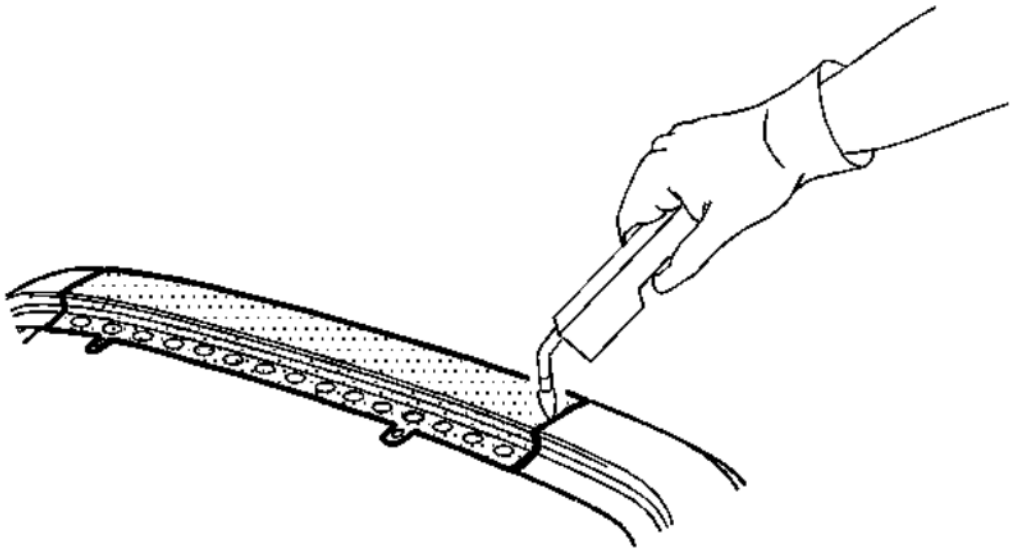


Fig. 145: View Of Plug Welding
Courtesy of GENERAL MOTORS CORP.

6. Plug weld accordingly.
7. Clean and prepare all welded surfaces.
8. Apply the sealers and anti-corrosion materials to the repair area, as necessary. Refer to **Anti-Corrosion Treatment and Repair** .
9. Paint the repair area. Refer to **Basecoat/Clearcoat Paint Systems** .
10. Install all related panels and components.
11. Connect the negative battery cable. Refer to **Battery Negative Cable Disconnection and Connection (w/Single Battery)** or **Battery Negative Cable Disconnection and Connection (w/Auxiliary Battery)** or **Battery Negative Cable Disconnection and Connection (w/Dual Batteries)** .
12. Enable the SIR system. Refer to **SIR Disabling and Enabling** .

DESCRIPTION AND OPERATION

METAL PANEL BONDING

This is intended to provide general guidelines for adhesive bonding of exterior panels as an alternative to Metal-Inert Gas (MIG) welding. Panel bonding may be seen as an alternative to MIG welding to provide full panel replacement in regards to collision repair procedures. The benefits of panel bonding is:

- No heat or burn damage when additional welding is not required

- Corrosion protection
- Can act as a sealant
- Improved process for complicated shapes (wheelhouse area)

The General Motors specification for metal bonding adhesives is GM 6449G. The scope of this specification is intended to provide the performance guidelines of structural adhesive systems used to repair (metallic) automotive bodies in the aftermarket. These types of adhesives are intended for use when bonding replacement body panels as an option to welding as the attachment means. GM information outlines the use of room temperature cure acrylic adhesives that contain glass bead technology.

Bonding procedures in general are applicable only to a factory seams type approach.

Sectioning or partial paneling of full panels is not supported by General Motors unless specifically documented in a Service Bulletin or Manual.

Applicable components for this technology are EXTERIOR PANELS ONLY, including door skins, tail panels, roof outer panels and quarter panels.

IMPORTANT: Do not use adhesives for vehicle underbody or upper body structure type repairs such as structural rails, shock/strut towers, floor pans, upper fender rails, body side pillars, door rings-side or rear, rocker panels, unless specifically documented in a GM Service Bulletin or Manual. If in doubt, use only the procedures referenced in the Service Manual for the specific vehicle being repaired.
Always follow the system manufacturer's instructions for application, handling, and curing.

Adhesives currently meeting the performance requirements include General Motors materials and products manufactured by Lord Adhesives. At this time, ONLY the adhesive products listed below meet this guideline:

Manufacturer and Part Number	Description
GM P/N 12378566 (US)	Fast Set Panel Bonding Adhesive
GM P/N 88901674 (Canada)	
Lord Fusor P/N 110B/111B	
GM P/N 12378567 (US)	Medium Set Panel Bonding Adhesive
GM P/N 88901675 (Canada)	
Lord Fusor P/N 108B/109B	
3M P/N 8116	Panel Bonding Adhesive
Ashland Plio Grip Panel 60	Panel Bonding Adhesive