

Welded And Adhesively Bonded Panel Replacement (EXT02)

Module 1-Exterior Panel Replacement

- A. Panel Construction
 - 1. Learning Objectives
 - 2. Panel Construction
 - 3. Panel Construction (cont'd)
 - 4. Vehicle Maker Panel Attachment Methods
- B. Damage Analysis
 - 1. Types Of Damage
 - 2. Measuring For Damage
 - 3. Measuring For Damage (cont'd)
 - 4. Measuring For Damage (cont'd)
 - 5. Repair Vs. Replace
- C. Planning The Repair
 - 1. Developing A Repair Plan
 - 2. Developing A Repair Plan (cont'd)
 - 3. Panel Replacement–Factory Seams
 - 4. Panel Replacement–Factory Seams (cont'd)
 - 5. Brazing And Silicon Bronze
 - 6. Silicon Bronze
 - 7. Sectioning Body Panels
 - 8. Unisides
 - 9. Sectioning Unisides
 - 10. Uniside Sectioning Without Recommendations
 - 11. Sectioning Joint Recommendations
 - 12. Common Sectioning Locations
 - 13. Mark And Scribe
 - 14. Cut And Join
 - 15. Choosing A Cut Location
 - 16. Reasons NOT To Section
- D. General Panel Removal Procedures
 - 1. Panel Removal Procedures—Initial Steps
 - 2. Spot Weld Removal Tools
 - 3. Spot Weld Removal
 - 4. Spot Weld Removal (cont'd)
 - 5. Removing Spot Welds From Boron Steel
 - 6. Panel Removal
 - 7. Panel Removal (cont'd)
 - 8. Transferring Weld Locations
 - 9. Bonded Panel Removal Using Heat
 - 10. Bonded Panel Removal–Mechanical
 - 11. Flange Preparation On Vehicle
 - 12. Panel Preparation–Replacement Part
- E. Attachment Methods
 - 1. Temporary Attachment For Panel

2. Vehicle Maker Panel Alignment Specifications
 3. Vehicle Maker Panel Alignment Specifications (cont'd)
 4. Welding Methods
 5. Squeeze-Type Resistance Spot Welders (STRSW)
 6. STRSW (cont'd)
 7. STRSW (cont'd)
 8. GMA (MIG) Plug Welding
 9. GMA (MIG) Plug Welding (cont'd)
 10. Adhesive Bonding Joints
- F. General Panel Installation Procedures
1. Panel Installation–Sound Deadeners
 2. Panel Installation Procedure–Welded Panels
 3. Panel Installation Procedure–Welded Panels (cont'd)
 4. Finishing The Repair
- G. Review
1. Review #1
 2. Review #2
- H. Conclusion
1. Conclusion
 2. Conclusion (cont'd)
 3. Conclusion (cont'd)

Module 2-Door Skin And Welded-On Hinge Replacement

- A. Parts Identification
1. Learning Objectives
 2. Parts Identification
 3. Door Types
 4. Door Panel Construction Materials
- B. Door Damage Analysis
1. Inspecting The Door Area
 2. Intrusion Beams
 3. Intrusion Beams (cont'd)
 4. Repair Vs. Replace Door Shell
- C. Planning The Door Repair
1. Developing A Repair Plan
 2. Sectioning A Door Skin
 3. Welding Considerations
 4. Adhesive Bonding
 5. Combining Welding And Bonding
- D. Preparation Steps For Door Skin Replacement
1. Door Shell Straightening
 2. Removing Door Parts
 3. Removing Door For Skin Replacement
 4. Removing The Door-Bolted-On Hinges
 5. Removing The Door-Welded-On Hinges
- E. Removing And Installing The Door Skin
1. Door Skin Removal
 2. Video: Complete Door Skin Removal

3. Door Shell Preparation
 4. Door Skin Installation–Fit-Up
 5. Door Skin Attachment–Bonded
 6. Drilling Window Plug Weld Holes
 7. Applying Door Skin Adhesive
 8. Panel Installation
 9. Panel Installation (cont'd)
 10. Video: Complete Door Skin Installation
 11. Door Skin Sectioning
 12. Door Skin Sectioning (cont'd)
 13. Video: Sectioning A Door Skin
- F. Installing Hinges And Door
1. Converting A Welded-On To Bolted-On Hinge
 2. Converting A Welded-On To Bolted-On Hinge (cont'd)
 3. Converting A Welded-on To Bolted-On Hinge (cont'd)
 4. Installing The Door
 5. Video: Replacing A Welded-On Hinge With A Bolted-On Hinge
 6. Seam Sealers And Panel Edging
 7. Restore Corrosion Protection
- G. Review
1. Review #1
 2. Review #2
 3. Review #3
- H. Conclusion
1. Conclusion
 2. Conclusion (cont'd)
 3. Conclusion (cont'd)

Module 3-Quarter Panel, Box Side, Side Panel Replacement

- A. Parts Identification
1. Learning Objectives
 2. Parts Identification For Quarter Panel
 3. Quarter Panel Types
 4. Sail Panel To Roof Panel Joint Designs
 5. Replacement Weld Joint Types
- B. Planning A Quarter Panel Repair
1. Repair Plan
 2. Sectioning Locations
 3. Replacement Welds
 4. Weld-Bonding
 5. Video: Weld-Bonding A Quarter Panel
- C. Quarter Panel Removal And Installation
1. Removing Adjacent Parts
 2. Quarter Panel Removal–Complete
 3. Quarter Panel Removal–Complete (cont'd)
 4. Quarter Panel Removal–Complete (cont'd)
 5. Partial Quarter Panel Removal
 6. Video: Quarter Panel Sectioning-Removal

7. Quarter Panel Installation
8. Quarter Panel Installation (cont'd)
9. Quarter Panel Installation (cont'd)
10. Quarter Panel Installation (cont'd)
11. Installing Sectioned Quarter Panel
12. Proper Cut Location When Sectioning
13. Sectioned Quarter Panel Joints
14. Video: Quarter Panel Sectioning-Installation
15. Video: Welded-To-Bonded Quarter Panel Replacement
- D. Replacing Truck Box Sides
 1. Replacing Truck Box Sides
 2. Replacing Truck Box Sides (cont'd)
 3. Replacing Truck Box Sides (cont'd)
 4. Replacing Truck Box Sides (cont'd)
 5. Replacing Truck Box Sides (cont'd)
- E. Cab Corner Panel Replacement
 1. Cab Panel Designs
 2. Vehicle Maker Joints
 3. Cab Corner Sectioning
 4. Sectioning Joints
 5. Cab Corner Removal
 6. Cab Panel Installation
 7. Cab Panel Installation (cont'd)
 8. Cab Panel Installation (cont'd)
 9. Cab Panel Installation (cont'd)
 10. Video: Cab Corner Replacement
- F. Review
 1. Review #1
 2. Review #2
- G. Conclusion
 1. Conclusion
 2. Conclusion (cont'd)
 3. Conclusion (cont'd)
 4. Conclusion (cont'd)

Module 4-Roof Panel Replacement

- A. Roof Panel Designs
 1. Learning Objectives
 2. Roof Panel Designs
 3. Roof Panel Designs (cont'd)
 4. Roof Panel Designs (cont'd)
 5. Roof Panel Designs–Sunroofs
 6. Roof Panel Joints
 7. Anti-Flutter Material
- B. Planning The Repair
 1. Replacing A Roof Panel–Considerations
 2. Replacing A Roof Panel–Considerations (cont'd)
 3. Panel Replacement Sequence

- C. Panel Attachment Methods
 - 1. Types Of Vehicle Maker Attachment Methods
 - 2. Determining Bonding Vs. Welding
- D. Roof Panel Removal Procedures
 - 1. Part Removal Before Roof Removal
 - 2. Part Removal Before Roof Removal (cont'd)
 - 3. Working With Roof Bows
 - 4. Removing Welded-On Roof Panels
 - 5. Removing Welded-On Roof Panels (cont'd)
 - 6. Video: Removing A Welded-On Roof Panel
 - 7. Removing Bonded-On Roof Panels
 - 8. Video: Removing A Bonded Roof Panel
- E. Roof Panel Installation Procedures
 - 1. Roof Installation–Welded-On
 - 2. Roof Installation–Welded-On (cont'd)
 - 3. Roof Installation–Welded-On (cont'd)
 - 4. Video: Installing A Welded-On Roof Panel
 - 5. Roof Installation–Bonded-On
 - 6. Video: Installing A Bonded Roof Panel
 - 7. Roof Installation–Finishing
- F. Review
 - 1. Review #1
 - 2. Review #2
- G. Conclusion
 - 1. Conclusion
 - 2. Conclusion (cont'd)

Module 5-Rear Body Panel Replacement

- A. Rear Body Panel Joint Design And Repair Plan
 - 1. Learning Objectives
 - 2. Rear Body Panel Designs/Joint Types
 - 3. Repair Plan/Considerations
- B. Rear Body Panel Removal And Installation
 - 1. Rear Body Panel Removal
 - 2. Rear Body Panel Installation-Welded
 - 3. Rear Body Panel Installation-Welded (cont'd)
 - 4. Rear Body Panel Installation-Welded (cont'd)
 - 5. Sectioning The Rear Body Panel
 - 6. Sectioning The Rear Body Panel (cont'd)
 - 7. Sectioning The Rear Body Panel (cont'd)
- C. Rear Cab Panel Removal And Installation
 - 1. Rear Cab Panel
 - 2. Video: Replacing A Rear Cab Panel
- D. Additional Welded-On Parts
 - 1. Additional Welded-On Parts
 - 2. Fenders
- E. Review
 - 1. Review #1

F. Conclusion

1. Conclusion
2. Conclusion (cont'd)
3. Conclusion (cont'd)
4. Post-Test