Uniform Procedures For Collision Repair

FR11S–Fender, Welded-On

 v.2.3

1. Description

This procedure describes the repair and complete replacement of a welded-on steel fender. Inspection and evaluation requirements are also included.

2. Purpose

The purpose of this procedure is to provide industry-accepted requirements for performing high-quality repair of welded-on steel fenders. This procedure is intended for use by professionals who are qualified through training and experience.

3. Referenced Documents

The following documents are considered part of this procedure by reference.

3.1 Procedures

CP01S Corrosion Protection
HO01 Hinge, Bolted-On
PS01 Personnel Safety
RF01S Surface Preparation
ST01S Stress-Relieving Heat Limitations
ST21S Metal Repair
ST31 Body Fillers
WE01S GMA (MIG) Plug Weld
WE11S GMA (MIG) Fillet Weld
WE51S Squeeze-Type Resistance Spot Weld

3.2 Other Information

Recycled parts information
Vehicle-specific repair information

4. Equipment And Material Requirements

4.1 Welding Equipment

Use GMA (MIG) welding equipment as described in **WE01S** or **WE11S**.

Use squeeze-type resistance spot welding (STRSW) equipment as described in **WE51S**.

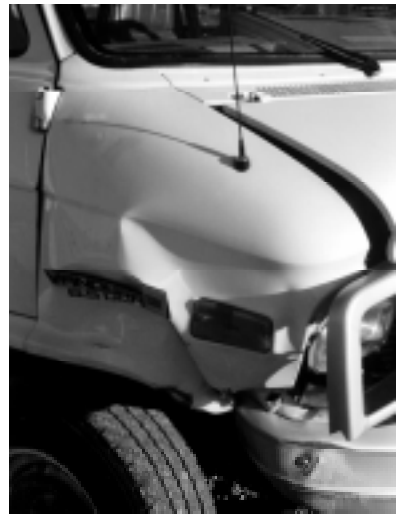
Note: Some vehicle makers recommend against the use of STRSW for replacing spot welds.

5. Damage Analysis

5.1 General Damage

Inspect a welded-on fender for these types of damage:

- ❏ visible damage
- ❏ corrosion
- ❏ misalignment with adjacent panels
- ❏ improper previous repairs
- ❏ damaged finish
- ❏ broken or damaged welds
- ❏ cracked seam sealers



6. Personnel Safety

6.1 General Safety

General safety information is in **PS01**.

6.2 Welding Safety

Welding safety information is in **WE01S**, **WE11S**, or **WE51S**.

7. Environmental Safety

Does not apply.

8. Vehicle Protection

8.1 Electronic Parts

To protect computers and other sensitive parts from damage:

- ❏ Follow the vehicle maker's recommendations for recording and resetting electronic memories.
- ❏ Ensure that the ignition switch is in the LOCK position, and the key is removed.
- ❏ Disconnect and isolate the negative battery cable, and disarm the passive restraint system. Follow the vehicle maker's recommendations.
- ❏ Carefully remove computer modules when welding or heating within 300 mm (12"), or a greater distance when recommended by the vehicle maker.
- ❏ Protect computer modules, connectors, and wiring from dirt, heat, static electricity, and moisture.
- ❏ Loosen or remove any wiring harnesses or electrical parts that could be damaged during the repair process.

Remove the battery if it is near an area to be welded or heated.

8.2 Adjacent Areas

Protect glass, upholstery, and other cosmetic surfaces from welding, grinding, and sanding operations.

8.3 Anti-Theft Label

Protect the anti-theft label during repair and refinishing operations.

9. Repair Procedure

9.1 Fender Repairs

To straighten a welded-on fender:

❑ 1. Repair damage using metal repair and heat shrinking procedures. Weld tears or punctures in the fender as required. If heat is used for relieving stress, follow the vehicle maker's temperature and time recommendations. If the part cannot be identified as mild steel, treat it like high-strength steel (HSS).
Note: Some vehicle makers do not recommend the use of heat for stress-relieving.
❑ 2. Replace trim-mounting studs or drill holes, if necessary.
❑ 3. Apply corrosion-resistant primer to all interior and exterior surfaces and other areas damaged by the collision or repairs.
❑ 4. Apply seam sealers as necessary to seal the joints and restore the appearance. Reprime if required by the product maker.
❑ 5. Apply anti-corrosion compounds as required.
❑ 6. Refinish areas damaged by the collision, repairs, or anchoring, as required to restore the appearance. Refinish cosmetic surfaces after all body repairs are complete.
❑ 7. Install inner splash panels and other parts as required.
❑ 8. Continue vehicle reassembly.

9.2 Fender Removal

To remove a welded-on steel fender:

❑ 1. Make sure all adjacent panels are in alignment before removing the fender.
❑ 2. Loosen or remove the bumper, header panel, or headlamp, if necessary.
❑ 3. Loosen, remove, or support the hood, if required.
❑ 4. Reposition or remove any attached mechanical parts, wiring, computers, or electronic parts.
❑ 5. Remove moldings and trim, if necessary.
❑ 6. Some vehicle makers require removing adjacent parts, such as the bumper or windshield, when removing a welded-on fender. Follow the vehicle maker's recommendations.
❑ 7. Remove fasteners attaching the inner skirt or splash panels to the fender and inner structure, as required.
❑ 8. Identify and mark all spot weld locations.
❑ 9. Remove the spot welds. Do not damage the parts attached to the fender which are not to be replaced.
❑ 10. Remove the damaged fender. Do not discard any labels until replacements are obtained.

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- ❑ 11. Remove any burrs or spot weld nuggets from the mating flanges, and repair any damage. Avoid removing any zinc coating.
- ❑ 12. Straighten the panel edges, if necessary, to ensure a proper fit-up with the replacement part.

9.3 Fender Installation

To install a replacement welded-on steel fender:

- ❑ 1. Verify that the proper parts are being installed by checking the part number and performing a trial fit.
- ❑ 2. Prepare the fender for vehicle options such as antenna, trim, etc., if necessary.
- ❑ 3. Install trim mounting studs or drill holes, if necessary.
- ❑ 4. Clean the mating surfaces. Avoid removing any zinc coating.
- ❑ 5. Refer to the vehicle maker's body repair manual for the recommended welding method. STRSW should only be used when recommended by the vehicle maker.
- ❑ 6. Refer to the vehicle maker's recommendations for the location, number, and size of plug weld holes. If no recommendations are available, punch or drill 8 mm (5⁄16") holes in the outer panel at the same locations used originally by the vehicle maker.
- ❑ 7. Test-fit the replacement fender and clamp it in place.
- ❑ 8. Remove the replacement fender from the vehicle.
- ❑ 9. Apply weld-through primer to all mating surfaces that do not have zinc coating, or where the zinc coating was removed. Follow the vehicle maker's recommendations. Due to the poor adhesion property of some weld-through primers, it may have to be removed from all exposed surfaces after welding before applying other coatings and sealants.
- ❑ 10. Apply weld-bond adhesive when recommended by the vehicle maker.
- ❑ 11. Position the part on the vehicle and clamp it in place.
- ❑ 12. Verify that the part is properly aligned.
- ❑ 13. Tack weld, or securely hold, the part in position.
- ❑ 14. Check the alignment to the adjacent panels.
- ❑ 15. Make test welds, before welding on the vehicle, using the same type and thickness metal that will be welded on the vehicle. Make the test welds in the same position as the welds on the vehicle, using weld-though primer if applicable. Visually inspect and destructively test the welds before welding on the vehicle.
- ❑ 16. Make the required welds.
- ❑ 17. Verify that the part is properly aligned.

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9. Repair Procedure (cont'd)

- ❑ 18. Dress the welds, if necessary.
- ❑ 19. Apply corrosion-resistant primer to all interior and exterior surfaces and other areas damaged by the collision or repairs.
- ❑ 20. Apply seam sealers as necessary to seal the joints and restore the appearance. Reprime if required by the product maker.
- ❑ 21. Apply anti-corrosion compounds to all enclosed areas.
- ❑ 22. Refinish areas damaged by the collision, repairs, or anchoring, as required to restore the appearance. Refinish cosmetic surfaces after all body repairs are complete.
- ❑ 23. Reinstall or replace inner splash panels, labels, and other parts as required.
- ❑ 24. Continue vehicle reassembly.

10. Use Of Recycled (Salvage) Parts

10.1 Condition Of Salvage Parts

Do not install a salvage, welded-on, steel fender having any of these defects:

- ❑ unrepairable damage
- ❑ corrosion that has caused pitting
- ❑ improper previous repairs
- ❑ missing mounting locations
- ❑ excess paint or filler thickness

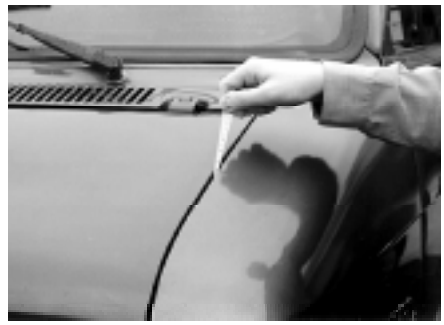
10.2 Preparation Of Salvage Parts

To prepare a salvage, welded-on, steel fender for installation:

- ❑ Clean the part to remove dirt, wax, grease, undercoating, or corrosion.
- ❑ Make any necessary repairs.
- ❑ Remove excessive paint film thickness.
- ❑ Remove any attached structures.
- ❑ Remove all heat-affected zones.
- ❑ Make sure the parts are not deformed along the weld joints.
- ❑ Remove any trim or moldings that are to be reused or replaced.
- ❑ Remove or install welded trim-attachment studs and drill or fill trim-attachment holes, as required.
- ❑ Apply corrosion protection as necessary.
- ❑ Refinish panel edges before installation to restore appearance.

11. Inspection And Testing

11.1 Inspection Of A Repaired Or Replaced Fender



After installation, inspect a welded-on steel fender for these conditions:

- ❏ proper alignment with attached and adjacent parts
- ❏ proper operation of adjacent hinged parts
- ❏ weld quality
- ❏ proper application of corrosion protection
- ❏ proper finish appearance
- ❏ proper operation of attached electrical and electronic parts

Correct any defects.