



D022

Door, Sliding

**Uniform
Procedures For
Collision Repair
UPCR**

© Copyright 1998 Inter-Industry Conference On Auto Collision Repair

v.4.0



1. Description

This procedure describes the repair or replacement of a sliding door. 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 sliding doors. 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

CP01A Corrosion Protection
CP01S Corrosion Protection
DO31P Skin
DO31S Skin
EL01 Wire Repair
EL11 Troubleshooting
EL21 Self-Diagnostics
MG01 Movable Glass
PR01 Plastic Repair, Welding
PR11 Plastic Repair, Adhesive
PS01 Personnel Safety
RF01P Surface Preparation
RF01S Surface Preparation
RF41 Finish Application
SG01 Adhesively Bonded
SG02 Mechanically Fastened
SG11 Gasket Mounted
ST21A Metal Repair
ST21S Metal Repair
ST31 Body Fillers
WE01A GMA (MIG) Plug Weld
WE01S GMA (MIG) Plug Weld
WE11A GMA (MIG) Fillet Weld
WE11S GMA (MIG) Fillet Weld

3.2 Other Information

Product-specific information
Vehicle-specific repair information



4. Equipment And Material Requirements

4.1 GMA (MIG) Welding Equipment

Use GMA (MIG) welding equipment as described in **WE01A**, **WE01S**, **WE11A**, or **WE11S**.

4.2 Electronic Equipment

The use of this electronic testing equipment is included in this procedure:

- digital volt-ohmmeter (DVOM)
- jumper wires

4.3 Plastic Repair Equipment And Materials

Use plastic repair equipment and materials as described in **PR01** or **PR11**.

4.4 Door Repair Materials

The use of these materials is included in this procedure:

- seam sealers
- anti-corrosion compounds
- sound-deadening pads
- track lubricant



5. Damage Analysis

5.1 General Damage

Inspect a sliding door for these conditions or types of damage:

- visible damage
- corrosion
- loose or misaligned sliding track
- misaligned or damaged intrusion beam
- damaged or stressed spot welds or fasteners
- stress cracks at the mounting locations
- damaged or missing trim, labels, seals, etc.
- excessive filler or paint film thickness
- separation of the skin from the inner structure
- damage to any energy-absorbing foam panels
- improper previous repairs
- damaged stationary glass or mounting (see **SG01**, **SG02**, or **SG11**)
- glass fit and operation if not stationary (see **MG01**)
- misaligned or damaged rollers and brackets

(cont'd)



5. Damage Analysis (cont'd)

Determine whether the door should be repaired or replaced. If the door skin cannot be repaired, plan to replace it. See **DO31P** or **DO31S**.

If the door intrusion beam is damaged, determine if a replacement part is available. Some vehicle makers do not recommend repairing door intrusion beams. If the vehicle maker does not recommend repairs, or does not provide a replacement intrusion beam, plan to replace the door.

If an energy-absorbing foam panel is damaged or must be removed, plan to replace it.

5.2 Electrical Parts

Inspect power sliding door electrical parts for these conditions or types of damage:

- improper operation
- blown fuses
- loose or corroded grounds or connectors
- damaged wiring or connectors
- corroded terminal pins
- damaged or corroded switches
- inoperative or misaligned motors
- damaged control module, if applicable
- improper operation of the door ajar warning, if applicable
- inoperative power door lock, window, or closure mechanism, if applicable

If electrical parts do not function correctly, troubleshoot the sliding door circuit to isolate the cause. See **EL11**. See **EL21** for troubleshooting self-diagnostic systems. Determine the parts to be replaced and the wiring to be repaired. See **EL01** for wire repair procedures. Verify the availability of replacement parts.



6. Personnel Safety

6.1 General Safety

General safety information is in **PS01**.

Make sure the door is properly supported, and use proper lifting techniques during removal and installation.

6.2 Metal Repair Safety

Metal repair safety information is in **ST21A** or **ST21S**.

6.3 Welding Safety

Welding safety information is in **WE01A**, **WE01S**, **WE11A**, or **WE11S**.

6.4 Plastic Repair Safety

Plastic repair safety information is in **PR01** or **PR11**.

6.5 Electrical Safety

Electrical testing safety information is in **EL11**.



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 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.

8.2 Door And Adjacent Areas

When removing or replacing a sliding door:

- Protect the door from damage during removal, storage, and installation. Assistance may be required.
- Protect adjacent areas from damage.
- Protect glass, upholstery, and other cosmetic surfaces from damage caused by welding or cutting sparks. Remove interior and exterior trim and adjacent panels that cannot be protected.



9. Repair Procedure

For minor door repairs, see **9.1**. For replacing the door, see **9.2** and **9.3**. For replacing a welded-on door intrusion beam, see **9.4**. For replacing a mechanically fastened door intrusion beam, see **9.5**.

9.1 Minor Repairs

To perform minor repairs on a sliding door:

- 1. Perform repairs using metal repair, heat shrinking, and plastic repair procedures, as applicable. Repairs to damaged intrusion beams may not be recommended, or may be limited to minor damage and cold straightening methods. Follow the vehicle maker's recommendations.
- 2. Replace damaged welded-on trim-mounting studs.
- 3. Apply corrosion-resistant primer to all interior and exterior surfaces damaged by the collision or repairs.
- 4. Refinish the door, if required to restore the appearance, including edges damaged by the collision or repairs. Refinish cosmetic surfaces after all body repairs are complete.
- 5. Replace or restore sound deadeners, energy-absorbing foam panels, undercoatings, etc., that were damaged by the collision or during repairs.
- 6. Check the alignment of the track. Adjust if required.
- 7. Check the height and lateral alignment of the sliding door to the adjacent panels. Adjust if required.
- 8. Replace all trim, labels, weatherstripping, etc.
- 9. Continue vehicle reassembly.

9.2 Removal

To remove a sliding door:

- 1. Protect the interior and adjacent panels.
- 2. Open and support the door.
- 3. Remove interior trim, if required for access.
- 4. Disconnect, remove, and protect electrical connectors, wiring, etc., if applicable.
- 5. Remove fasteners holding the slide rollers to the vehicle, or hinge pins holding the sliding door to the slide rollers, if required.
- 6. Remove required track parts to allow the sliding door to be removed from the vehicle.
- 7. Carefully remove the sliding door from the track assembly and store the door.

9.3 Installation

To install a sliding door:

- 1. Apply corrosion-resistant primer to all areas damaged by the collision or repairs.
- 2. Apply seam sealers, if required. Reprime if required by the product maker.

(cont'd)



9. Repair Procedure (cont'd)

- 3. Refinish the underside, edges, body opening, and any areas where hardware will be installed, if required to restore the appearance. Refinish cosmetic surfaces after all body repairs are complete.
- 4. Protect the adjacent parts.
- 5. Support the door while sliding it onto the track assembly.
- 6. Install the track assembly and hinge parts removed for access.
- 7. Reroute any electrical wiring to its original location.
- 8. Check the alignment of the track. Adjust if required.
- 9. Check the height and lateral alignment of the sliding door to the adjacent panels. Adjust if required.
- 10. Torque all fasteners to the vehicle maker's recommendations.
- 11. Recheck the alignment of the track and door to the adjacent panels. Adjust if required.
- 12. Verify the proper operation of the door checks or brakes.
- 13. Check the door for proper latching. Align the striker and latch assembly.
- 14. Reconnect all electrical connectors.
- 15. Apply any required sound-deadening pads and energy-absorbing foam panels.
- 16. Transfer or install replacement parts such as door handles, locks, window regulators and tracks, latch assemblies, etc.
- 17. Install all removed interior trim.
- 18. Install all exterior trim, labels, weatherstripping, etc.
- 19. Lubricate the track, rollers, and hinges, if required.
- 20. Test the operation of the door, lock, glass, and all electrical accessories. Correct any defects.
- 21. Perform air and water leak tests to ensure proper door-to-body and glass-to-door seals.
- 22. Continue vehicle reassembly.

9.4 Welded-On Intrusion Beam Replacement

To replace a welded-on intrusion beam:

- 1. Remove all parts necessary to access the intrusion beam, and to prevent damage.
- 2. Straighten the door frame to the proper dimensions. Verify the alignment of the door frame to the door opening.
- 3. Identify and mark all spot weld locations.
- 4. Remove the spot welds. Do not damage any parts which are not to be replaced. Do not drill completely through the inner panel where the new beam will mount.
- 5. Remove the damaged intrusion beam.
- 6. Remove any burrs or spot weld nuggets from the weld mating locations. Avoid removing any zinc coating.
- 7. Verify that the proper part is being installed by checking the part number and performing a trial fit.
- 8. Clean the weld mating surfaces. Avoid removing any zinc coating.

(cont'd)



9. Repair Procedure (cont'd)

- 9. Refer to the vehicle maker's recommendation for the location, number, and size of plug weld holes. If no recommendations are available, punch or drill holes that duplicate the diameter of the original spot welds in the replacement beam at the same locations used originally by the vehicle maker.
- 10. Apply weld-through primer to all weld 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.
- 11. Protect glass or other sensitive parts that cannot be removed. Position the beam on the door and tack weld or clamp it in place.
- 12. Make test welds, before welding on the door, 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-through primer if applicable. Visually inspect and destructively test the welds before welding on the vehicle.
- 13. Make the required welds.
- 14. Dress the welds, if required.
- 15. Apply corrosion-resistant primer to all interior and exterior surfaces damaged by the collision or repairs.
- 16. Install all parts that were removed for access.
- 17. Continue door repair.

9.5 Mechanically Fastened Intrusion Beam Replacement

To replace a mechanically fastened intrusion beam:

- 1. Remove all parts required to access the intrusion beam, and to prevent damage.
- 2. Straighten the door frame to the proper dimensions. Verify alignment of the door frame to the door opening.
- 3. Locate and remove all mounting fasteners. Plan to replace any one-time or damaged fasteners. Use replacement fasteners that are the same grade, size, and type as the original fasteners.
- 4. Remove the damaged intrusion beam.
- 5. Verify that the proper part is being installed by checking the part number and performing a trial fit.
- 6. Align the replacement part with the mounting locations.
- 7. Loosely install the fasteners.
- 8. Torque the fasteners to the vehicle maker's recommendations.
- 9. Apply corrosion-resistant primer to all interior and exterior surfaces damaged by the collision or repairs.
- 10. Install all parts that were removed for access.
- 11. Continue door repair.



10. Use Of Recycled (Salvage) Parts

10.1 Condition Of Salvage Parts

Do not install a salvage sliding door having any of these defects:

- unrepairable damage
- corrosion that has caused pitting
- improper previous repairs
- stress cracks around the mounting areas
- damage caused by fire
- excessive filler or paint film thickness

Plan to transfer or replace any of the following:

- window or lock parts required to duplicate vehicle options
- damaged, missing, or mis-matched moldings, labels, or other required trim
- door latch

10.2 Preparation Of Salvage Parts

To prepare a salvage sliding door for installation:

- Remove trim as necessary.
- Make any necessary repairs.
- Clean the part to remove dirt, grease, corrosion, excessive paint film thickness, etc.
- Refinish the door frame before installation, to restore appearance.



11. Inspection And Testing

11.1 Inspection Of A Repaired Or Replaced Door

After installation or repair, inspect a sliding door for these conditions:

- proper lubrication
- proper application of seam sealers and corrosion protection
- proper finish appearance and film thickness
- proper track alignment
- proper lateral and vertical door alignment
- proper latching and release
- proper operation of the door checks or brakes
- proper installation of all interior trim, labels, weatherstripping, and fasteners
- proper installation of wiring and electrical connectors
- proper operation of the electrical accessories, such as interior lighting, door ajar warning lamp or alarm, latch release, and security system, as applicable
- proper operation of door glass and door locks
- proper weatherstrip sealing

Correct any defects.