



MG51

T-Top/Removable

**Uniform
Procedures For
Collision Repair
UPCR**

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v.4.0



1. Description

This procedure describes replacement, inspection, and testing requirements for removable T-top glass units. Methods for correcting air and water leaks are also included.



2. Purpose

The purpose of this procedure is to provide industry-accepted requirements for performing high-quality replacement of removable T-top glass units. 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

- HM01 Hazardous Materials
- PS01 Personnel Safety
- RF01P Surface Preparation
- RF01S Surface Preparation

3.2 Other Information

- National Auto Glass specifications
- Product-specific information
- Recycled parts information
- Vehicle-specific repair information

Note: The National Glass Association (NGA) acknowledges the role of both the vehicle and adhesive makers in the replacement of glass parts. At times, their published replacement procedures may conflict.

The NGA does not warrant published adhesive procedures by either the vehicle or adhesive maker, but acknowledges the validity of both in the replacement of vehicle glass. It is the responsibility of the business owner and installing technician to determine applicability of published information to the installation and business environment.



4. Equipment And Material Requirements

4.1 Equipment

The use of this equipment is included in this procedure:

- finger rack
- caulking gun
- electronic leak detector
- portable glass stand
- vacuum or suction cups

4.2 Power Tools

The use of these power tools is included in this procedure:

- drill
- vacuum cleaner
- heat gun

4.3 Materials

The use of these materials is included in this procedure:

- adhesives and primers
- glass cleaners
- clips and fasteners
- lubricants
- protective covers
- razor blades
- sealants
- weatherstripping



5. Damage Analysis

5.1 Glass

Inspect the glass for these types of damage:

- visible damage
- improper previous installation
- proper operation of the locking mechanism

Plan to adjust or replace the glass if any of these conditions is present.

5.2 Roof Mounting Area

Inspect the roof mounting area for these conditions:

- visible damage
- corrosion
- improper previous repairs

5.3 Mounting Hardware

Inspect mounting hardware such as latching or locking mechanisms, moldings, weatherstrips, etc. Determine if the parts will be replaced or reused. Verify the availability of replacement parts.

5.4 Adjacent Areas

Inspect adjacent areas, such as body panels, headliner, seats, electrical wiring, etc. for damage and proper operation. Determine if the parts can be repaired, replaced, or reused. Verify the availability of replacement parts.



6. Personnel Safety

6.1 General Safety

General safety information is in **PS01**.

6.2 Glass Safety

To avoid injury when handling glass, follow these safety precautions:

- Wear the appropriate eye and hand protection.
- Inspect the edges for slivers and rough or sharp edges before handling.
- Never carry glass under your arm or over your head. Hold the glass with palms outward so that it can only fall away from you. Keep your pathway free of obstacles.
- When carrying glass with vacuum cups, stay on the side with the vacuum cups. Keep vacuum cups clean.



7. Environmental Safety

Hazardous material safety information is in **HM01**.



8. Vehicle Protection

8.1 Adjacent Surfaces

To protect the glass, fasteners and adjacent surfaces when replacing removable T-tops:

- Place protective coverings around the work area, including the roof, instrument panel, carpet, seats, etc.
- Remove any jewelry, belt buckles which may cause damage to the vehicle.

8.2 Electronic Parts

- Ensure that the ignition switch is in the LOCK position, and the key is removed.
- 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.



9. Replacement Procedure

Plan the replacement based upon the fastener design, molding type, hardware and trim accessibility, etc.

9.1 T-Top Glass Replacement

To replace a removable T-top glass:

- 1. Remove the T-top from the vehicle.
- 2. Repair any damage to the roof panel and mounting areas.
- 3. Transfer any necessary hardware and trim from the original unit to the replacement. Follow the vehicle maker's torque specifications for all fasteners.
- 4. Install the replacement top and adjust for a water-tight fit and flush mounting.
- 5. Check the installation for water and air leaks. See **11.2** and **11.3**.
- 6. Continue vehicle reassembly.



10. Use Of Recycled (Salvage) Parts

10.1 Condition Of Salvage Parts

Do not install salvage mounting hardware or moldings having visible damage or corrosion:

- distortion
- deterioration

Do not install salvage glass parts having any of these conditions:

- visible damage
- improper tint or shade
- optical distortion



11. Inspection And Testing

11.1 Appearance And Performance

Inspect replaced T-top assemblies for these conditions:

- pits or scratches in the glass
- optical distortion
- improper tint and shade
- improper alignment
- improper operation of the latching mechanism

Correct any defects.

11.2 Water-Leak Test

- 1. Protect the vehicle interior.
- 2. Apply water at low pressure around the perimeter of the unit from outside of the vehicle.
- 3. Look for water leaks on the inside.

Correct any water leaks by adjusting the T-top and repeat the test.

11.3 Air-Leak Tests

To test for air leaks using compressed air:

- 1. Apply a mixture of liquid soap and water, or foam glass cleaner around the perimeter of the glass and gasket, from outside of the vehicle.
- 2. Use a NIOSH-approved air nozzle to apply compressed air around the perimeter of the glass and gasket from inside the vehicle.

Note: Bubbles appearing on the outside indicate leak areas.

To test for air leaks using internal pressure:

- 1. Close all windows.
- 2. Cover air exhausts or pressure-relief vents with masking tape.
- 3. Set the heater or air conditioner to the highest fan speed.
- 4. Start the engine to move any vacuum-operated air doors into position.
- 5. Turn the ignition to ACCESSORY to keep the blower running while the engine is shut off.
- 6. Close the doors and allow the pressure to build up.
- 7. Slowly feel around the perimeter of the glass for air leaks outside the vehicle. A short length of hose or a stethoscope can be used to listen for leaks.
- 8. Mark any locations where air is escaping.
- 9. Uncover the relief vents.

(cont'd)



11. Inspection And Testing (cont'd)

To test for air leaks using an ultrasonic leak detector:

- 1. Place the signal transmitter inside the closed vehicle.
- 2. Use the detecting unit to probe around the perimeter of the glass and gasket on the outside of the vehicle.
- 3. Mark any locations where leaks are detected by the probe.

Correct any air leaks by adjusting the T-top at the leak area, and repeat the test.