



# SG11

## Gasket-Mounted

**Uniform  
Procedures For  
Collision Repair  
UPCR**

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v.4.0



### 1. Description

This procedure describes replacement, inspection, and testing requirements for gasket-mounted stationary glass. 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 gasket-mounted stationary glass. 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
- HM01 Hazardous Materials
- PS01 Personnel Safety
- RF01P Surface Preparation
- RF01S Surface Preparation
- RF41 Finish Application

### 3.2 Other Information

- Equipment-specific information
- Motor Vehicle Safety Standards
- National Auto Glass specifications
- Product-specific information
- Recycled parts information
- Vehicle-specific repair information

Note: The National Glass Association (NGA) acknowledges both the role of 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 the 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:

- caulking gun
- cutout knife (cold knife)
- finger rack
- glass cutters
- glass pliers
- glass stand
- hook tool
- lacing tool
- long-reach utility knife
- molding release tool
- plastic paddles
- vacuum or suction cups
- weatherstrip closing tool
- approved air nozzle
- electronic leak detector

### 4.2 Power Tools

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

- belt sander
- drill
- caulking gun
- vacuum cleaner

### 4.3 Materials

The use of these materials is included in this procedure:

- adhesives and primers
- clips and fasteners
- lubricants
- glass cleaners
- leak-trace powder



## 5. Damage Analysis

### 5.1 Glass

Inspect the glass for these conditions:

- visible damage
- damaged integrated radio antenna
- damaged defroster grid
- delamination
- optical distortion
- improper tint or shade
- improper previous installation

Plan to reinstall or replace the glass if any of these conditions are present.

### 5.2 Gasket

Inspect the gasket for these conditions:

- visible damage
- improper previous installation
- improper installation of trim and moldings
- distortion
- deterioration

Plan to replace the gasket if it is damaged.

### 5.3 Pinchweld

Inspect the pinchweld area for these conditions:

- visible damage
- corrosion
- paint failure
- improper previous repairs

It may not be possible to do a complete inspection of the pinchweld until the damaged glass has been removed.

All above-mentioned conditions must be corrected before installing the replacement glass.

### 5.4 Mounting Hardware

Inspect mounting hardware, such as clips, moldings, etc. Determine if the parts will be replaced or reused.

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## 5. Damage Analysis (cont'd)

### 5.5 Adjacent Areas

Inspect the operation and condition of adjacent areas, such as instrument panels, body panels, seats, wiper arms and blades, antennas, electrical wiring, etc. Determine if the parts will be repaired, replaced, or reused.



## 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 gasket, glass, and adjacent surfaces when replacing gasket-mounted stationary glass:

- Place protective coverings around the work area, such as on the fenders, hood, roof, instrument panel, air ducts, floor, seats, etc.
- Remove any jewelry or belt buckles which may cause damage to the vehicle or glass.
- Lubricate the gasket, if necessary, with clean water only.



## 9. Replacement Procedure

Plan the replacement based upon gasket design, type of molding, hardware and trim accessibility, use of adhesives, etc.

On a gasket-set windshield, urethane adhesive may be used as a sealant. However, vehicles with gasket-set windshields do not meet federal safety standards structurally, without the use of adhesives.

For replacing the glass and gasket as an assembly, see **9.1**. For replacing the glass and gasket separately, see **9.2**. For replacing only the glass, using the three-sided method, see **9.3**.

### 9.1 Glass And Gasket Assembly Replacement

To replace the glass and gasket as an assembly:

1. Remove or reposition parts, as necessary to gain access to the glass parts, and to prevent damage.
2. Remove the moldings, if applicable, using the proper tool. Set them aside for reinstallation. If the molding is interlocked with the gasket, replace the molding, gasket, and glass as an assembly.
3. Tape off the defroster vents to prevent glass and adhesive from entering.
4. Break the seal between the gasket and the vehicle body, using the proper tool. It may be necessary to cut the gasket from the glass and install a replacement gasket, if the glass is to be reused.
5. Remove any laminated glass, or unbroken tempered glass, by releasing the inner lip of the gasket from the pinchweld while applying pressure to the glass from the inside. Note: This procedure may be reversed (releasing from outside of the vehicle) in busses and some older vehicles. If a broken tempered part is being replaced, remove the gasket from the pinchweld from outside of the vehicle.
6. Lift the glass and gasket assembly from the vehicle.
7. Remove the gasket from the glass. If the glass is to be reused, store it properly to prevent damage. If the glass is being replaced, remove any parts, labels, stickers, etc., if possible, for later transfer.
8. Use a dry brush to clean the pinchweld thoroughly to remove loose adhesive, dirt, glass fragments, corrosion, etc.
9. Repair any damage to the pinchweld, and refinish as necessary, following the vehicle maker's recommendations. Do not apply body fillers to the pinchweld where glass will be installed.
10. Remove any adhesive and primer from the glass assembly.
11. Clean the replacement glass and gasket thoroughly, removing any grease, wax, etc.
12. Replace any missing parts, such as electrical connectors, etc. Make sure there is no remaining adhesive or primer on the glass.
13. Vacuum the repair area thoroughly, if required to remove all traces of adhesive or glass.
14. Apply primer to the pinchweld, gasket, and glass, following the adhesive maker's recommendations. Remove excess primer from the pinchweld and glass.

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## 9. Replacement Procedure (cont'd)

- ❑ 15. With the glass laying on a flat surface, apply a bead of adhesive, if applicable, into the glass channel of the gasket, and attach the gasket to the glass edge.
- ❑ 16. Insert a rope into the pinchweld channel of the gasket, using the proper tools.  
Note: Some moldings must be installed before the glass and gasket assembly is installed on the vehicle.
- ❑ 17. Apply a thin bead of adhesive to the edge of the gasket that will make contact with the outer surface of the pinchweld.
- ❑ 18. Install the glass and gasket assembly into the pinchweld opening. Apply even pressure to the glass while pulling the rope parallel to the glass, towards the center of the glass to set the glass fully in place.
- ❑ 19. Install the moldings, if applicable.
- ❑ 20. Clean any excess adhesive from the glass or surrounding area.
- ❑ 21. Reinstall any parts previously removed or repositioned, duplicating the original mounting methods.
- ❑ 22. Check the installation for water and air leakage. See **11.2** and **11.3**.
- ❑ 23. Transfer any previously removed parts, labels, stickers, etc. Give the vehicle owner a list of any items that could not be transferred.

### 9.2 Replacing The Gasket And Glass Separately

To replace the glass and gasket separately:

- ❑ 1. Remove or reposition parts to gain access to the glass parts, and to prevent damage.
- ❑ 2. Remove moldings, if applicable, using the proper tool and set aside for reinstallation. If the molding is interlocked with the gasket, replace the molding, gasket, and glass as an assembly. See **9.1**.
- ❑ 3. Release the gasket, using the proper tool. If a filler strip is removed, set it aside for reinstallation.
- ❑ 4. Break the seal between the gasket and the glass from both inside and outside the vehicle, using the proper tool.
- ❑ 5. Remove any laminated glass, or unbroken tempered glass, by starting at the corner with the largest radius. Release the exterior lip of the gasket from the glass, while applying pressure to the glass from the inside. Note: This procedure may be reversed (released from outside of the vehicle) in busses and older vehicles.
- ❑ 6. Remove any remaining broken glass, adhesive, dirt, etc. from the gasket groove.
- ❑ 7. Lift the glass from the gasket. If the glass is to be reused, store it properly to prevent damage. If the glass is being replaced, remove any parts, labels, stickers, etc., if possible, for later transfer.
- ❑ 8. Remove the gasket, if it is to be replaced.
- ❑ 9. Use a dry brush to clean the pinchweld and any remaining adhesive thoroughly to remove loose adhesive, dirt, glass fragments, corrosion, etc.
- ❑ 10. Repair any damage to the pinchweld, and refinish as necessary, following the vehicle maker's recommendations. Do not apply body fillers to the pinchweld where glass will be installed.

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## 9. Replacement Procedure (cont'd)

- 11. Remove any adhesive and primers from the glass assembly.
- 12. Clean the replacement glass and gasket thoroughly, removing any grease, wax, etc. Make sure there is no remaining adhesive or primer on the glass.
- 13. Apply adhesive primer to the pinchweld, gasket, and glass, following the vehicle and adhesive makers' recommendations. Remove excess primer from the pinchweld and glass.
- 14. Apply a thin bead of adhesive in the gasket channel that contacts the pinchweld.
- 15. Install the gasket onto the pinchweld.
- 16. Apply adhesive between the gasket and the glass, before installing the glass into the gasket, following the vehicle maker's recommendations.
- 17. Reinstall the filler strip or close the self-locking gasket, if applicable.
- 18. Replace moldings, if applicable, using the proper tool.
- 19. Clean any excess adhesive from the glass or surrounding area.
- 20. Reinstall any parts previously removed or repositioned, duplicating the original mounting methods.
- 21. Check the installation for water and air leakage. See **11.2** and **11.3**.
- 22. Transfer any previously removed parts, labels, stickers, etc. Give the vehicle owner a list of any items that could not be transferred.

### 9.3 Glass Replacement—Three-Sided Method

To replace the glass using the three-sided method:

- 1. Remove or reposition parts to gain access to the glass parts, and to prevent damage.
- 2. Remove moldings, if applicable, using the proper tool, and set aside for reinstallation. If the molding is interlocked with the gasket, replace the molding, gasket, and glass as an assembly. See **9.1**.
- 3. Break the seal between the gasket and the vehicle body, around the sides and top, using the proper tool.  
Note: It may be necessary to cut the gasket from the glass and use a replacement gasket. If the glass part is to be saved for reuse, see **9.2**.
- 4. Remove any laminated glass, or unbroken tempered glass by releasing the inner lip of the gasket from the top and sides of the pinchweld, while applying pressure to the top of the glass from the inside. Leave the bottom of the gasket attached to the pinchweld.
- 5. Separate the gasket from the glass.
- 6. Lift the glass from the vehicle, leaving the bottom of the gasket bonded to the vehicle body, and the top and sides of the gasket laying inside the vehicle. If the glass is to be reused, store it properly to prevent damage. If the glass is being replaced, remove any parts, labels, stickers, etc., if possible, for later transfer.
- 7. Clean the pinchweld thoroughly to remove adhesive, dirt, glass fragments, corrosion, etc.
- 8. Repair any damage to the pinchweld, and refinish as necessary, following the vehicle maker's recommendations.

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## 9. Replacement Procedure (cont'd)

- 9. Clean the gasket and replacement glass thoroughly, removing grease, wax, etc. Follow the adhesive maker's recommendation for the type of cleaner. Replace any missing parts, such as electrical connectors, etc.
- 10. Vacuum the repair area thoroughly, if required to remove all traces of adhesive or glass.
- 11. Prime the gasket and glass, if required.
- 12. Apply a thin bead of adhesive to the lower half of the gasket that is still attached to the vehicle.
- 13. Install the glass in the lower part of the gasket that is still attached to the vehicle.
- 14. Apply a thin bead of adhesive along the sides and top of the gasket, in the channel (Toyota) that contacts the glass.
- 15. Pull the top and sides of the gasket over the edges of the glass.
- 16. Apply a thin bead of adhesive between the gasket and the pinchweld, around the sides and top.
- 17. Press the glass, with the gasket attached to the upper half, into the pinchweld opening. Lip the gasket around the pinchweld on the sides and top. Note: Some moldings may have to be installed before the gasket is lipped onto the body.
- 18. Replace the moldings, if applicable.
- 19. Clean any excess adhesive from the glass and surrounding area. Follow the adhesive maker's recommendation for the type of cleaner.
- 20. Reinstall any parts previously removed or repositioned, duplicating the original mounting methods.
- 21. Check the installation for water and air leakage. See **11.2** and **11.3**.
- 22. Transfer any previously removed parts, labels, stickers, etc. Give the vehicle owner a list of any items that could not be transferred.



## 10. Use Of Recycled (Salvage) Parts

### 10.1 Condition Of Salvage Parts

Do not install salvage gaskets or moldings having any of these conditions:

- visible damage
- distortion
- deterioration

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

- visible damage
- optical distortion
- delamination
- improper tint or shade

All adhesive primer must be removed from glass parts before installation.



## 11. Inspection And Testing

### 11.1 Appearance And Performance

Inspect replaced glass for these conditions:

- optical distortion
- pits or scratches
- improper tint or shade
- VIN notch improperly positioned
- delamination

Correct any defects.

### 11.2 Water-Leak Test

To test for water leaks:

1. Protect the vehicle interior.
2. Apply water at low pressure around the perimeter of the glass from the outside of the vehicle, starting at the bottom and working up.
3. Look for water dripping in the interior.

Correct any water leaks, and repeat the test.

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## 11. Inspection And Testing (cont'd)

### 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 the vehicle. A leak-trace powder may also be used.
- 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 or powder movement 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 switch 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 and gasket for air leaks outside the vehicle. A short length of hose or a stethoscope may be used to listen for leaks.
- 8. Mark any locations where air is escaping.
- 9. Uncover the relief vents.

To test for air leaks using an ultrasonic leak detector:

- 1. Place the signal generator unit 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 a leak is detected by the probe.

Correct any air leaks, and repeat the test.