

Waterleaks

Specifications

Recommended Materials (Waterleak Repair)

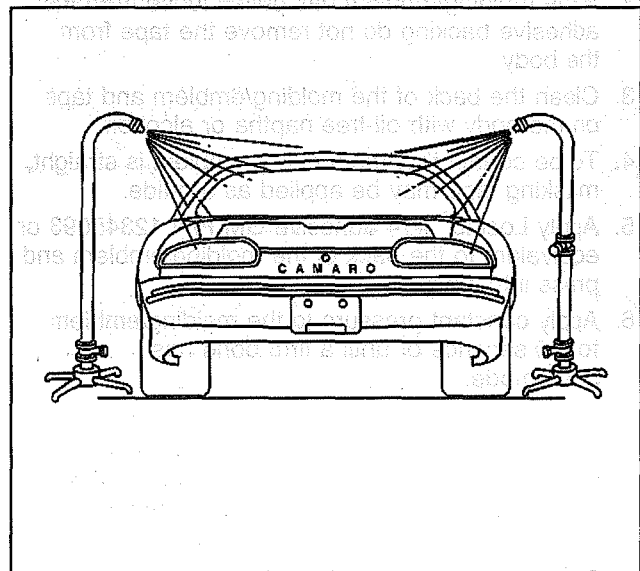
Leak Area	Repair Material(s)
Bolts, Studs, Screws, and other Transition Areas	Strip Caulk/3M Thumb Grade Sealer 08578
Cracks and Holes (General, Large)	3M All Around Autobody Sealant 8500
Cracks and Holes (General, Small)	3M Drip-Chek Sealer
Drip Moldings	3M Auto Bedding and Glazing Compound
Joints (Metal)	Brushable/Paintable Seam Sealer
Rear Window	Urethane Adhesive Caulking Kit GM P/N 12346284
Ventilation Ducts	3M Auto Bedding and Glazing Compound
Weatherstrip Retainers	Foam Tape
Windshield	Urethane Adhesive Caulking Kit GM P/N 12346284

Diagnostic Information and Procedures

Body Waterleak Repair

- GM vehicles are designed to operate under normal environmental conditions.
- The design criteria for sealing materials and components takes into consideration the sealing forces required to withstand the natural elements. These specifications cannot take into consideration all artificial conditions such as high pressure car washes.
- The water leak test procedure has been correlated to the natural elements and will determine the ability of a vehicle to perform under normal operating conditions.
- The first step in diagnosing a leak is determining the conditions under which a leak occurs. If the general leak area can be found, the exact entry point can be isolated using a water hose or air hose. Some trim panels or components may need to be removed in order to repair the leak.
- A leak around a door, a rear lift window, or a roof lift off panel does not necessarily indicate a bad weatherstrip. An adjustment of a door, a door window, a rear lift window panel, or a roof lift off panel, may resolve the condition.

Waterleak Test Preparation

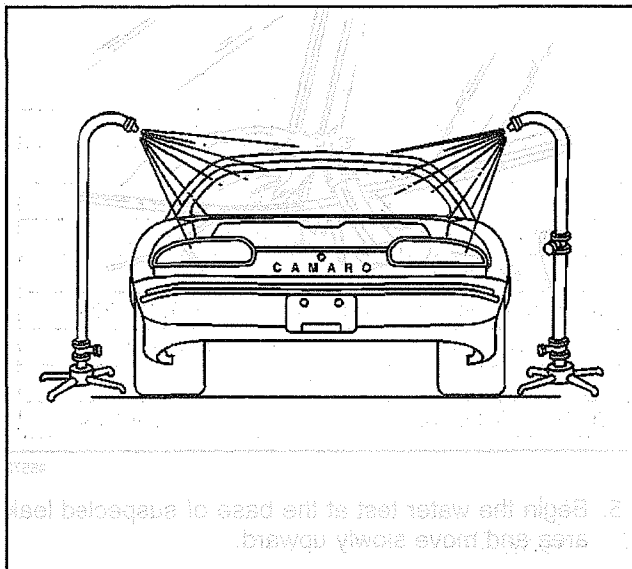


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1. Park the vehicle on a flat surface.
2. Inspect the fit of the door glass to the weatherstrips.
3. Inspect the fit of the removable roof panel, if equipped to the body.
4. Inspect the fit of the convertible top, if equipped to the body.
5. Inspect the joint of the roof side weatherstrip to the A-pillar and the B-pillar weatherstrip.
6. Inspect the windshield weatherstrip.
7. Perform a generalized water test using a test stand this is necessary to determine where to preform a localized test.

Repair Instructions

Generalized Testing



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If the leak source is not obvious the generalized test method using water test stands should be used. Once the general leak area is located one of the localized test procedures can be used to pin point the leak. Refer to *Localized Testing (Spot Testing)*, *Water Hose Test* or *Air Hose Test*.

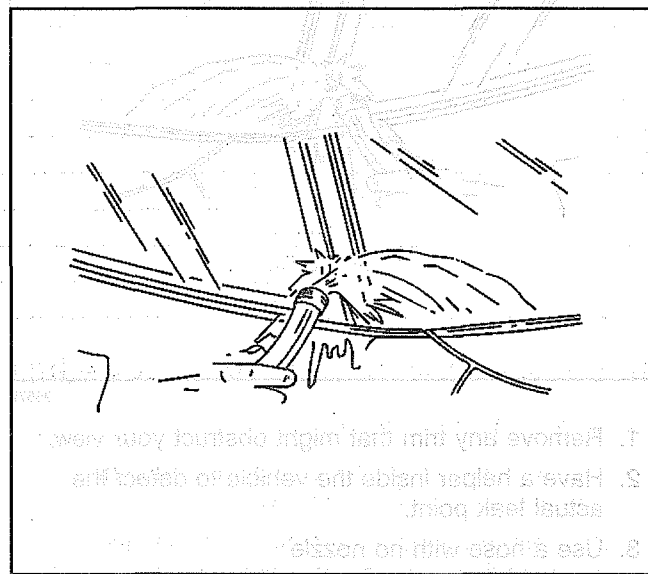
1. Submit the vehicle to a water spray of 155 kPa (22 psi) for 10 to 20 minutes.
2. When testing the windshield seal, tape off the weatherstrip, sealing the front of the roof lift off panel or convertible top, and set the stands so the nozzles point approximately 30 degrees down and 45 degrees toward the rear of the vehicle.
3. When testing the windshield header and front body pillar weatherstrips set the stands so the nozzles point approximately 30 degrees down and 45 degrees toward the rear of the vehicle.
4. When testing the side of the vehicle set the stands so the nozzles point approximately 30 degrees down and 45 degrees toward the rear of the vehicle.
5. When testing the rear window and rear compartment lid set the stands 600 mm (24 in) from the corner of the rear window with the nozzles pointing approximately 30 degrees down and 30 degrees toward the front of the vehicle.

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Diagnostic Information and Procedures

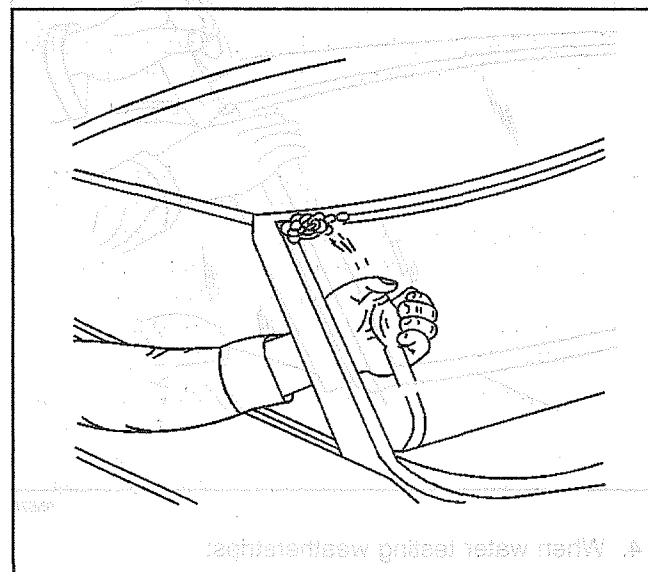
Localized Testing (Spot Testing)

Localized testing may be done either using water or air.



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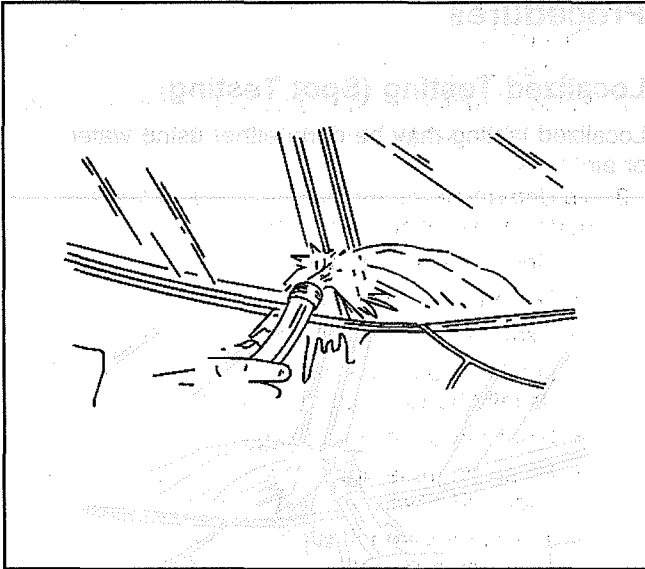
1. Begin the test at the base of the suspected area and continue up slowly until the leak is located.



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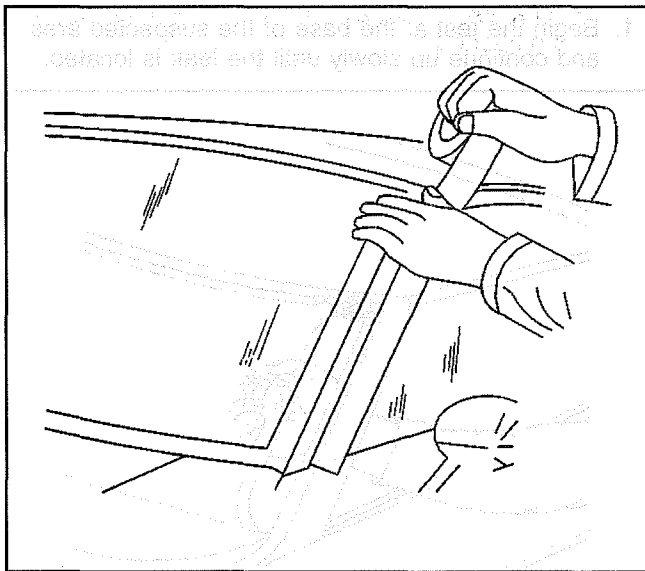
2. Pinpoint the leak area before any repair is made. Random repair may only temporarily restrict water entry and make future diagnosis and repair more difficult.
3. Continue localized testing in the same general area in order to confirm that all of the leaks have been located.

Water Hose Test



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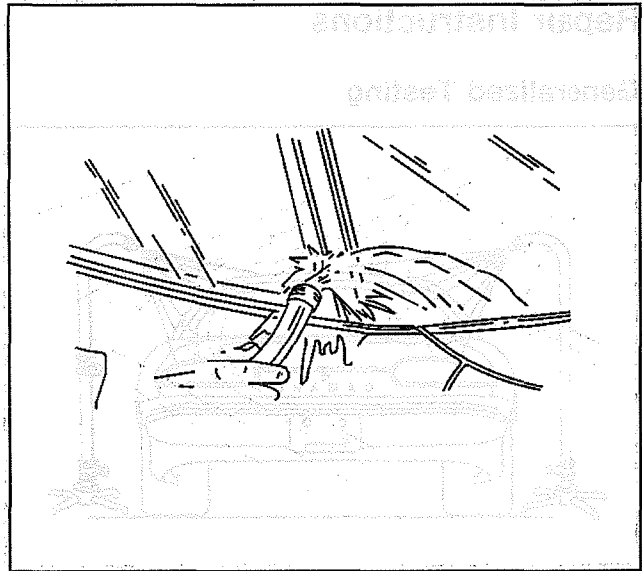
1. Remove any trim that might obstruct your view.
2. Have a helper inside the vehicle to detect the actual leak point.
3. Use a hose with no nozzle (unrestricted water flow).



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4. When water testing weatherstrips:

- Aim the water so that the water falls only on the window side or only on the body panel side of a weatherstrip, or tape across the weatherstrip between the body panel and the weatherstrip.
- Remove the tape and test again. This will help in determining whether the leak is between the weatherstrip and the window or between the weatherstrip and the retainer.

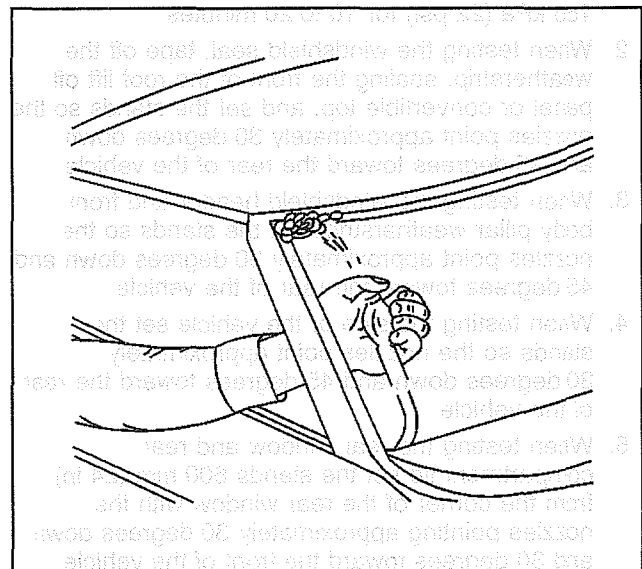


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5. Begin the water test at the base of suspected leak area and move slowly upward.
6. Mark the location of the leak.

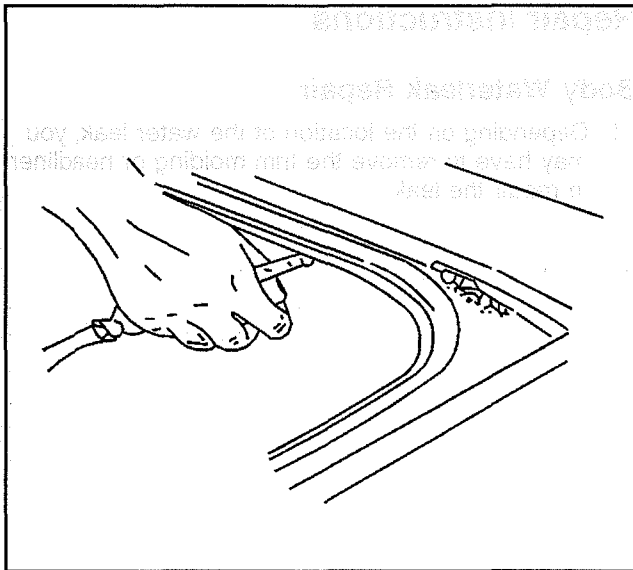
Air Hose Test

Notice: The air hose test should only be used on fully cured urethane adhesive. Otherwise, damage to the urethane adhesive bead could result in additional leaks.



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1. Apply soapy water to the outside of the suspected leak area.
2. Apply air pressure using an air hose from inside of the vehicle.
 - Do not exceed 205 kPa (30 psi) of air pressure.
 - Do not apply air pressure unless the urethane has completely cured.



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3. Watch for bubbles on the outside of the vehicle at the suspected leak area.
4. Mark the leak area.

Dust Leaks

1. Dust will leak into the vehicle where water will not.

This particularly happens in the lower portion of the vehicle's interior.

2. Forward motion of the vehicle can create a slight vacuum which pulls air and dust inside the vehicle.
3. To determine the location of the dust leaks, perform the following steps:

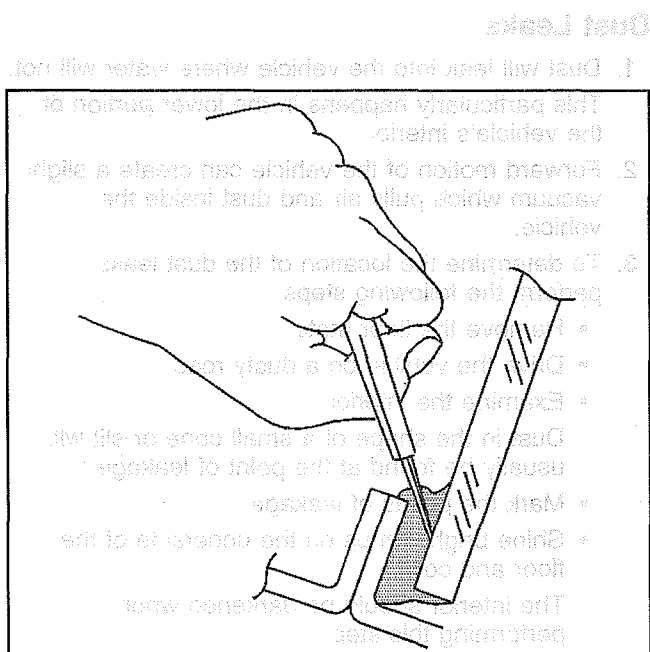
- Remove the floor mats.
- Drive the vehicle on a dusty road.
- Examine the interior.

Dust in the shape of a small cone or slit will usually be found at the point of leakage.

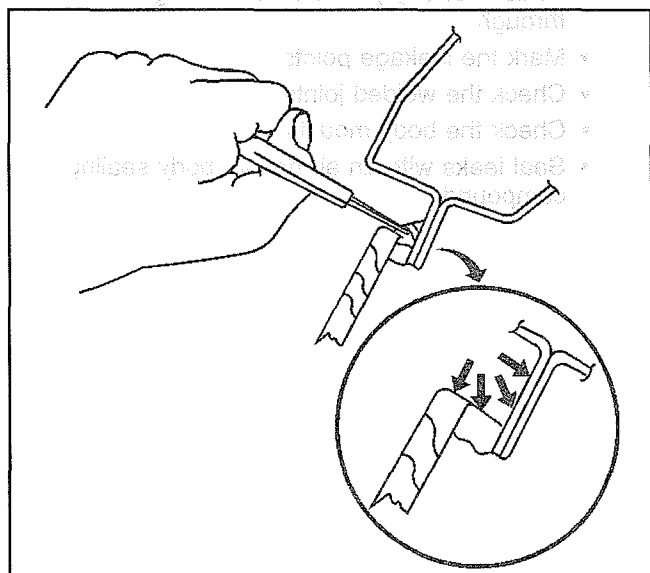
- Mark the points of leakage.
- Shine bright lamps on the underside of the floor and cowl.

The interior should be darkened when performing this step.

- Have an assistant check the inside of the vehicle for any points where the light shines through.
- Mark the leakage points.
- Check the welded joints.
- Check the body mounts.
- Seal leaks with an air drying, body sealing compound.



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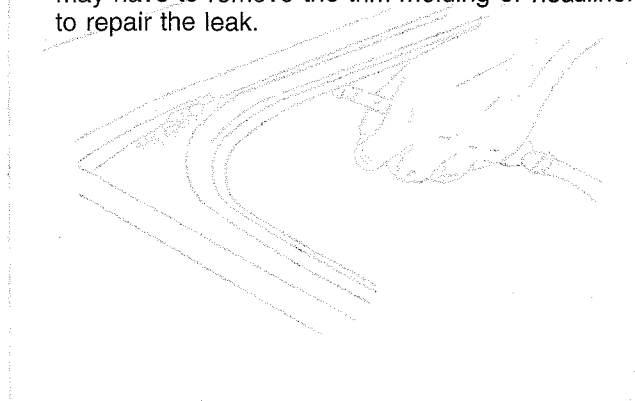


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Repair Instructions

Body Waterleak Repair

1. Depending on the location of the water leak, you may have to remove the trim molding or headliner to repair the leak.



3. Watch for bubbles on the outside of the vehicle at the suspected leak area.

2. Cut out a portion of the adhesive in the leak area from inside or outside the vehicle.
3. Clean and remove all loose particles from the area.
4. Caulk the adhesive between the window and the pinchweld flange where the old adhesive has been cut away.

Feather the adhesive out to several inches past the leak area. Use urethane adhesive from GM P/N 12346284 or equivalent.

5. Mist the newly applied adhesive with water to cure the adhesive.
6. Test for leaks.
7. Install the molding(s).
8. Allow the adhesive to dry for several hours.
9. Test for water leaks. Refer to the appropriate procedure from the following list:
 - *Waterleak Test Preparation*
 - *Water Hose Test*
 - *Air Hose Test*

Weatherstrip Waterleak Repair

Removal Procedure

Before removing the weatherstrip attempt to repair the water leak by adjusting or shimming, the weatherstrip, door, door glass, folding top, or the panel.

If the weatherstrip is removed the weatherstrip should be replaced.

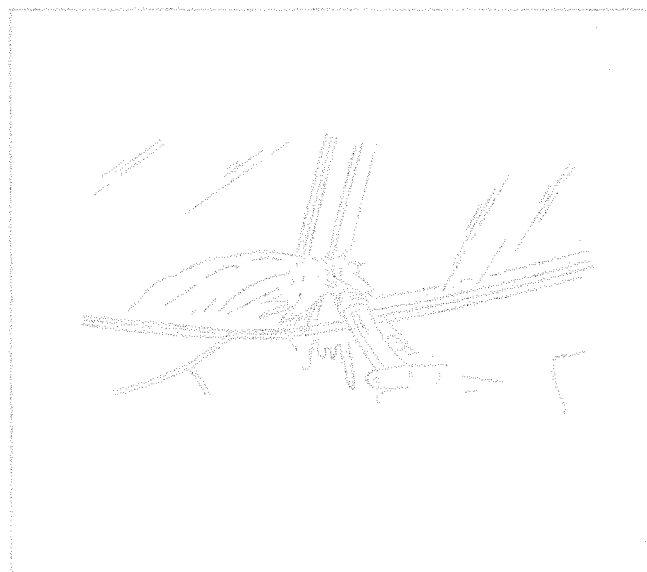
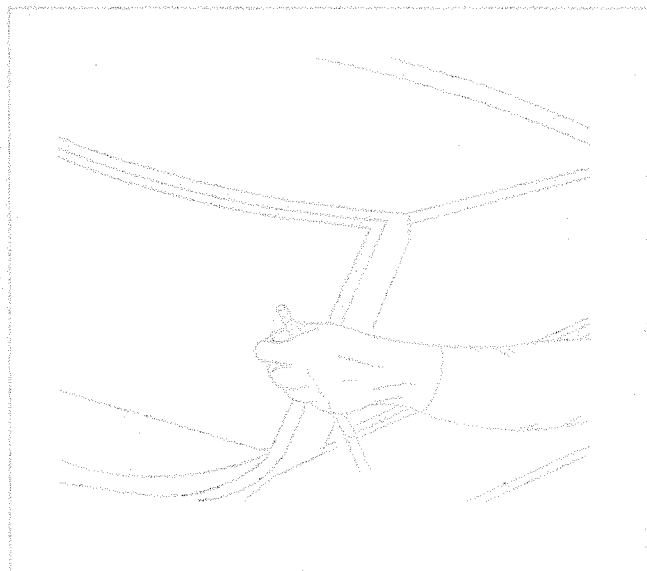
1. Pull the weatherstrip from the retainer while cutting through the adhesive with a spatula.
 - Most weatherstrips are bonded to the retainers with adhesive.
 - Try not to tear the weatherstrip, keeping the weatherstrip intact aids in removal.
2. Remove all the old adhesive from the retainer or remove the retainer.

Important: Most retainers are backed with foam sealing tape. To avoid scratching an acrylic roof panel do not use a scraper to remove the foam sealing tape adhesive from the panel.

3. If a weatherstrip retainer is removed, remove all the old foam sealing tape and adhesive from the mating surface.
4. Remove any broken screws.

Installation Procedure

1. Install the retainer, if removed.
 - Insure the retainer is backed with foam sealing tape, if required.
 - Replace any stripped screws.
 - Lubricate the screws before installation to prevent breaking the screws.
2. Apply a continuous 3 mm (0.125 in) bead of weatherstrip adhesive inside the center of the weatherstrip retainer. Apply an extra amount at each end of the retainer.
3. Install the weatherstrip using a nylon spatula.
4. Finesse the weatherstrip at the joints to ensure a proper fit. Use thump grade sealer as necessary.
5. Allow the adhesive to cure before rechecking for water leaks.

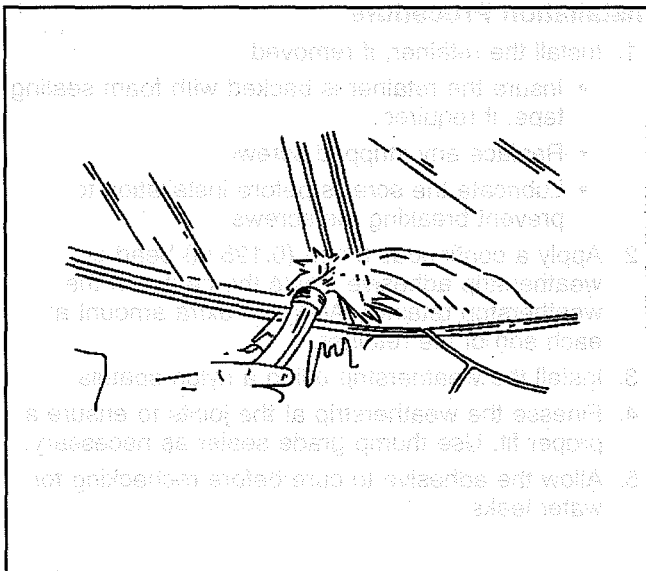


Stationary Window Waterleak Repair

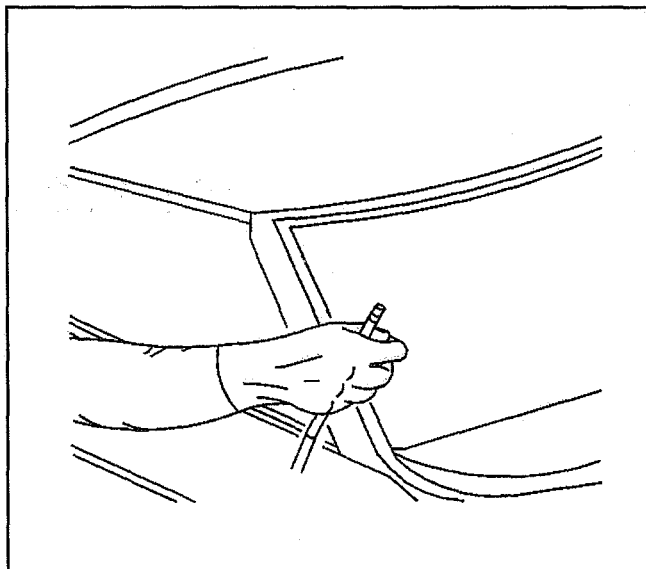
Tools Required

- Adhesive Kit GM P/N 12346284
- Air Hose
- Water hose without a nozzle

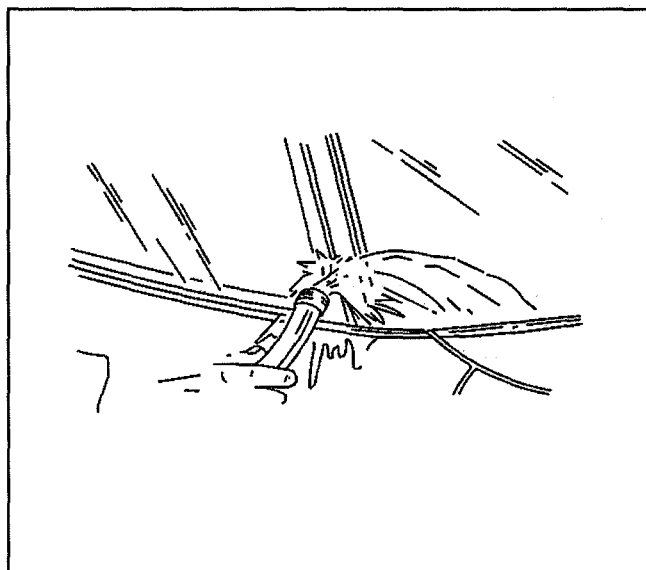
1. Remove the window garnish moldings if area of leak is hidden. Refer to *Windshield Side Garnish Molding Replacement (W/O Lift Off Window Panels)* or *Windshield Side Garnish Molding Replacement (W/ Lift Off Window Panels)* in Stationary Windows.
2. Remove any auxiliary seal or reveal moldings, if necessary to uncover the urethane seal.
3. Apply a small stream of water while carefully pushing outward on the window in the area of the leak.
4. Mark the extent of the leak area.
5. Using a sharp knife, trim off any uneven edges of urethane material at the leak point 75-100 mm (3-4 in) on each side of the leak point.
6. Clean away any dirt from the leak area with water.
7. Dry the leak area with an air hose.
8. Prime the leak area with black primer #2 from the adhesive kit.
9. Allow the primer to dry for 5 minutes.
10. Apply new urethane to the area trimmed away.
11. Work the new urethane into the trimmed area using a flat-bladed tool.
12. Water test the original leak area.
13. Continue to work the adhesive into the leak area or apply additional adhesive as needed.
14. Install the window garnish moldings. Refer to *Windshield Side Garnish Molding Replacement (W/O Lift Off Window Panels)* or *Windshield Side Garnish Molding Replacement (W/ Lift Off Window Panels)* in Stationary Windows.



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