

2006 Chevrolet HHR LT

2006 GENERAL INFORMATION Water Leaks - HHR

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DIAGNOSTIC INFORMATION AND PROCEDURES

WATER LEAK TEST PREPARATION

Saturn vehicles are designed to operate under normal environmental conditions. The design criteria for sealing materials and components take into consideration the sealing forces required to withstand the natural elements. These specifications do not, and cannot, take into consideration all artificial conditions such as what may be encountered in some high pressure car washes.

The water test procedure has been designed to simulate natural elements and will determine the ability of a vehicle to perform under normal operating conditions.

Repairing body water leaks consists of proper testing, diagnosis, and repair through the adjustment of misaligned components and/or the application of proven repair materials. The first step in water leak diagnosis is finding the conditions under which the leak occurs, for example, a leak noticed only when parked on an inclined drive or water in the spare tire compartment.

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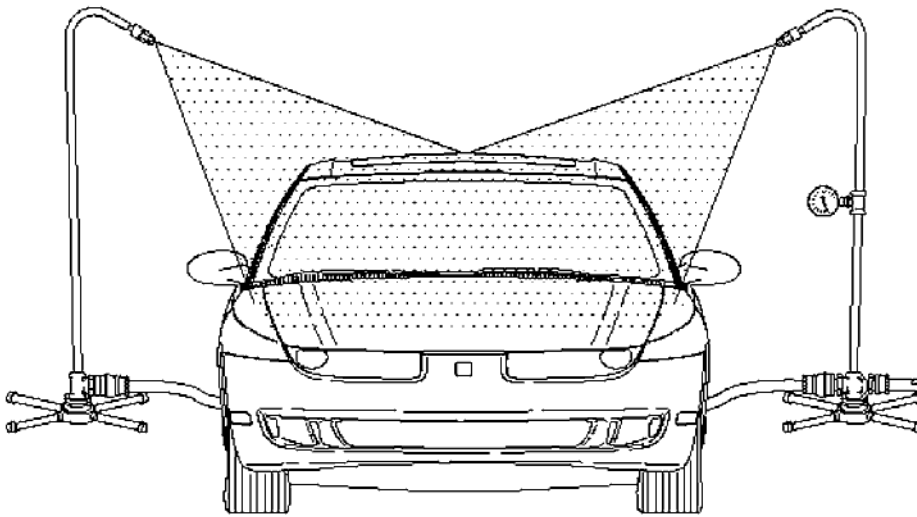


Fig. 1: Water Leak Test
Courtesy of GENERAL MOTORS CORP.

If the general leak area cannot be found, the exact entry point can be quickly isolated by use of a localized test such as a water hose or air hose. If the leak source is not obvious, the generalized testing method using water test equipment such as the water test stands shown should be used. It may be necessary to remove some interior trim panels or components to locate the leak and confirm repairs.

Generalized Testing

Generalized water testing involves flooding the exterior surface of the vehicle with water and observing the interior of the vehicle to determine where water entry occurs. It may be necessary to remove the interior trim components to observe water entry. Once the general area of the leak is determined, move on to localized testing to locate the specific leak area.

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Water Test Stand Specifications

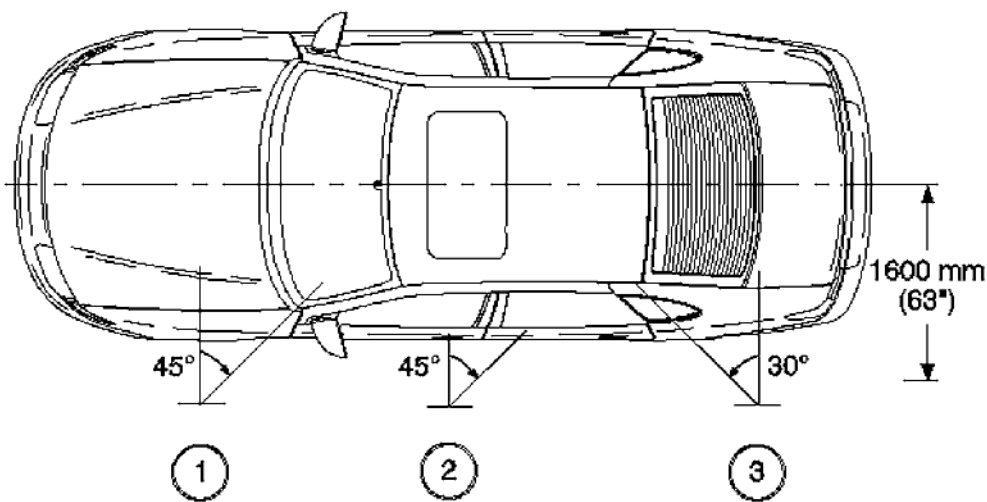


Fig. 2: Water Test Stand
Courtesy of GENERAL MOTORS CORP.

- Type of nozzle - Full cone spray with 60 included angle - Full jet spray nozzle no. 1/2 GG-25, or equivalent
- Nozzle height - Approximately 1600 mm (63 in) from the floor
- Volume of flow - 14 liters (3.7 gallons) per minute
- Pressure - 155 kPa (22 psi) measured at the nozzle
- Windshield and front body pillar (1) - Approximately 30 degrees down, 45 degrees towards the rear and aimed at the corner of the windshield
- Side (2) - Approximately 30 degrees down, 45 degrees towards the rear and aimed at the center of the rear door or rear quarter

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- Back window and rear compartment lid (3) - Approximately 30 degrees down, 30 degrees towards the front and aimed approximately 600 mm (24 in) from the corner of the back window

DUST LEAKS

Dust may leak into the vehicle where water will not. This happens particularly in the lower portion of the interior.

Forward motion of the vehicle can create a slight vacuum which pulls air and dust into the vehicle.

In order to determine the location of dust leaks, perform the following steps:

1. Remove the mats from the floor.
2. Remove the mats from the kick panel.
3. Remove the insulation from the floor.
4. Remove the insulation from the kick panel.
5. Drive the vehicle on a dusty road.
6. Examine the interior.

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

7. Mark the points of leakage.

IMPORTANT: Ensure that the interior is darkened when performing this step.

8. Shine bright lamps on the underside of the floor and the cowl.
9. Have an assistant mark any points inside of the vehicle for any points where the light shines through.
 - Inspect the weld joints.
 - Inspect the body mounts.
10. Seal any leaks with an air-drying, body-sealing compound.

WATER HOSE TEST

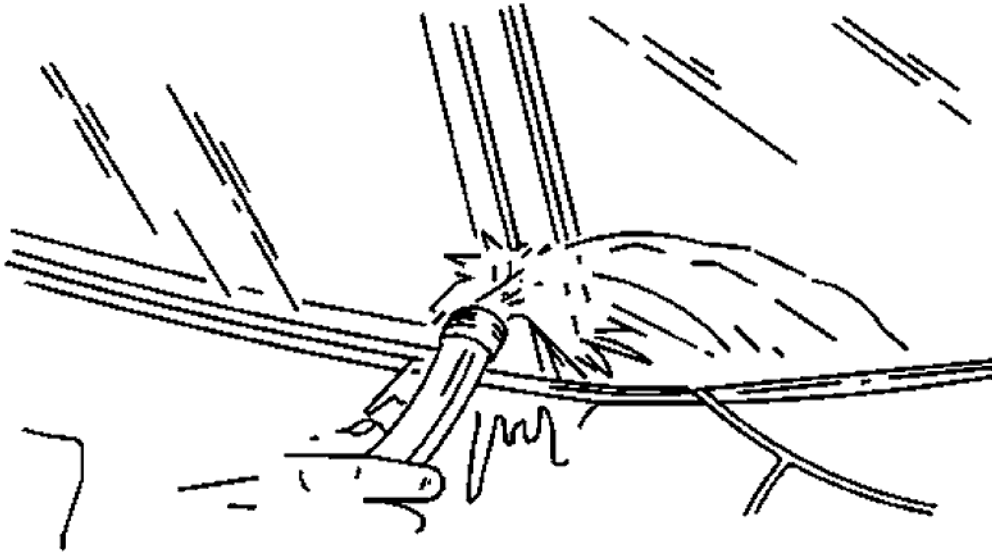


Fig. 3: Performing Water Hose Test
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Use a water hose without the nozzle attached.

1. Have an assistant inside of the vehicle in order to locate the leak.
2. Begin testing at the base of the window or the windshield.
3. Slowly move the hose upward and across the top of the vehicle.

AIR HOSE TEST

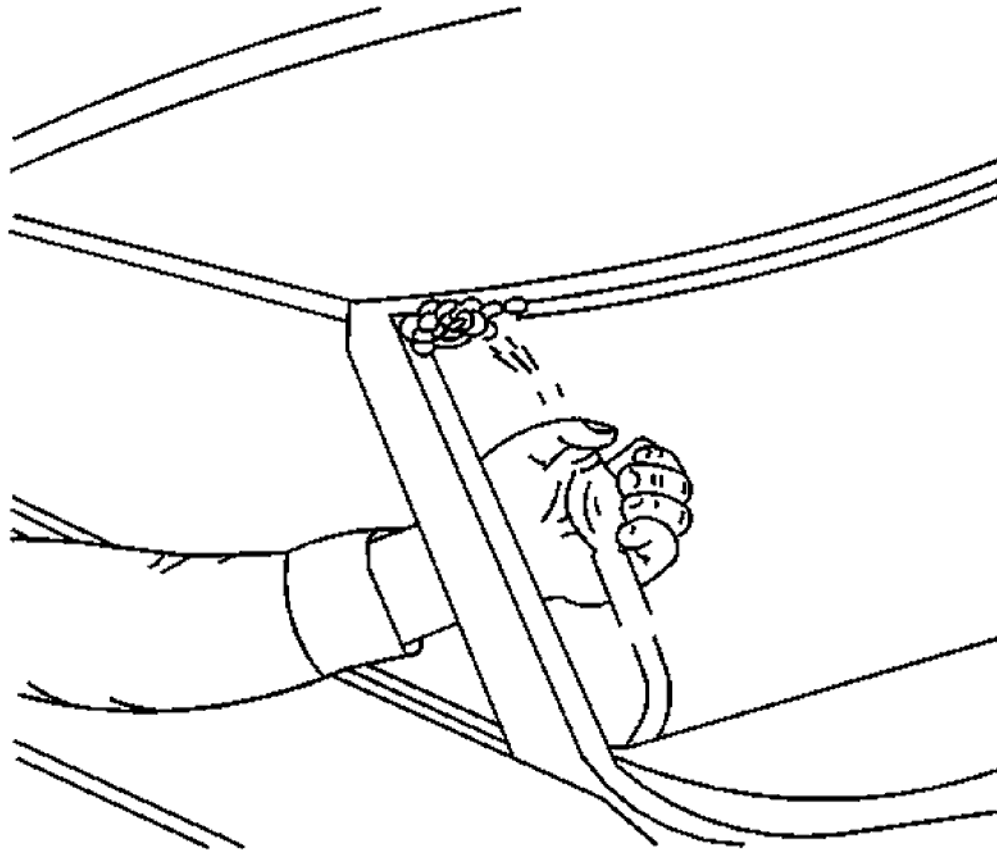


Fig. 4: Performing Air Hose Test
Courtesy of GENERAL MOTORS CORP.

NOTE: 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.

1. Using a liquid detergent, diluted with water in a spray bottle, spray the window at the edges. Begin at the bottom and gradually move up and across the top.

IMPORTANT: The compressed air should not exceed 205 kPa (30 psi).

2. Have an assistant inside of the vehicle with an air hose.
3. Have the assistant aim the compressed air at the suspected areas.

Bubbles will form in the soap solution at the location of the leak.

REPAIR INSTRUCTIONS

BODY WATER LEAK REPAIR

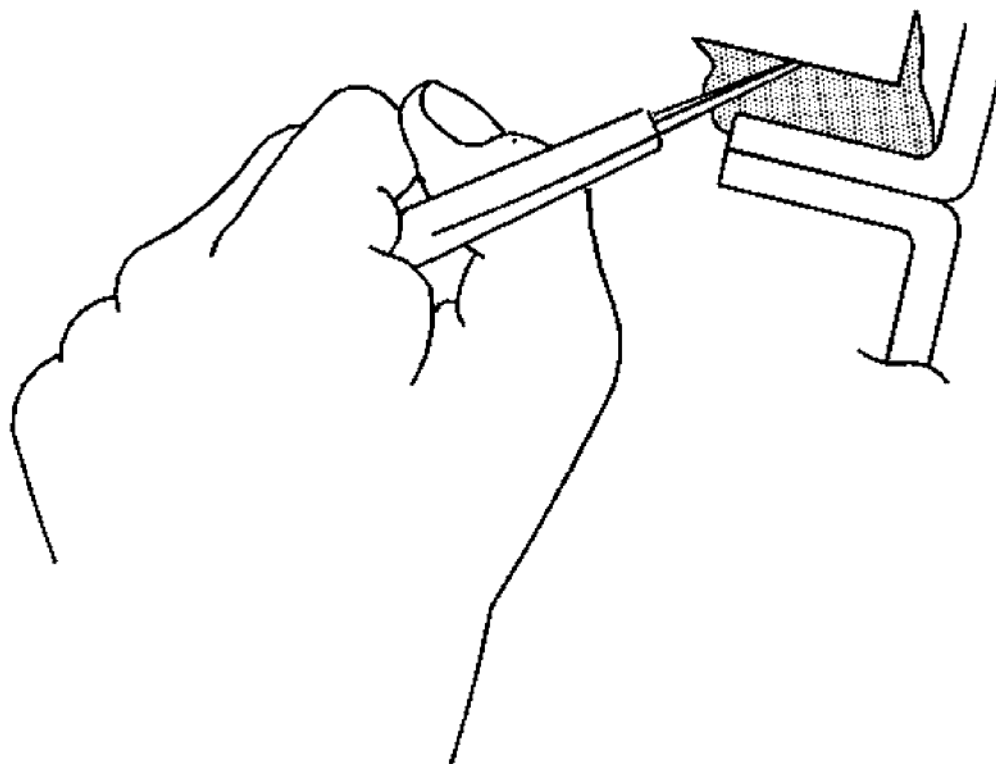


Fig. 5: Cutting Out A Portion Of The Adhesive Caulking (1 Of 2)
Courtesy of GENERAL MOTORS CORP.

1. Depending on the location of the water leak, you may have to remove certain interior components in order to repair the leak.

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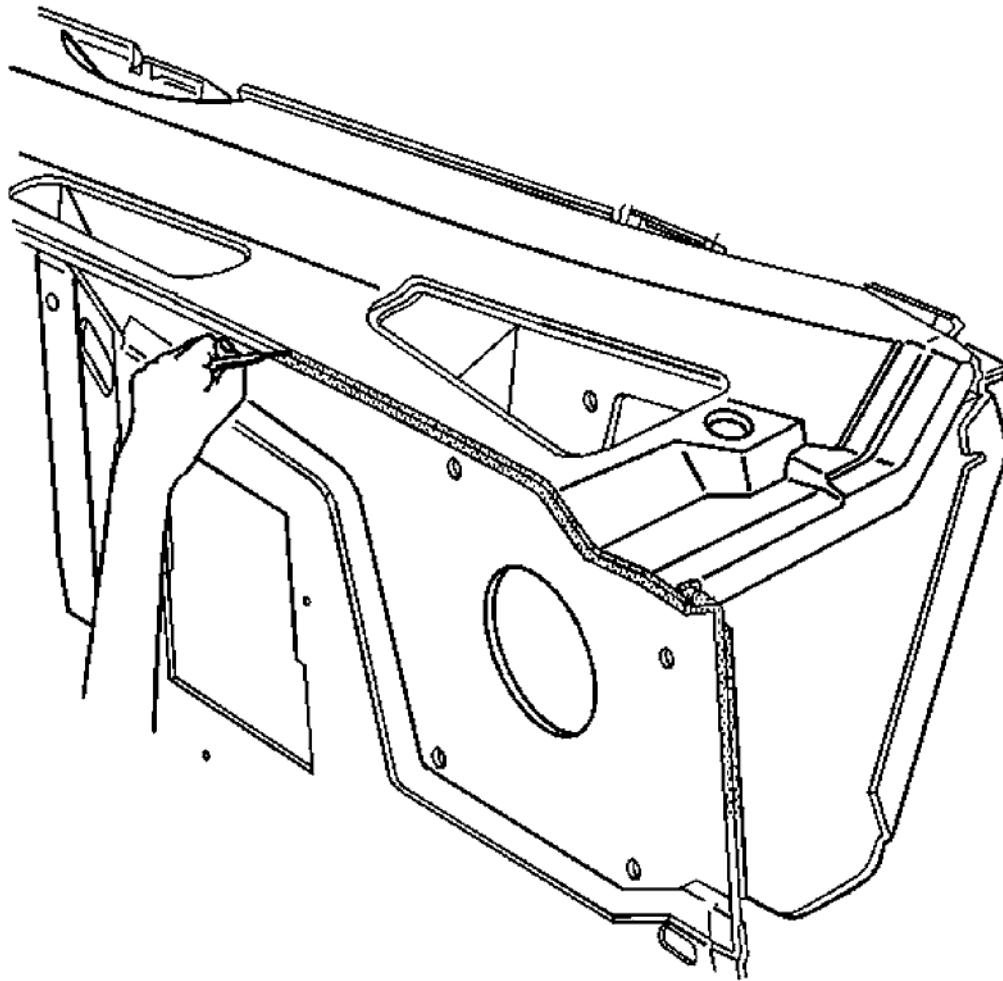


Fig. 6: Cutting Out A Portion Of The Adhesive Caulking (2 Of 2)
Courtesy of GENERAL MOTORS CORP.

2. Cut out a portion of the adhesive caulking in the leak area from inside or outside of the vehicle.
3. Clean and remove all loose particles of the adhesive old caulking from the area.
4. Apply joint body and seam sealer where the old adhesive caulking was removed.
5. Allow the adhesive caulking to dry for several hours.
6. Test for leaks.
7. Install the trim, if removed.

STATIONARY WINDOW WATER LEAK REPAIR

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1. Remove the trim moldings or the headliner in order to repair the leak, if needed.
2. Determine the source of water entry.
3. If water is leaking at the edge of the windshield, reseal the windshield using Urethane Adhesive Caulking Kit GM P/N 12346392 or the equivalent.
4. If water leaks into the vehicle at the sides of the stationary windows, reseal the window using Urethane Adhesive Caulking Kit GM P/N 12346392 or the equivalent.