

2018 ACCESSORIES & EQUIPMENT

Air/Wind Noise - Equinox & Terrain

DIAGNOSTIC INFORMATION AND PROCEDURES

AIR/WIND NOISE

Air/Wind Noise-Diagnosis and Tests

Tools

- Stethoscope
- Duct tape, foam, etc.

WARNING: Refer to [Assistant Driving Warning](#) .

Overview

To analyze a reported wind noise condition, use the following outline:

- Speak with the customer to obtain as much information as possible.
- Perform a static evaluation of the vehicle to identify potential areas of concern.
- Test drive the vehicle to determine the source of the noise.
- Select the appropriate solution.
- After repair, re-evaluate the vehicle to confirm the customer's complaint is resolved.

When test driving the vehicle, choose a regular route with smooth and straight roads. The area should have little traffic and little noise in order to minimize interference with the test. Drive the vehicle at the speed in which the noise was noticed, or until the noise is heard. Maintain safe and legal speeds.

You can diagnose the following types of wind noise:

- Wind whistle/wind leaks
- Wind rush

When moving at highway speeds, air pressure inside the vehicle becomes greater than the air pressure outside. When a leak occurs, the escaping air causes a hiss or a whistle. Wind whistle/wind leaks are repairable when properly root caused.

Wind rush occurs when air presses over the vehicle's body, and is related to the aerodynamics of the vehicle. Some wind rush is repairable as it relates to part fits and body panel fits. A thorough root cause analysis is required before concluding that the wind noise is not repairable.

Air/Wind Noise - Diagnostic Procedure

Use the following procedure in order to diagnose wind noise:

1. It is important to obtain as many details from the customer as possible in order to assure that you are addressing the issue that the customer hears. Note the following details:
 - The perceived location (B-pillar, mirror, roof, rear of vehicle, front of vehicle, high or low in vehicle)
 - The location where the noise is loudest (specific location along the door header, front edge of sunroof, etc.)
 - The volume of the noise (very loud, can only hear when radio is off and no ambient noises)
 - The ambient conditions (temperature, windy, direction of wind, quiet)
 - The road surface (rough, smooth, smooth concrete, ribbed concrete, asphalt)
 - The vehicle speed (city, highway, all speeds)

- The interior fan speed (off, low, high, floor mode, defrost, etc.)
 - The position of the windows (closed, partially open, full open, which windows are open-front and/or rear, driver and/or passenger)
 - The position of the sunroof (closed, partially open, full open)
 - What the noise sounds like (whistle, hiss, swoosh, etc.)
2. Using the details learned from the customer, perform a visual inspection of the vehicle for possible causes of the wind noise.
 - Mis-installed/torn weatherstrips (door glass seals, door to body seals, sunroof seals) - improper crimping, pins not fully engaged, seals not fully seated, seals pinched or deformed
 - Poor Door fits (panels proud to each other, door headers protruding out, etc.)
 - Poor Sunroof fits (sunroof proud to roof)
 - Poor Windshield fits (windshield proud to roof, windshield lace/molding gaps/distortions, etc.)
 - Roof Rack improperly installed (cross bar position fore-aft or backwards)
 - Mirrors mis-installed (gapping of mirror patch, mirror skull cap gaps, mirror gasket pinched, seals pinched, etc.)
 - Poor Molding fits (windshield moldings, belt moldings, grilles, emblems)
 - Any exterior aftermarket items installed (bug deflector, rain guards, etc.)
 - Loose fasteners, broken weld joints, sealer and/or adhesive skips
 3. Use the customer information to duplicate the driving conditions in order to duplicate the customer concern. Make sure you are working on the issue that the customer hears.
 4. Tape off the area of concern on the outside of the vehicle to turn the noise off. Start with a large area of taping to identify the general area of the noise. Then progressively remove sections of the tape until the noise returns. This method can help pinpoint the source of the noise quickly.
 5. If necessary, utilize some of the specific diagnostic procedures below (air pressure, bubble, etc.) to understand the leak path.
 6. Based on a thorough understanding of the leak path from inside to outside, select the appropriate resolution (refit doors, reposition weatherstrips, reposition gaskets, replace seals, etc.).
 7. After repair, test drive the vehicle to confirm the customer complaint is resolved.

TRACING POWDER OR CHALK TEST

Clean the weatherstrips and the contact surfaces with cleaning solvent.

1. Apply powder or chalk in an unbroken line to the contact surface of the weatherstrip surrounding the perimeter of the suspected areas.
2. Close the panel very lightly so as to not disturb the chalk or over-travel the door. Closing the panel completely presses the weatherstrip firmly against the mating surface.
3. Inspect the applied line on the weatherstrip. The applied line is marred where contact is good. A corresponding imprint is on the mating surfaces.
4. Gaps or irregularities in the powder or the chalk line on the mating surfaces indicate the areas with a poor seal.

AIR PRESSURE TEST

1. Close all the windows.
2. Turn the vehicles ventilation fan to the on position, with the selector on high speed and in the defrost mode (or panel mode with fresh air vent on - no recirc).
3. Unlock and close the doors.
4. Listen for escaping air along the door and the window seals with a stethoscope or a length of heater hose.
5. If unsuccessful in identifying the leak path, consider masking off the pressure relief valves (to increase cabin pressure) and perform the evaluation again.

SOAP SUDS OR BUBBLE TEST

1. Close all the windows.
2. Turn the vehicles ventilation fan to the on position, with the selector on high speed and in the defrost mode (or panel mode with fresh air vent on - no recirc).

- 3. Unlock and close the doors.
- 4. Apply the soap solution to the potential leak areas.
- 5. Look for bubbles revealing escaping air.
- 6. If unsuccessful in identifying the leak path, consider masking off the pressure relief valves (to increase cabin pressure) and perform the evaluation again.

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

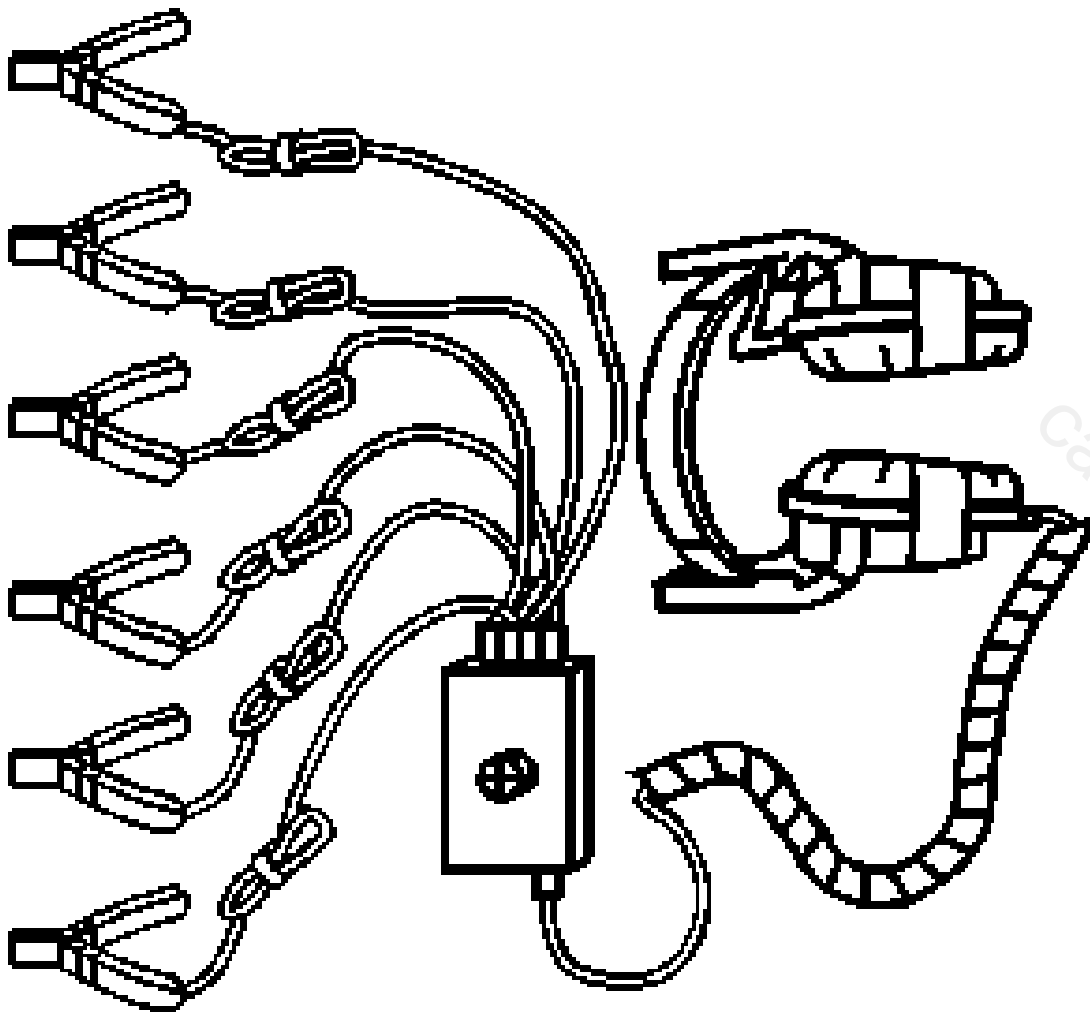
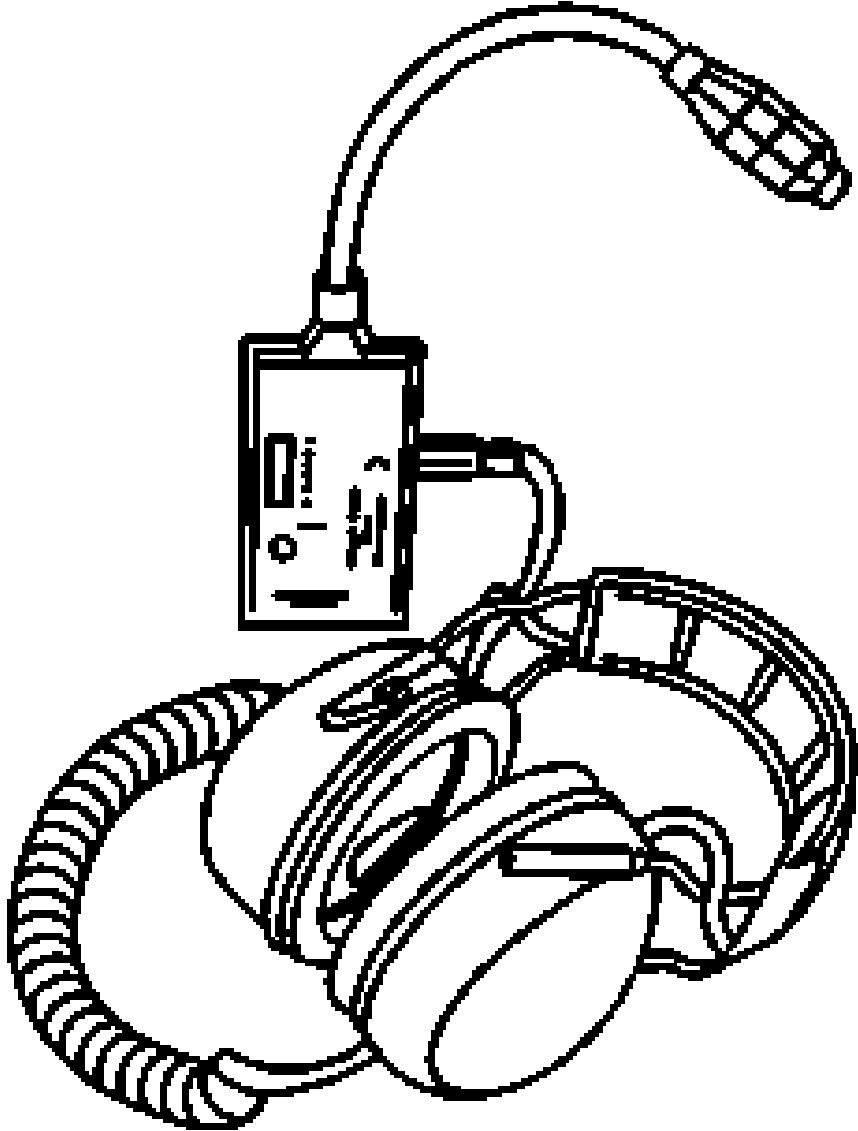
Illustration	Tool Number/Description
	CH-39570 J-39570 Chassis Ear

Illustration	Tool Number/Description
	GE-41416 J-41416 Ultrasonic Leak Detector cardiagn.com