

Product Characteristic Sheets

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Brakes Squeal

Customer's concern: "My brakes make a squealing noise sometimes when I apply them lightly at low speeds; when I apply them with more force, the squealing stops."

What's happening and why: As described in some owner's manuals, the squealing noise is caused by high-frequency vibration of the brake pads against the rotating brake disc. Vibration is the unavoidable result of friction generated by the pads as the caliper clamps them against the rotating disc. *Under average braking conditions, some brake noise is normal and cannot be eliminated.*

Normally, the shims and the high-temperature grease between the pads and the brake caliper dampen and isolate most of the vibration. The level of vibration, however, is affected by outside temperature and humidity, by road conditions (mud, dust, and road salt), and by the condition or thickness of the brake pad material.

What can be done: If the squealing noise is abnormally loud, have the brakes inspected and checked for pad wear.

If thickness of the friction material (compared to the wear indicator) indicates that the remaining usable lining won't last until the next scheduled service for the vehicle, then replace the brake pads.

If enough friction material is present on the brake pads, then replace only the pad shims and the high-temperature grease.

Brakes Click or Groan

(1) Customer's concern: "My brakes make a **single "click" noise** when I back out of a parking place and once again when I drive forward."

What's happening and why: A clearance between the brake caliper brackets and the ends of the brake pads allows for heat expansion and avoids corrosion between the caliper bracket and the brake pads. That clearance can cause the pads to hit the caliper brackets when you first apply the brakes in a new direction of travel. When you back up and apply the brakes and then drive forward and apply the brakes, the **single "click" noise** you hear is a *normal characteristic* of the brake system.

What could be done: To demonstrate that the noise can be made to disappear only temporarily, a technician could remove the pads from the caliper brackets and shim the ends of the brake pads with a cut-up business card until the pads can be snugly reinstalled in the brackets. As you drive the vehicle, at first you wouldn't be able to hear the **single "click" noise**. But as the pieces of business card get pulverized and fall out over time, the *normal characteristic* noise would eventually return.

(2) Customer's concern: "I hear a **groaning noise** when I start my car and then leave for work in the morning."

What's happening and why: On models with a compact anti-lock brake system (ABS) unit or a vehicle stability assist (VSA) system, your vehicle's ABS/VSA emits a brief grunt or groan when it does a self-check. Vehicles equipped with VSA may perform two self-checks. The self-check occurs when a vehicle is backed up or driven forward after being started. The **groaning noise** associated with the ABS self-check is a *normal characteristic*; it doesn't mean there's a problem with the ABS.

What could be done: A technician could demonstrate the ABS self-check for you by connecting a handheld diagnostic tool to the vehicle's data link connector and running the function test. The function test cycles the ABS solenoid and runs the ABS pump. The noise from the function test may be louder than the grunt or groan that you hear from the ABS self-check, but the function test would let you hear the noise again. Also, the demonstration could help you and the technician to decide whether the **groaning noise** you hear is truly the ABS-related *normal characteristic* or a noise from another source.



Anti-lock Brake System (ABS) Modulation

Customer's concern: When I braked hard to avoid a dog that ran into the street, the front end of my car shuddered, the brake pedal bounced back against my foot, and it seemed to take longer than usual for the car to stop.

What's happening and why: The anti-lock brake system (ABS) modulates to keep the vehicle's wheels from locking up and skidding during hard braking, allowing you to retain steering control. The ABS senses differences in the speed of rotation of the four wheels and compensates by applying, maintaining, or releasing the braking pressure at the individual wheels. You may experience this ABS modulation whenever you brake hard (1) while crossing an intersection where the surface changes from asphalt to concrete or (2) while you're driving over sewer plates, painted lines, or railroad tracks. When you brake hard, even on a dry surface, the system modulates rapidly, causing the tires to vibrate and sending the pulsations back to the brake pedal (pedal kickback). The noise and rapid pulsation indicate that the ABS is functioning as it's designed to operate, and *no adjustment is necessary for the indications of modulation.*

What can be done: Once you understand that the brakes will cause pedal kickback whenever the ABS modulates, you can be assured that your brakes will help you in instances when you really need them and the road surface is slick. When heavy fog, light rain, snow, or ice has dampened the road enough to bring up the oil from the asphalt and you must brake hard, you'll notice the sensations of ABS modulation. When you brake steadily, the ABS will take over, modulating the brakes and allowing you to slow or stop evenly while maintaining the ability to steer the vehicle.

Do not pump the brake pedal or completely release the pressure of your foot on the brake pedal. Instead, maintain firm, steady pressure on the pedal as you steer away from the hazard. Your sense that the slowing or stopping is taking longer than usual is not accurate; ABS modulation allows you to slow or stop the vehicle within the same time and distance that would be required for any other braking system. *Drive at a prudent speed for the road and weather conditions, and maintain a safe following distance from other vehicles.*

Further explanation: Check the description of ABS activation in the **Anti-lock Brakes** information in **The Braking System** section of your owner's manual. You should not experience sensations of ABS modulation when you brake only lightly. If the ABS, TCS, VSA, or BRAKE indicator stays on, take your vehicle in to have the brakes checked.

Brake Pedal Sinks

Customer's concern: "Sometimes when my foot is on the brake, I feel the pedal drop a little. I especially feel the pedal sink while I'm holding my car stopped at a light."

What's happening and why: This change in brake pedal height is caused by an increase in engine vacuum. The "power brakes" system in most modern vehicles uses engine vacuum to boost the amount of force applied to the brake pedal by the driver of the car. The device that does this, called the brake "booster," makes it easier for the driver to stop the vehicle.

Engine vacuum is affected by many different conditions. Engine vacuum is highest when all accessories are off and the accelerator pedal is released (low load), and lowest when all accessories are turned on and the accelerator pedal is held to the floor (high load). Any change in engine vacuum (load) can affect the amount of "assist," or boost, provided by the brake booster.

To prevent a decrease in assist while stopping, a check valve is included in the system. This valve maintains vacuum in the booster if the engine were to stall, and it allows for the maximum amount of engine vacuum available, since the brakes were last used, to be ready the next time the brakes are used. The check valve also allows for an increase in brake pedal boost when engine vacuum increases.

One system that applies a noticeable load to the engine is the air conditioning. During normal operation, the air conditioning system constantly cycles on and off, changing the amount of load on the engine. When the air conditioning cycles off, the load on the engine is decreased and the amount of engine vacuum is increased. If the driver is applying the brake pedal when the air conditioning cycles off, the increase in engine vacuum increases the amount of boost applied to the brake pedal. That increase is felt as a slight drop in brake pedal height.

What could be done: If you were to drive for a period of time with the air conditioning turned off, you'd notice that the *normal characteristic* of the sinking brake pedal would no longer occur. This test could confirm for you that the effect you've previously noticed is, in fact, caused by a decrease in engine load.



Dirty Windows and Defrost/Defog

Customer's concern: "My windows always have a dirty film inside. I've tried everything to clean them, but the film just won't come off."

What's happening and why: Vehicle interiors create the ideal atmosphere for film buildup on the inside of windows. Cigarette smoke, condensation, and dust blend in a closed, hot interior to form a "cloud" that eventually coats the windows. The hotter the weather, the quicker the film builds up.

In new vehicles, evaporation of materials used in the manufacture of plastic and vinyl interior components also contributes to this film. This evaporation, called "outgassing," is common to all new vehicles, not just Acuras; it's also what gives a new vehicle that "new-car smell." As the vehicle ages, the outgassing diminishes.

What can be done: Keeping the inside of the vehicle cooler reduces the buildup of this film. We recommend parking the vehicle in the shade, using a sun shade, and leaving the windows down slightly when parked (if it's safe to do so).

To keep the windows clean both inside and outside, use a soft cloth or paper towels and a commercially available glass cleaner. Honda Glass Cleaner, available through your dealership's Parts Department, is highly recommended because it doesn't streak or leave a haze. Another good solution for cleaning the film off of windows is one part white vinegar to ten parts water; this solution is recommended in the owner's manual.

One other note about this film: It impairs the effectiveness of the defroster and the defogger. Regularly cleaning the film off the *insides* of the windows, the windshield, and the rear window helps the defrost and defogger functions to work more rapidly and clear the frost and condensation, or "fog," from the glass during cool weather. In other words, *clean windows will defrost and defog more quickly and more thoroughly.*

One more word of advice: *Don't turn off the air conditioner* and defeat the purpose of the "defrost feature" on newer cars that have the air conditioner come on automatically when the Defrost function is turned on; instead, simply turn up the heat as needed. Likewise, in older cars during cool or cold weather, *turn on the air conditioner* (and turn up the heat level) while defrosting to make it quicker. The heat control sets the temperature of the air blown by the fan. And since the air conditioner dries the air, the dry air it produces will remove moisture to defrost and defog more efficiently.



Wind Noise

Customer's concern: "As I'm driving down the road, I hear the wind blowing in around my door (or window); closing the window tighter doesn't help."

What's happening and why: The noise could be caused by normal turbulence created when air flowing around the vehicle no longer smoothly follows the body contours. Exactly when the noise will occur depends upon how windy it is outside (speed and direction of the wind), speed of the vehicle, and the shape and size of specific parts of the vehicle body, such as the door mirror, windshield pillar, and windshield molding.

Another possible source of wind noise could be accessories such as roof racks, spoilers, and nose masks. Acura accessories of those types are designed to minimize wind noise, but aftermarket accessories of those types (or bug deflectors or door edge guards) may cause more than an acceptable noise level.

The noise could also be caused by an air leak: air flowing past or through an opening to the interior. Most newer Acura vehicles are so well insulated from engine and road noise that even a small air leak, unnoticeable in previous models, can cause a very irritating wind noise.

What can be done: First, determine whether the noise is simply normal turbulence by comparing the noise level in a similar vehicle under the same conditions.

If the noise in your vehicle is actually louder than in a similar vehicle, have an Acura service technician check for an air leak. Air leaks can usually be eliminated by using appropriate diagnostic techniques and then making an adjustment or repair. Your Acura service technician can also check the current service bulletins to see if the specific problem is covered.

Further explanation: Acura vehicles are tested in a wind tunnel to provide the quietest driving experience possible. Air leaks can usually be eliminated, but some noise due to wind turbulence is unavoidable under certain conditions.



Paint Damage

Customer's concern: "I see spots all over my car; the paint is 'defective.'" OR "My car's paint is cracking." OR "There's dirt under the paint."

What's happening and why: Paint damage can appear in any of several forms:

Acid Rain. In the case of spots, the paint surface may be etched by "acid rain," that is, rainwater that has been made acidic or alkaline by atmospheric pollution. Acid rain, an environmental problem that affects all automobiles, varies with geography; for example, in certain parts of the country, acid rain forms when rain mixes with the sulfur released into the air from coal-fired power plants. The extent of damage varies, depending on how long impurities sit on the painted surface. Sometimes, damage appears as a discoloration or stain with no rings or pitting. Typically, it looks like water droplets that have dried on the paint: a white ring on the outside with a clear or hazy center. Rings could be small as a pinhead or big as a quarter.

Tree Sap or Bird Droppings. If the problem is cracking or crazing, the cause could be tree sap or bird droppings, which are natural menaces to the paint on any vehicle. Damage to paint occurs only if the sap or droppings are not cleaned off promptly.

Bee Pollen. If the problem is yellow drops or lines that cause paint swelling that looks like dirt under the paint, it could be bee pollen dropped on the surface.

What can be done: To minimize the paint damage from any of these causes, the best preventive measures are (1) frequent, at least weekly, washing of the vehicle and (2) a regular coat of quality automotive wax. The wax makes rainwater "bead" and run off. If the paint is damaged, minor damage can usually be color sanded and polished, while major damage may require repainting of the panel.

Even if you regularly use a quality wax, you should rinse off the vehicle (with water only) after exposure to acid rain. Vehicles with metallic colors have a "clear coat" of paint over the "color coat." Acid rain damage to the clear coat can usually be "buffed out" with a very fine polishing compound. In severe cases, when the surface within the white rings is *pitted*, then the color coat is damaged, and repainting is required.

To avoid tree sap and bird droppings, whenever possible, don't park your vehicle under trees. When you notice tree sap, bird droppings, or bee pollen, wash it off right away or use a towel and a cleaner, such as Meguiar's "Final Finish," to clean it off.



Poor Radio Reception

Customer's concern: "My radio isn't working right. It fades in and out and has static."

What's happening and why: Many "radio reception" problems are not really the fault of the radio but rather the result of peculiar radio phenomena or antenna interference. Moreover, each type of broadcast signal—amplitude modulation (AM) or frequency modulation (FM)—has different characteristics and is affected by different conditions:

The *low-frequency AM* signal travels by bouncing back and forth between the ground and the upper atmosphere in a zigzag pattern. This pattern causes the signal to travel farther and have stronger reception (come in more consistently at greater distances) than FM. The main problem affecting AM signals is electrical interference. Also, the bouncing pattern causes AM signals to fade under bridges or in tunnels.

The *high-frequency FM* signal is limited to a smaller reception radius, around 50 miles. The FM signal travels in a straight line and loses strength when it can't be broadcast straight to the antenna; for example, when blocked by buildings, hills, or large trucks. This causes increased hiss or fading and interruption in the FM signal.

What can be done: Some things your Acura service technician can do will help with problems in both AM and FM reception, while other things affect *either* AM *or* FM:

Problems With Both AM and FM. First, if the problem is distorted sound, static, or no sound from one speaker, play a cassette or CD in the player to make sure you're not mistaking a speaker problem for a "radio reception" problem. If the cassette or CD sounds good and the music comes out of both speakers, then at least you've ruled out the speakers and the amplifier as the source of the problem.

AM Problems. For AM signals, an important factor for good reception is a good antenna ground. If static is the same on all stations, the problem is probably a bad ground at the antenna, a faulty antenna lead (coaxial cable), or loose connection of the coaxial cable to the radio.

FM Problems. For reception of FM signals, antenna length is very important. If the vehicle has a manual antenna or a power antenna, make sure it's all the way up.



Lights Dim Briefly

Customer's concern: "As I speed up and slow down, the blower motor speed changes and the lights dim and brighten."

OR

"While my car is stopped at a light, I notice the lights dim slightly and then come back to normal."

What's happening and why: These effects of variations in the electrical system are created by the onboard computer. The computer controls the output of the electrical charging system to improve fuel economy and minimize vehicle vibration.

When you're speeding up, the engine's demand for fuel is high. The computer slows down the electrical charging system to reduce the amount of load on the engine so that the fuel is used more efficiently. When the electrical charging rate is reduced, you may briefly notice the *normal characteristic* of a slight momentary decrease in light intensity and blower fan speed.

When you're slowing down, the engine has little or no demand for fuel. The computer takes advantage of this situation by increasing the charging rate for a short time. When the electrical charging rate is increased, you may notice the increase in light intensity and blower fan speed.

While the engine is at idle, the computer monitors the electrical usage of the car and then controls the electrical charging system so that it charges just enough to keep up with the demand. This change reduces the load on the engine and, in turn, increases fuel economy and reduces vehicle vibration. As electrical accessories turn on and off, the computer changes the rate of electrical charge in response to the changes in demand for electricity. As the computer responds to the addition of electrical load, you may notice a momentary dimming of the lights. For example, the headlights or instrument panel lights may briefly dim as the air conditioning cycles on.

Further explanation: When you install a new battery, you may observe that the intensity or frequency of the lights dimming is even more noticeable. With the old, weak battery, the onboard computer was keeping the electrical charging system running at a higher level to compensate for the decreased battery capacity. When the new battery is installed, the system returns to normal.

Vehicle Stability Assist Activation Indicator Blinks

Customer's concern: "When I'm driving through sharp turns or on a curved freeway on-ramp, the triangle light (VSA activation indicator) blinks and my steering wheel shakes."



Background: The VSA (vehicle stability assist) control unit is constantly monitoring several sensors to determine the exact position (attitude) of the vehicle. If the VSA system calculates that the vehicle has begun to understeer (steering wheel turned yet vehicle continues straight) or oversteer (the rear wheels slip so the vehicle begins to spin), it may reduce engine power or individually apply the brakes to correct for the situation. *When the VSA system is active, the VSA activation indicator blinks.*

To determine if the vehicle is in an oversteer or understeer condition, the VSA system compares sensor values to preprogrammed values based on the slip rate of the tires (how much cornering power the tire has), the toe curve (how far the tire is turned in for a given steering wheel angle), and other conditions. A tire's slip rate is determined by its construction, the type of rubber, the tire size, and the amount of inflation. The toe curve may change as the vehicle is raised or lowered from its normal ride height.

What's happening and why: The VSA system is very sensitive to (1) tire pressure and (2) ride height:

Tire inflation that's too high or too low changes the slip rate of the tire. When you're cornering, the VSA control unit sees the changed slip rate as oversteer or understeer and reacts by reducing engine power or by applying an individual brake caliper to stabilize the vehicle.

A lowered vehicle is in a different portion of the toe curve as compared to a stock vehicle. The change from the stock ride height (change in center of gravity) and the difference in toe curve influence the amount of steering input required to complete a turn. If steering input differs from what the VSA control unit calculates it should be, the unit reacts by reducing engine power or by applying an individual brake caliper.

What can be done: Maintaining proper tire pressure and stock ride height can ensure that the VSA system will properly respond to changing road conditions and steering input. Use only the correct size of tires, and check tire pressures regularly to ensure proper inflation (and slip rate). Use the doorjamb sticker to determine your tires' proper inflation, and refer to the owner's manual for the recommended inspection interval.



Side Airbag Indicator Comes On and Goes Off

Customer's concern: "The light for the side airbag seems to come on and go off a lot."

What's happening and why: To help reduce upper torso injuries during moderate to severe side impacts, side airbags are located in the outer bolsters of the front seats in some models. The front passenger's seat contains sensors that determine the height and position of the person in the seat. If deployment of the side airbag isn't appropriate based upon input from the sensors, the SIDE AIRBAG or SIDE AIRBAG OFF indicator comes on [the yellow light, not to be confused with the red supplemental restraint system (SRS) indicator].

This is how the SIDE AIRBAG or SIDE AIRBAG OFF indicator operates:

When the indicator on the instrument panel is on, the front seat passenger's side airbag will not deploy (inflate).

If the passenger's seat is occupied by a small adult or child (or a larger adult who is slouching) *and* the person occupying the passenger's seat is leaning over and obstructing the deployment path of the side airbag, the indicator comes on.

To minimize the distraction to the driver, the SIDE AIRBAG or SIDE AIRBAG OFF indicator reacts to data from the passenger's seat sensors with a 3-to-4 second delay.

What can be done: Follow these guidelines:

Instruct the front passenger seat occupant to sit up properly so the side airbag can protect them if needed and so the side airbag indicator will not come on.

Do not place any object, such as a grocery bag, briefcase, or laptop computer, on the front passenger's seat to prevent the SRS from turning on the side airbag indicator.

Do not operate or place any electrical accessory items on the front passenger's seat. Some accessories interfere with functions of the passenger seat's internal sensors. The interference may cause the SRS to falsely detect a problem and turn on the SRS indicator (the red light), which requires a trip to the dealership service department.

Never use seat covers on the front seats. Seat covers (plastic, beaded, sheepskin), cushions, or backrests may interfere with proper passenger's seat sensor operation and could obstruct either side airbag's deployment path, leading to injury.



Automatic Transmission Downshifts While Descending

Customer's concern: "I was going down a hill, and when I applied the brake pedal, I noticed that the engine noise increased and the car slowed down quicker than I expected it to."

What's happening and why: The transmission's grade logic control system comes into play when you descend or ascend a sloping road (a "grade") or when you reduce speed. The onboard computer compares memorized driving conditions with your actual driving conditions, based on various signals from the vehicle's sensors, and then uses grade logic to shift the automatic transmission accordingly.

Grade logic uses "descending control" to downshift the transmission during descent and braking. When you're driving downhill with the transmission in a high gear (4th or 5th) and you brake even slightly, the computer directs the transmission to downshift to the next lower gear (3rd or 4th). The downshift allows "engine braking" to help slow down the vehicle. Sometimes, this *normal characteristic* engine braking effect could be perceived as a harsh, unexpected downshift.

What can be done: Test-drive a *similar vehicle* (same model and year) and duplicate the driving conditions to compare the downshift speeds and the shift quality. The comparison should confirm that the downshifting of *your vehicle* is indeed a *normal characteristic* of an automatic transmission that has grade logic.

Further explanation: When you're going uphill, grade logic uses "ascending control" to keep the transmission in lower gears and eliminate frequent or excessive upshifts and downshifts. Sometimes this *normal characteristic* effect might be perceived as the transmission not upshifting normally. In this case, grade logic is, in fact, intended to help the vehicle run smoothly and have more power when needed.

One more driving condition could create an effect of the grade logic control system that you may notice. When the vehicle goes around a corner and needs to decelerate first and then accelerate, the onboard computer directs "deceleration control" to reduce the number of times the transmission shifts. For example, as you reduce vehicle speed, the computer directs the transmission to shift from 4th gear to 2nd gear earlier than normal to cope with the upcoming acceleration.



Actual Fuel Mileage Varies From Estimated Figures

Customer's concern: "My car doesn't get the same fuel mileage as the figures on the label I took off the car and what I see in the ads for my year and model."

What's happening and why: The "Monroney label" on the side window of new cars shows figures achieved under controlled driving conditions. The fuel mileage estimates are for comparison shopping purposes only, and the city and highway miles per gallon (mpg) that you experience may vary from those shown on the label and in advertising.

The mileage estimates on the label reflect the average mpg attained by similar vehicles in a model line under controlled laboratory conditions and are not the result of an actual road test. Test vehicles are run by professional drivers on a treadmill-like device that measures exhaust emissions and fuel usage. During the test, the vehicle's headlights, air conditioning, heater, audio unit, and all accessories are turned off.

The City portion of the test, at an average speed of 20 miles per hour (mph), simulates a 7.5-mile stop-and-go trip that includes idling time to approximate rush hour traffic delays. The Highway portion, at an average speed of 48 mph, simulates a 10-mile rural and interstate drive without idling time. To make the final fuel economy estimates closer to expected real-world fuel consumption, the results of the City mpg are lowered 10 percent, and the Highway mpg results are lowered 22 percent.

What can be done: As the label says, your "actual mileage will vary with options, driving conditions, driving habits, and vehicle's condition." So you can do some beneficial things to increase the mpg of your vehicle:

Keep your tires inflated to the specifications listed on the doorjamb sticker.

As often as possible, accelerate slowly and smoothly; depending on traffic conditions, try to maintain a constant speed; and use cruise control when possible.

Keep your vehicle in top condition by following the maintenance schedule listed in your owner's manual and by using the recommended engine oil.

Further explanation: For additional information, see the **Fuel Economy** tips in the owner's manual for your vehicle. You can also get a free fuel economy guide at www.fueleconomy.gov or by calling 800-423-1363. Or write to National Alternative Fuels Hotline, 9300 Lee Highway, Fairfax, VA, 22031-1207.



Driveability Problems After Putting Fuel in the Tank

Customer's concern: "The car doesn't run right after I got fuel at a gas station."

What's happening and why: Many problems after fueling can be traced to the fuel:

You unknowingly purchased "off-season" fuel. Fuel is blended at the refineries for optimum performance according to *expected* seasonal temperatures and conditions. Winter fuel can create starting and driveability problems when used during warm weather, and the same thing can happen if summer fuel is used during cold weather. If the fuel you purchased has been in the service station's storage tank too long, it may not be the correct blend for the current ambient or seasonal conditions.

You unknowingly purchased "old" fuel. One problem is that fuel gets contaminated by water condensation as the fuel ages in the fuel storage tank; for high-volume stations, this isn't a problem. Also, as lighter elements evaporate and escape over time, the volatility of the fuel changes, affecting how the fuel reacts when ignited. If the fuel volatility isn't correct, hard start or driveability problems may result.

You may have contaminated the fuel tank with diesel fuel. Contamination with diesel fuel creates problems and is difficult to diagnose and detect. Some service stations don't have "stand-alone" diesel fuel pumps, and the handle for some diesel fuel pumps may be green, the same color used for the unleaded fuels.

You didn't get the correct grade of fuel. If your vehicle doesn't require premium unleaded fuel, don't pay extra to purchase a higher grade. Vehicles designed to operate with regular unleaded fuel will operate best with this fuel; extra additives in premium grade fuels can potentially cause problems over time. Likewise, using a lower grade of fuel than recommended could cause pinging and engine damage.

What can be done: Follow these guidelines:

Always buy fuel for your vehicle at a name-brand, high-volume service station, usually found along interstate highways and major boulevards.

When you're at the service station, make sure that you select the correct fuel type and grade, as recommended in the owner's manual for your vehicle.

Further explanation: If a driveability problem develops after filling up, make sure you tell the service advisor the sequence of events.

CHECK Engine Light Is On After Filling the Fuel Tank

Customer's concern: "A day or two after I went to a service station for gas, the CHECK Engine light on the dashboard came on and stayed on."

What's happening and why: To reduce or eliminate harmful emissions, environmental protection regulations for recent-model vehicles require that onboard sensors monitor tank pressure. Because of the sensitivity of the sensors, the CHECK Engine light (also called the Malfunction Indicator Lamp) could come on because of something as simple as an overfilled fuel tank or a lost or loose fuel fill cap. (The fuel fill cap must be tightened until it clicks at least three times, as stated on the cap.) After you eliminate the cause, the CHECK Engine light on the instrument panel should go off when you complete a minimum of three additional driving trips, as described in the owner's manual for your vehicle. If the light doesn't go out, go to your Acura dealership.

When you filled up the fuel tank, you may have actually topped off the tank, maybe without realizing so. Or perhaps you didn't turn the fuel fill cap tight (until it clicks at least three times). Either of these situations can cause the CHECK Engine light to come on and stay on until you complete the necessary additional driving trips.

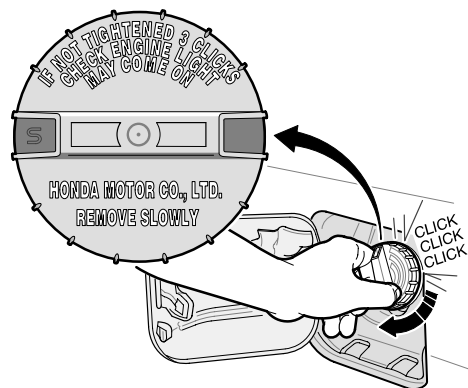
What can be done: To avoid the CHECK Engine light coming on after a fuel fill-up, follow these guidelines:

Don't top off the tank so that you don't force liquid fuel into areas that should be exposed to vapor only.

Don't use an aftermarket fuel fill cap. If needed, make sure you buy the proper replacement fuel fill cap from your Acura dealership's Parts department.

When the fuel nozzle clicks off, remove the nozzle, replace the fuel fill cap, and *tighten the cap at least three clicks*, as stated on the fuel fill cap.

Further explanation: For more information, see the section in your owner's manual called "Service Station Procedures."





CHECK Engine Light Comes On

Customer's concern: "The CHECK Engine light on the dashboard is on. Why did it come on, and what I should do about it?"

What's happening and why: Acuras have computers that continually adjust vehicle performance, based on inputs from sensors, to keep emissions at a level that maintains a cleaner environment. The computers and the associated sensors comprise the onboard diagnostic (OBD) system, which monitors ignition, fuel injection, and other emissions-control-related systems and the transmission. When sensors detect conditions outside of specified values, they typically cause the Malfunction Indicator Lamp (MIL), also called the CHECK Engine light, to come on, indicating a potential problem.

What can be done: Responding right away to the MIL may help prevent the need for big repairs later on. When the MIL comes on, you should call your dealership's service department about having your vehicle checked. The service advisor may ask you about driveability problems and the specific driving conditions when the light came on, such as air temperature and humidity, driving speed, type of road surface, and amount of acceleration and brake application. Also, the advisor needs to know of any unusual driving situations, such as the vehicle hitting a deep rut or pothole at high speed or driving through an area of standing water in the road.

When the vehicle is brought in with the MIL on, a technician can identify the codes by using a handheld diagnostic tool that reports the values from sensors. Diagnosis, along with the information you provide, can help the technician repair your vehicle.

On recent-model vehicles, one thing that caused the MIL to come on could be as simple as *an overfilled fuel tank* or *an aftermarket or loose fuel fill cap*. (The fuel fill cap must be tightened until it clicks at least three times, as stated on the Acura fuel fill cap). In these situations, after you eliminate the cause, *the MIL may go off when you complete a minimum of three additional driving trips*, as described in the owner's manual.

Further explanation: If the condition that caused the MIL to come on is still present, a technician can read the codes, correct the condition, erase the codes, and return the repaired vehicle to the customer with the MIL no longer on. Sometimes, however, the cause of the MIL coming on may be an intermittent problem, and the technician may not have the data required to recreate the identical conditions. In that case, since the cause could not be identified, the vehicle would be returned with no repair being done.



State Emissions Testing and the OBD System

Customer's concern: "I took my car in for emissions testing, and it was rejected. They told me that it's not 'ready' and it needs to have something 'set'."

What's happening and why: The Federal Government requires that 1996 and later passenger vehicles have an onboard diagnostic (OBD) system. To protect the environment, this system monitors key vehicle components for deterioration or malfunction that could increase emissions levels. An onboard computer compares performance of key vehicle systems against set values. Diagnostic tests that are done when the vehicle is operating measure the capability of the systems to do their emissions-reducing functions.

The Federal government also requires that all states switch to emissions testing that checks for "readiness codes," which must be "set" to "complete." This testing eliminates the need for tailpipe testing or mechanized testing. The testing also verifies that the CHECK Engine light (Malfunction Indicator Lamp or MIL) is not on and that no diagnostic trouble codes are set. If the vehicle's readiness codes are set and no diagnostic trouble codes are set, then the vehicle passes the state emissions test.

If you take your vehicle for state emissions testing shortly after the battery has been disconnected or has gone dead, then your vehicle may not be ready for the test. The readiness codes are erased when the battery is disconnected, and they set again after several days of driving under a variety of conditions.

What can be done: Most inspection failures require that a driving cycle or pattern be done to set the readiness codes. The required drive(s) may involve highway driving or city driving. A technician can drive the vehicle, or the dealer may request that you drive the vehicle. In most cases, driving the vehicle under normal driving conditions allows the OBD system to complete the tests and set the readiness codes. After the readiness codes are set, you can return the vehicle for the testing to be done again.

Further explanation: If you have a current-model vehicle, for more information, see the section in your owner's manual called "State Emissions Testing."



Intermittent Cold-Start or Driveability Problems

Customer's concern: "My car runs rough right after it's started."

OR

"When I start the engine or begin driving, the CHECK Engine light comes on, but the light's off when I get to the dealership."

What's happening and why: In most cases, the technician needs to be able to duplicate a problem to be able to effectively diagnose the problem. A problem that's not currently happening is very difficult to troubleshoot, and verifying that any attempted repairs have fixed the problem is not possible. If the problem occurred when the vehicle was cold, the technician has little chance of duplicating the problem when receiving the car hot. You may have to leave the car for a longer time so that it can be started and driven later. With driveability problems, both the driving conditions at the time of the problem and your individual driving style can affect the symptoms that are produced.

What could be done: An intermittent problem is among the most difficult to diagnose. As frustrating as it may be for the driver, it is equally frustrating for the technician who is trying to duplicate the problem so diagnosis can begin. Without accurate information, the technician may not be able to correctly identify a problem and may end up trying to repair something that isn't really broken. That situation would require you to return.

When a problem doesn't happen every time the vehicle is driven, assistance from the driver can help to identify the cause. Make note of the exact conditions at the time the driveability problem occurs. Write down descriptions (record them on this sheet, for example), and give them to the advisor to attach to the repair order when you bring in the vehicle. Particularly helpful for the technician would be answers to these questions:

What was the outside temperature when the problem occurred? _____

How long had the vehicle been driven? _____

Were any indicator lights on the dashboard flashing or lit up? _____

Were you accelerating or braking at the time? _____

What was the level of fuel in the tank when the problem occurred? _____

Further explanation: Giving specific information to the service advisor would help the advisor communicate with the technician. And your helpful data could speed up the technician's diagnosis and make the repair more effective in solving the problem.

HID Headlight Beams Appear Uneven

Client's concern: "My HID headlight beams appear uneven or out of adjustment."

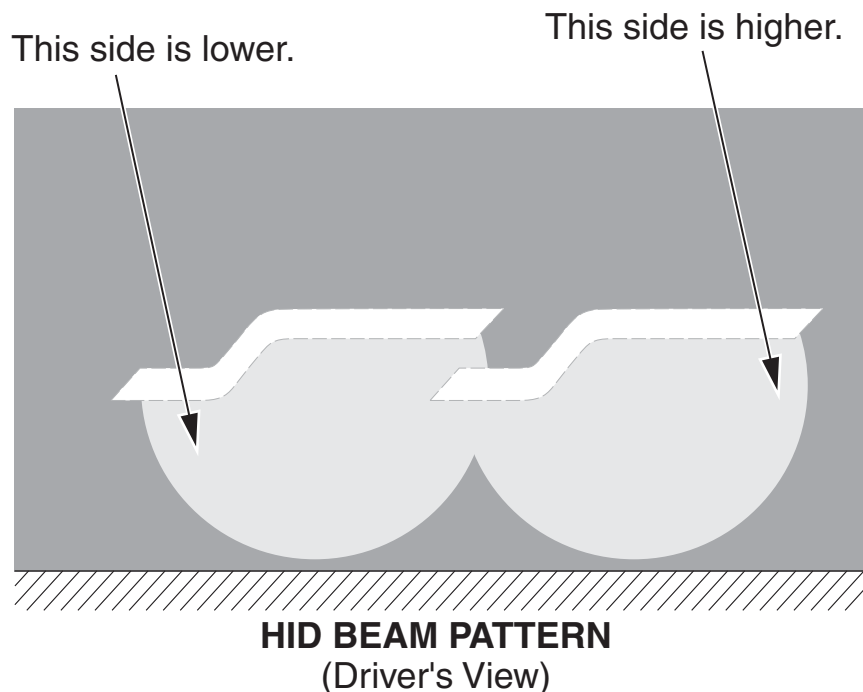
What's happening and why: The Acura models with high-intensity discharge (HID) headlights use a different beam pattern than what's found on vehicles with conventional headlights. The top edge of each headlight beam is cut off lower on the left side, and rises toward the right side (see the illustration). For this reason, when the headlights are turned on, the beam pattern can appear uneven from the far left edge to the far right edge, especially when you're closely following another vehicle or shining the headlights on a nearby wall.

This apparent unevenness in the headlight beams is a *normal characteristic* and not something to be concerned about. Although the actual beam patterns may vary between models, a typical beam pattern found on HID-equipped Acura models has these features:

Left Side: Shines lower to avoid blinding drivers of oncoming vehicles.

Right Side: Shines higher to provide good illumination of road signs and to illuminate pedestrians.

Center: Shines below the rear window of passenger vehicles you're following.



BATTERY CHARGE LOW Message

What's happening and why: For vehicles equipped with the Battery Management System, this message occurs when the battery's State of Charge (SoC), has dropped below a predetermined level. The message is intended to inform you that the battery requires charging to guarantee proper performance under all conditions (extremely cold conditions, high electrical system demands, etc).

The battery is constantly monitored by a Battery Management System. While the engine is running, this system constantly looks at the battery's charge level and determines the optimum charging rate for the current conditions in the vehicle. It provides a first indicator of low battery charge; so the system may occasionally display "Battery Charge Low" on your dashboard when your battery falls below its optimum level of charge. This helps to ensure that fuel economy and battery life is both maximized.

When the engine is not running, including times when ignition is on (the key is in the "ON" position, but the engine is not running), the battery management system is monitoring the battery's SoC to make sure there is enough charge to start the engine, no matter what the conditions may be. The battery management system even turns off interior lights that may have been accidentally left on and, if needed, it will prompt the driver to turn off lights and accessories if the ignition is on (such as when sitting in the vehicle with the engine not running and listening to the radio).

While the system does a good job of protecting the battery while minimizing the charging system's impact on fuel economy, there are conditions that may cause the battery charge to drop enough to prompt the BATTERY CHARGE LOW message. Here are some examples:

- Extended time spent with the ignition on, but the engine not running. The affect on the battery is made worse if the radio, lights, heater fan or other accessories are on at the same time.
- Driving short trips repeatedly without a longer trip between them. The starter uses a lot of energy when starting the engine. If the engine is not run long enough, the charging system cannot recharge the battery to the level it was at before the engine was started. Running high-demand electrical accessories, such as seat heaters, can make this situation even worse.
- Extremely cold weather is also hard on the battery. Not only does it require more energy to start the vehicle in the cold, but the battery just doesn't work as well.

If any of these conditions occur, and the battery charge drops below a certain level, the battery management system informs the driver that the battery may not be able to start the vehicle in extreme cases by illuminating the BATTERY CHARGE LOW warning message. While this message does mean the battery charge is low, it usually doesn't mean that the battery won't start the engine.

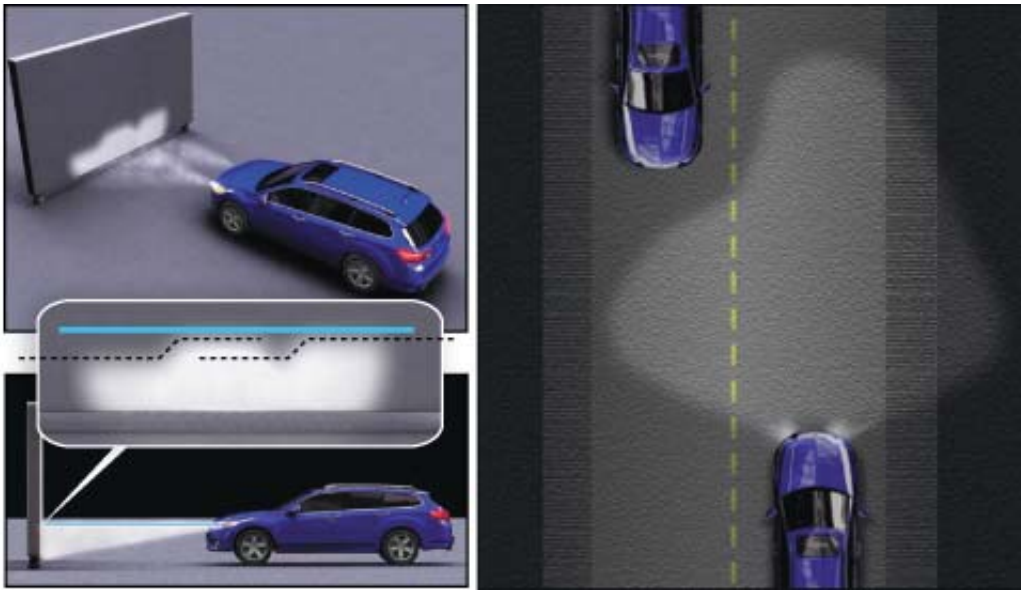
What can be done: If you see the BATTERY CHARGE LOW message, don't panic. It simply means that the battery's charge is lower than it should be. This can be fixed by taking longer trips between shorter trips, minimizing unnecessary electrical accessory usage (such as power seats) during short trips, and spending less time using electrical accessories while the engine is not running.

The battery management system is intended to protect the driver from allowing the battery charge to drop to a point where it cannot start the vehicle. By using it as a guide, not only will the life of the battery be extended, but the chances of the vehicle not starting due to a discharged battery will be greatly reduced.

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