TECHlink
GM
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A Monthly Publication for GM Dealership Service Professionals

TechLink is Now on the Web!

In response to a lot of requests, we're pleased to announce that GM TechLink is now accessible on the Internet.

Go to www.service.gm.com and locate the line that says "A Monthly Publication for GM Dealership Professionals." This will take you to the TechLink home page.

Each month, the website will contain all of the material from the current issue of the magazine, plus several past issues. Click on the desired issue to see a table of contents. Click on the title to read the article.

Have you misplaced a past issue of TechLink, and now want to re-read it? No problem. You will be able to view all of the magazines issued in 2000 and 2001 by clicking on the "Archives" heading. This will open a printable PDF file of the entire issue you select. You can print it in black and white or full color, depending on your printer.

If you want to e-mail us, click on the "Who Are We?" heading. Here, you will find hot links to our e-mail addresses, plus phone numbers and mailing addresses.

If you have any suggestions or comments, let us know what you think.

– Mark Stesney

Service Features of the 2002 Cadillac Escalade

StabiliTrak

StabiliTrak stability enhancement helps drivers keep control in all types of weather, particularly on low-friction surfaces, in emergency lane changes, and during avoidance maneuvers.

Although the Escalade StabilTrak system is conceptually the same as that used on GM cars, both the hardware and the operation are unique.

Components

StabiliTrak uses information from many sensors to calculate how the Escalade is responding to what the driver wants it to do.

Sensors and inputs include:

- Turning rate (yaw), which defines the vehicle's rotation around its vertical axis. The yaw sensor is located in the center console, beneath the cup holder.

- Lateral (sideways) acceleration and longitudinal (lengthwise) acceleration. The longitudinal accelerometer is located in the Electronic Brake Control Module (EBCM), and the lateral accelerometer is combined in the yaw rate sensor. These sensors measure cornering, acceleration and deceleration forces.

- Steering wheel position. This sensor is located on the steering column and is shared with the road sensing suspension system. The steering position is supplied to the EBCM from the Real Time Damping (RTD) module.

- Brake pressure. This sensor, located

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TECHlink GM

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GM Service Operations

GM TechLink is a monthly magazine for all GM retail technicians and service consultants providing timely information to help increase knowledge about GM products and improve the performance of the service department. This magazine is a companion to the GM Edge publication.

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in the Brake Pressure Modulation Valve (BPMV), monitors brake master cylinder pressure.

- Accumulator pressure. This switch is located in the mid-pressure accumulator and changes state when the accumulator has been pressurized.

- Wheel speed sensors. Each front wheel has its own wheel speed sensor, and the rear wheel speed is supplied to the EBCM by the PCM. The PCM determines the rear wheel speed using the vehicle speed sensor mounted on the transfer case.

There is a StabiliTrak control button located on the instrument panel. The driver can use this button to limit the operation of StabiliTrak under certain driving conditions, such as when "rocking" the vehicle when it's stuck.

The green indicator lamp, next to the StabiliTrak button on the IP, illuminates to indicate that Stabilitrak is initialized and ready to activate. Although this lamp is mounted next to the StabiliTrak button, the operation of the lamp is controlled by the EBCM; the lamp will not turn on and off when the button is pressed.

The Message Center is capable of displaying four different StabiliTrak messages:

- Stability system active indicates that StabiliTrak is presently modulating front brake pressure and/or engine power.

- Stability system limited indicates that the driver has pressed the StabiliTrak button to change the intervention threshold.

- Service stability system indicates that the system needs service and is inoperative.

- Stability system disabled indicates a temporary condition that disables StabiliTrak, but does not require repair of StabiliTrak. Three causes of this message are: 1) low master cylinder fluid level, 2) excessive activation time resulting in overheating the StabiliTrak module, and 3) excessive StabiliTrak initialization time at the start of an ignition cycle due to extremely rough road conditions.

The Electronic Brake Control Module (EBCM) and Brake Pressure Modulation Valve (BPMV) are combined into one unit, and are included in the integrated ABS system. This unit is mounted to the frame rail, beneath the driver's seat.

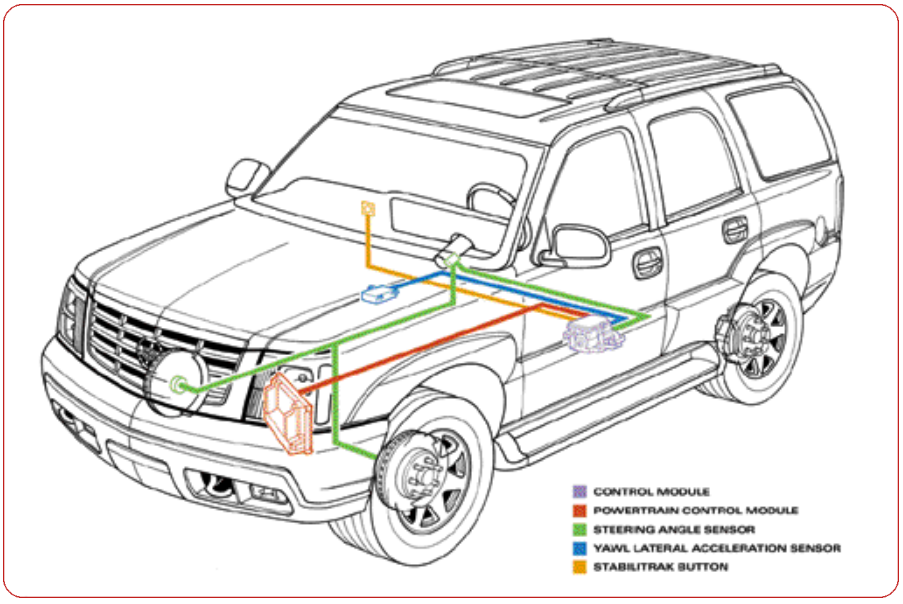
Initialization

At the beginning of each driving cycle, the StabiliTrak system performs an initialization process. Some of this may be perceived by the driver.

The ABS pump runs for a few seconds to charge the mid-pressure accumulator with brake fluid, under high pressure. This fluid ensures that, even under cold operating conditions, the system is capable of building sufficient pressure quickly when it's needed. If the driver applies the brakes during the few seconds when the accumulator is charging, the charge cycle will terminate and restart when the brakes are released.

Operation

When the vehicle is being driven, StabiliTrak is in a ready mode. When it is needed, individual front brake pressure or engine power is adjusted to help the Escalade turn more or less in response to



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the driver's steering inputs during unexpected conditions.

For example, if the vehicle does not turn as much as desired, because of slippery conditions, an individual inside brake will be applied to help the vehicle turn. This is called understeer correction.

Depending on the amount of understeer correction needed, engine power may also be temporarily decreased.

If the vehicle turns more rapidly than appropriate for the steering wheel position, an outside brake is applied. This is called oversteer correction.

The StabiliTrak system operates in cooperation with the standard all-speed traction control system, which reduces wheelspin during acceleration on slippery surfaces by reducing power.

The Escalade StabiliTrak system is calibrated to function transparently to the driver, far less noticeably that on competing vehicles. The Stability System Active readout in the instrument panel display indicates that StabiliTrak is functioning.

StabiliTrak Service Issues

Service replacement parts will be on restriction for the first calendar year.

The accumulator sensor and brake pressure sensor are serviceable separately.

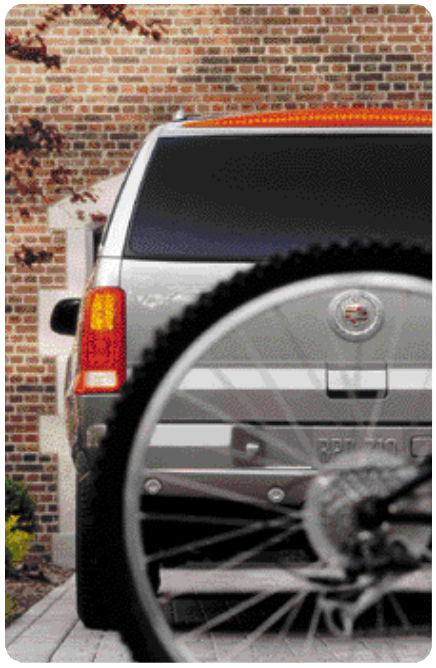
The StabiliTrak system has over 80 diagnostic codes, about half of which are shared with the ABS system.

Be prepared to explain to the owner that during each driving cycle, it is normal for the pump to run audibly for 2-3 seconds. This is not a malfunction.

And be prepared to explain that the green ready lamp next to the StabiliTrak button comes on only after the vehicle has been driven in a straight line and above 10 mph. This permits the control unit to determine the relationship between steering wheel angle and yaw and lateral acceleration values. And the lamp does not turn on or off by pressing the StabiliTrak button. Neither of these operating conditions is a malfunction.

Rear Park Assist

The Ultrasonic Rear Park Aid system is not unique to the Escalade; it's used on other Cadillacs as well. But it represents the first time it's been used in a GM sport utility vehicle.



URPA uses four high-frequency sound transmitter-receivers mounted in the rear bumper to help sense certain stationary objects immediately behind the Escalade and signals with lights and sound how close the vehicle is getting to the objects. It operates in reverse up to 3 mph.

A disable switch on the instrument panel is used when towing a trailer or carrying an oversized object in the vehicle. This prevents URPA from signalling when it's not desired.

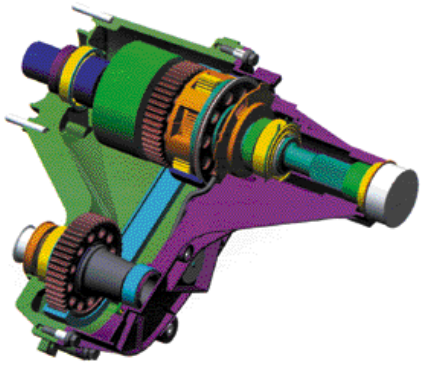
New Engine

The all-wheel drive 2002 Escalade comes equipped with an exclusive Vortec High Output 6000 engine (LQ9). Output is 345 hp, the highest of any SUV in the world. It offers power for passing, hill climbing, and towing.

The LQ9 includes a 3-piece engine cover for reduced underhood noise and enhanced appearance. The electronic throttle provides precise control, and minimized noise and vibration transferrence by eliminating the mechanical linkage. And the LQ9 is designed for up to 200,000 mile durability.

Platinum tipped spark plugs last up to 100,000 miles

The transmission fluid can last up to 100,000 miles of normal driving conditions.



Transfer Case

The cooling system is filled with long-life Dex-Cool, for up to 5 years, or 150,000 miles without replacement. And, a limp home mode permits driving a limited distance without coolant.

All Wheel Drive System

Escalade offers a full-time all-wheel drive system with no buttons to push or controls to move. It sends 62% of the engine's torque to the rear wheels for optimum performance under normal conditions. A viscous coupling controls wheel slip. Torque transfers to the wheels with the most grip if a wheel starts to slip during acceleration.

A two-wheel drive is optionally available.

There's also a standard locking rear axle for enhanced low-speed traction.

– Thanks to Doug Cesiel and Saundra Massingille.

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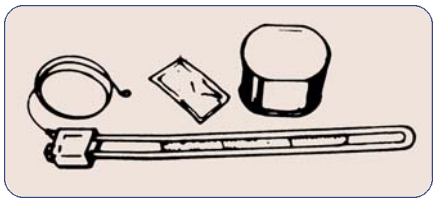
Diagnosing Crankcase Pressure

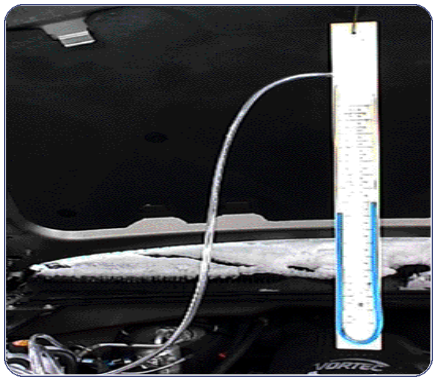
What's the first thing that comes to mind when you're diagnosing oil leaks? Oil dye and a black light, maybe? Diagnosing oil consumption? Removing spark plugs and checking for signs in the combustion chamber? These are great ideas, but your



J-23951 Manometer

diagnostics can be aided by first measuring crankcase pressure using a commonly available tool. But what is a "good" value for crankcase pressure? Where does crankcase pressure come from? What can happen when crankcase pressure is not normal? This article will help you understand the theories of crankcase pressure and its potential indications.

If we could perfectly seal the combustion chamber between piston and cylinder



Homemade Manometer Showing Vacuum at Idle

wall, there would not be any appreciable cylinder block pressure. But, in fact, while piston rings attempt to do the job for us, in the best applications they can seal only about 95% or less of the pressure developed in the combustion chamber. This "blow-by", comprised mostly of unburned mixture of air and fuel, needs to be managed back into the intake stream for emissions purposes. In early engines, the crankcase was vented directly to the atmosphere, using a road draft tube, which contributed to air pollution.

This is why, in the 1960s, the PCV (positive crankcase ventilation) system was introduced. The PCV system uses intake vacuum to purge these gases from the crankcase by pulling fresh air through. A gasoline engine PCV system always has a fresh air intake for the crankcase.

Diesel engines also have a crankcase pressure management system, (CDR or Crankcase Depression Regulator) but usually work without a fresh air intake. Remember, diesel engines have no intake vacuum, so their crankcase ventilation systems are different. However, the same crankcase pressure testing procedures still apply, with the same results if the readings are out of range. Diesel crankcase pressure testing is found in Section 6 of the service information.

So what are the indications of improper crankcase ventilation?

- Excessive crankcase pressure = oil leaks or oil odors.

- Excessive crankcase vacuum = oil consumption through the PCV system or engine performance issues.

The pressure specifications vary with engine family and are not published in the service manual, so a known-good vehicle is the best reference.

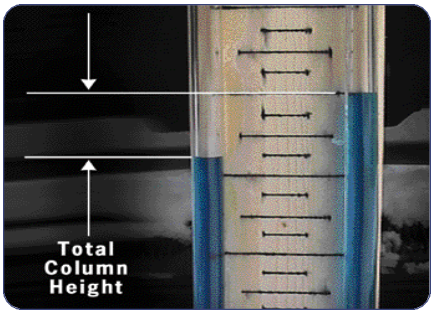
Tools Required

You will need a water manometer (J-23951 or equivalent) to do the testing. This tool is designed to measure small amounts of pressure or vacuum. Originally the tool was issued for adjustments on 1980s Cross-Fire V8s and for diesel engine CDR valve testing. It is on the tool inventory in most dealerships. If you do not have one, it is simple enough to make out of some clear polyvinyl tubing available at hardware stores. 1/4-inch tubing is a good choice. Just permanently attach the tubing to a board or other rigid surface and make some inch graduations to reference your measurement. Water in the tubing should be dyed slightly with food coloring for visibility.

Crankcase Pressure Test Procedure

The procedure is simple. Attach the tool to the crankcase at the dipstick tube. Simply remove the dipstick and install the hose. An adapter may be necessary, as some dipstick tubes are bell shaped. Often technicians use an adapter from a vacuum gage.

Reading the tool is easy. The water column shifts, based on pressure or vacuum



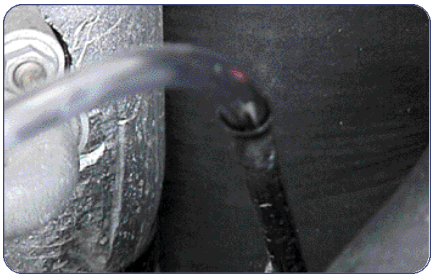
applied to the reference fluid. The total difference in column heights is the reading. Next, observe whether you have pressure or vacuum. Fluid shifting toward the crankcase indicates vacuum, away from the crankcase indicates pressure.

Crankcase pressure is usually checked after reaching operating temperature at idle and various higher RPMs. You may wish to check at idle, 1500 RPM and 2500 RPM. Typically, readings between zero and 2 inches of water vacuum are considered acceptable. Any readings in excess of 2 inches of water vacuum or indications of positive pressure in the crankcase should be referenced against a known-good unit. You may want to start your own database of readings for the engine families that you typically work with. So what are some potential problems?

Interpreting Your Test Data

Excessive Crankcase Pressure

If the crankcase pressure is too high, the PCV system may be plugged or restricted, or the wrong PCV valve may be installed. Inspect the PCV related components and vacuum supply. The engine may also have excessive blow-by in the cylinders. Follow up with a cylinder compression and leak-down test. As for oil leaks,



Manometer Hookup at Dipstick Tube

remember that replacing a leaking rear main seal for example in an engine with high crankcase pressure may not fix the leak at all.

Excessive Crankcase Vacuum

If the crankcase has excessive vacuum, again the wrong PCV may be installed or the PCV fresh air inlet may be restricted. In cases of oil consumption, always inspect the PCV system closely for signs of excessive oil migration. Also note that PCV flow-related idle quality, stalling and other performance issues can be identified with crankcase pressure testing.

Well, we hope this article will make you think about the crankcase pressure as a diagnostic aid. Get out there and find that water manometer or make your own, and start to build your personal known-good crankcase pressure database.

– Thanks to Craig Blake

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Fuel Gauge Diagnostic Tips

Fuel gauges have come a long way during the history of the automobile. Early motorists had to dip a stick directly into the fuel to check the depth. This was followed by a mechanical system, with an indicator linked to a floating cork. Then for years, the electric fuel gauge was operated by a float and variable resistance sending unit.

Now, we're in the microprocessor age. On most cars and trucks today, a variable resistance sender in the fuel tank is connected to the vehicle's PCM. The PCM translates variable voltage into a digital percent signal and puts it onto the Class 2 data bus. And the fuel gauge in the electronic instrument cluster interprets the percent signal into a readout on a scale ranging from Empty to Full.

Ask yourself this -- is your fuel gauge diagnostic technique stuck in the floating cork era? If so, here's how to bring yourself squarely into the digital age.

The steps you take must be guided by the customer's concern. Is the fuel gauge totally inoperative? Is the readout inaccurate or inconsistent?

Although the first temptation may be to replace the cluster, don't jump to that conclusion. You may be surprised to learn that a faulty fuel readout may be caused by any number of conditions having nothing to do with the gauge. Follow the recommended diagnostic steps.

Standardized Diagnostic Charts

In recent years, GM has gone to great lengths to standardize diagnostic procedures so they will be as nearly the same as possible from model to model. For instance, the fuel gauge diagnostic procedures were standardized beginning in the model year 2000.

To locate the new diagnostic charts for model year 2000 and later:

- Open SI 2000

- "Build" the vehicle

- Select Service Manual

- Select Body and Accessories

- Select Instrument Panel, Gauges and Console

- Select Diagnostic Information and Procedures

Here, you will find a long menu of choices. Begin with the Diagnostic Starting Point, and choose Diagnostic System Check -- Instrument Cluster.

Diagnostic System Check

The System Check will accomplish several important things, including checking that the electronic modules involved are capable of communicating on the Class 2 data bus. It will turn up any stored diagnostic codes, and it may lead you to a list of symptoms.

Follow the steps as you are guided by the diagnostic chart. Don't skip a step, and don't jump around.

If you find that the Class 2 communication is not functioning properly, or that there are stored codes, you must deal with them before proceeding.

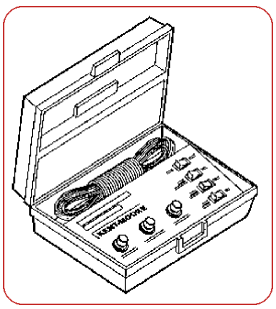
You must also be sure you are familiar with the descriptions of circuit and system operation, as described in the appropriate sections listed in the diagnostic chart. And you must perform a visual inspection.

Symptom List

Once you have accomplished all of these steps, you will reach the Symptom List. One of the choices is Fuel Gauge Inaccurate or Inoperative, which clearly describes our hypothetical customer's concern. Now, you're ready to perform the necessary diagnostic and test procedures,

J-39200

using the recommended tools. You'll need your Tech 2, the J-33431-C Signal Generator and Instrument Panel Tester, and your J-39200 Digital Multi Meter.



J-33431

We're not going to describe the diagnostic steps in detail here. They vary somewhat among various vehicles, so the diagnostic charts are very thorough, and customized for each vehicle.

But let's take a look at some of the principles you'll be using.

Diagnostic Principles

DIAGNOSTIC TIP: In earlier systems, a short to ground in the signal circuit would default the gage to zero. But now, in most systems, when the PCM notices a fault in the fuel level signal circuit and sets a diagnostic code, it automatically sends the command to the cluster to default the gage to zero.

The service manual includes a Fuel Level Specifications chart, with values specific for each vehicle. It includes a range of fuel tank sender resistance values. For each value, there's a corresponding fuel gauge display (E, 1/4, 1/2, and so on), and several values you can read on your scan tool. These may include system voltage, fuel level (%), and fuel remaining (in gallons).

By disconnecting the sender circuit near the fuel tank, you can perform numerous tests. On some vehicles, there's an access panel in the trunk. On others, there's an inline connector you can unplug somewhere in the vicinity of a rear wheelhouse. Use the Component Locator if you're not sure where to find it.

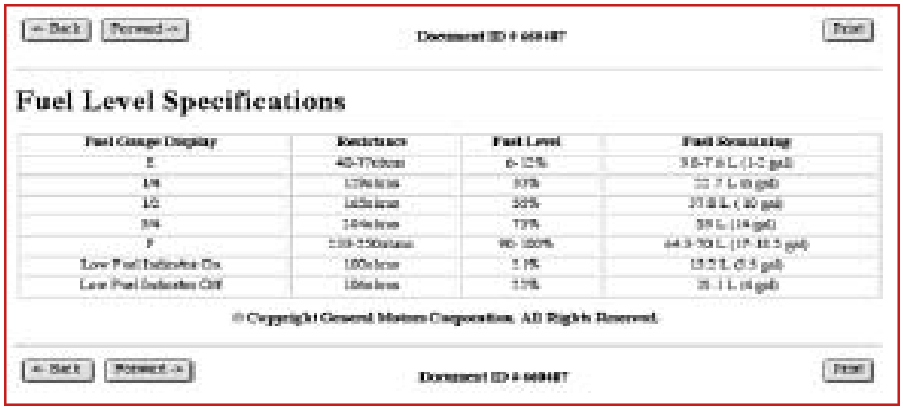
At this connector, you can connect the IP Tester and use it to substitute for the sending unit. Observe the IP fuel gauge operation and check the Tech 2 readouts to see if they conform to the values in the Fuel Level Specifications chart. If not, the diagnostic chart will tell you what to do about it.

You can also use your DMM to check the integrity and resistance of the circuit through the sender in the fuel tank.

The diagnostic chart is organized to place the easiest-to-check items first, and the most difficult last. That way, you don't have to remove the fuel tank except as a last resort.

If you follow these diagnostic charts carefully, you will correct the condition in the least amount of time, and with the least amount of effort. Perhaps most important, you will be able to systematically and confidently locate and correct the actual cause of the customer's concern. And it just might not be the fuel gauge, after all.

– Thanks to Jamie Clough



Fuel Level Specifications

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2002 Headliner Replacement

The 2002 Chevrolet Trailblazer, GMC Envoy, and Oldsmobile Bravada are equipped with a one-piece headliner. These headliners include some new features you should be aware of before attempting service.

Several wire harnesses are hot-glued to the headliner substrate and continue down the body pillars. The harnesses are part of the headliner assembly. When necessary, you should replace the wire harnesses and headliner only as an assembly.

Remove the headliner and headliner harness as an assembly. Do NOT cut or splice the headliner harness. Cutting or splicing the harness may damage the coax cable, resulting in poor radio performance.

Electrical connectors and service loops are provided to all components that are part of the headliner assembly.

The sunshades and antenna modules can be disconnected from the headliner harness and serviced separately after the headliner has been partially lowered. There are two antenna modules, one above each of the fixed side windows, near the coat hooks. The antenna modules are attached to the headliner with hook-and-loop fasteners.

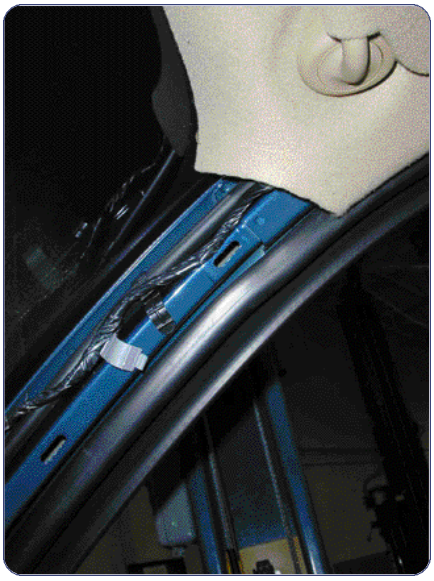
The cargo lamp, courtesy lamps and overhead consoles can be fully serviced without lowering or removing the headliner. The assist handles, coat hooks and navigation (GPS) antenna, ahead of the rear view mirror, can also be serviced with the headliner installed.

Headliner Harnesses Routed Along the Body Pillars

The headliner wire harnesses are routed along the vehicle's body pillars and do not provide service connectors at the roofline. You must trace the harness to each component and disconnect the harness there. The only exception to this is the inline electrical connectors located behind the instrument panel storage compartment. These two connectors are the coax cable connector and the power and ground connector for the antenna modules.

Headliner Harness Routed Along the A-Pillar

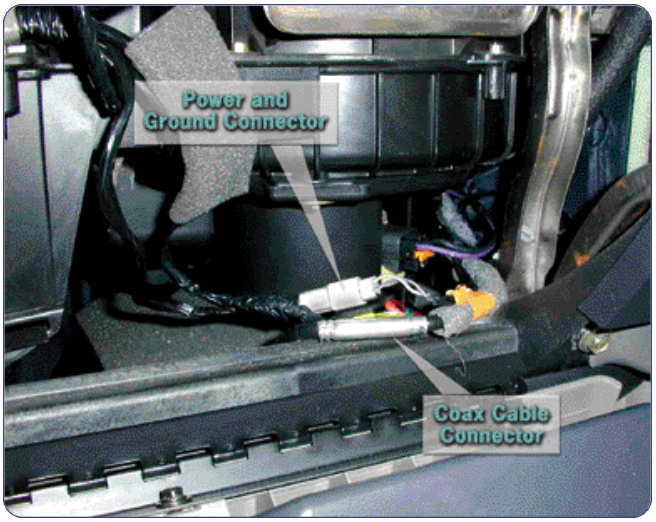
After you remove the right A-pillar trim panel, do not cut the headliner harness. Wrapped within this harness is the coax cable that attaches to the two radio



Headliner harness at A-pillar

modules. Cutting the coax cable or introducing a splice during installation is not a recommended method for headliner removal. If the radio coax cable is cut or spliced, the reception performance will be affected.

The recommended method is detailed in the service manual. Here are the highlights.



Connectors behind storage compartment

Remove the right A-pillar trim panel. Disconnect the 3 headliner harness attachments clips from the A-pillar.

Remove the right sound/insulator panel and the right front door sill plate. Unlatch the IP storage compartment and lower it to a full down position. Disconnect the coax cable and power connector located behind the instrument panel storage compartment. Secure a mechanic's wire to the end of the coax cable and power connector (headliner harness). Detach the lower rosebud retaining the headliner harness to the side cowl. This rosebud is located between the instrument panel and the side cowl. Grasp the headliner harness near the bottom of the windshield and pull upward in order to remove the harness from behind the instrument panel. Disconnect the headliner harness from the mechanic's wire. Leave the mechanic's wire positioned behind the instrument panel to assist in installation of the harness later.

Headliner Harnesses Routed Along the B-Pillars

Other wire harnesses route along the left and right B-pillars. The connectors for these harnesses are located at the corresponding electrical component. The components that you will have to locate and disconnect are the OnStar® module and bussed electrical center which are both positioned under the second row seats. You will need to remove the B-pillar trim panels and the remaining sill plates in order to detach the wire harnesses from the rocker panels.

The second row seats will have to be removed to gain accesses to the inline electrical connector located beneath the carpet. This connector is attached to the instrument panel wire harness and is located inboard from the bussed electrical center.

Replacing or Servicing the Sunroof

Replacing the sunroof or one its components does not necessitate the removal of the headliner from the vehicle. Work space for any procedures that are to be performed on the sunroof can be achieved by lowering the headliner. To gain workspace between the lowered headliner and the roof, adjust the rear seats to a cargo position. Remove the head restraints from the bucket seats and recline the bucket seats to a full back position. Then follow the headliner removal procedure in the GM service manual before lowering the headliner. With the seats in this position, there will be approximately 20 inches of access room to service the sunroof.

– Thanks to Andy Slawick

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HomeLink® Transmitter Tester

HomeLink® Universal Transceiver is a feature installed in many GM vehicles. It provides remote operation of garage doors, estate gates, home lighting, and other accessories, using a 3-channel transceiver built into the vehicle. A major advantage of the HomeLink Universal Transceiver is that it can be programmed to substitute for

three different transmitters, so the vehicle owner doesn't have to carry them in the vehicle.

HomeLink is powered by the vehicle's electrical system, eliminating the need to maintain batteries in the individual transmitters.

Testing the HomeLink transceiver for malfunctions is now simplified by using the new Integrated HomeLink Test Kit J-41540, which is being shipped to dealers beginning in March.

The kit includes a HomeLink Tester, a Hand Held Transmitter, and a 120V-to-12V power supply. The Tester may be operated from the vehicle's accessory outlet and from the kit's power supply.

Complete instructions are supplied with the test kit, and you should follow them when performing the tests. Here are some highlights.

Functionality Test

The Functionality Test establishes:

- That the Tester (receiver) from the kit is functioning

- That the Hand Held Transmitter from the kit is capable of transmitting

- That the HomeLink Transceiver is getting power from the vehicle

- That the HomeLink Transceiver can be placed in the Default Mode This is a special mode used only for testing. It is not the same as the Training Mode used by the customer to program the HomeLink Transceiver.

- That the HomeLink Transceiver is capable of transmitting

The instructions explain how to perform each of these tests and what to do in case of a failure.

Range Test

The Range Test establishes:

- That the signal from the HomeLink Transceiver extends from the vehicle for a distance of 50 feet

The instructions explain how to perform the test and what to do in case of a failure.

Training Test

The Training Test establishes:

- That the HomeLink Transceiver is capable of being trained (programmed), in this case using the Hand Held Transmitter from the kit

- That the trained HomeLink Transceiver is capable of operating the appropriate device (in this case, the Tester from the kit) from a distance of 50 feet

The instructions explain how to perform each of these tests and what to do in case of a failure.

Garage door openers manufactured before 1982 may not be compatible with the HomeLink system. The fact that the HomeLink Transceiver in the vehicle passes the test procedure does not guarantee that it will work with an older system. A fix kit is available from Stanley for some older systems.

Once you have used the test kit to establish that the HomeLink Transceiver is functioning properly, be sure the owner understands how to train the HomeLink Transceiver, using their own hand held garage door transmitter. (You may offer to train the HomeLink Transceiver, using the customer's transmitter, as a special service.)

In the case of some rolling code systems, the receiver of the garage door opener may also need to be trained, following instructions in the owner's manual.

Owners who require special programming assistance, or who want to purchase HomeLink accessories, may call 1.800.355.3515, or visit the website at www.homelink.com.

- Thanks to Dave Roland, Dave Nowak, Brian Preusser, and Nisa Huyser.

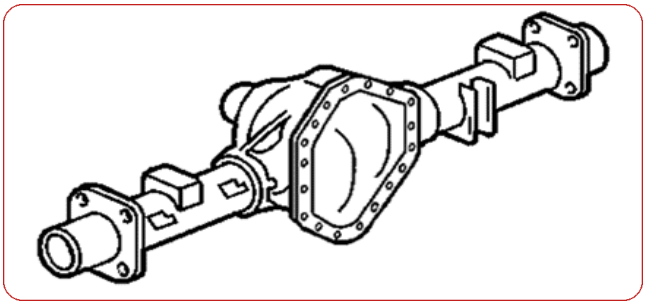
Rear Axle Lubricant

Because drive axles must be designed and built for a wide variety of conditions and purposes, they don't all use the same lubricant or have the same service requirements.

Which lubricant should you use in which rear axle? How often should the lubricant be checked? Or replaced? Help is on the way.

Bulletin 01-00-90-001A contains an extensive table of the 2000 and 2001 model years, models, usage, recommended lubricant, and recommended maintenance intervals and requirements. It covers rear drive axles for both cars and trucks.

You should always consult this bulletin before adding or replacing rear axle lubricants. You should not rely on memory. Here are some important facts you can learn from studying the bulletin.



Required lubricants and/or service intervals:

- may vary between model years for the same vehicle

- may vary on a vehicle depending on whether it's a locking or non-locking differential

- may vary on a vehicle, depending on ring gear size

- may vary depending on driving conditions, vehicle use, or trip lengths

- may or may not need to be drained and replaced, or may simply need to be checked and topped off.

– Thanks to Jerry Garfield and Tim Dobbs

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Bulletins - February 2001

This review of service bulletins released through mid-February lists the bulletin number, superseded bulletin number (if applicable) subject and models.

GENERAL INFORMATION:

99-00-89-019A; replaces 99-00-89-019; Warranty Parts Center/Corporate Parts Return Program; 2001 and Prior Passenger Cars and Trucks

00-00-89-031; January 1, 2001 Labor Time Guide Updates; 1996-2002 Passenger Cars and Trucks

01-00-89-001; December, 2000 Bulletin Summary; 2001 and Prior Passenger Cars and Trucks

01-00-90-001; Recommended Rear Axle Lubricant; 2000-01 Rear Wheel Drive Passenger Cars, Light Duty Trucks and Four Wheel Drive Models

HVAC:

00-01-38-003A; Popping Sound Heard Underneath Instrument Panel When Switching from Defrost to Heat or from A/C to Defrost (Replace Mode Valve Actuator); replaces 00-01-38-003; 2000 Chevrolet Impala, Monte Carlo

01-01-38-001; Air Conditioning Compressor Shaft Seal Replacement; 2001 Passenger Cars and Light Duty Trucks, except Cadillac DeVille and Seville, Chevrolet Metro, Prizm, Tracker and Venture, Oldsmobile Aurora and Silhouette, Pontiac Aztek and Montana

STEERING:

01-02-32-001; Clunk Noise From Front Of Vehicle During Turning Maneuver/Steering Wheel Rotation (Install New Shaft); 1997-2001 Chevrolet Cavalier and Pontiac Sunfire

SUSPENSION:

00-03-10-008; Unable to Lower Spare Tire (Install Spare Tire Cross Brace); 1999-2001 Chevrolet and GMC C/K Pickup Truck Models (Silverado and Sierra)

01-03-08-001; Revised Fastener Tightening Specifications; 2000 Chevrolet and GMC C/K Pickup and Utility Models (Classic), 2000 Cadillac Escalade

DRIVELINE AXLE:

01-04-20-001; Getrag Rear Drive Axle -- Revised Setup and Measurement Procedures Using Tool J-42168; 1997-2001 Chevrolet Corvette

BRAKES:

01-05-22-001; Clunk, Rattle Noise from Front of Vehicle (Replace Brake Pedal Assembly); 1997-2001 Chevrolet Malibu, 1997-1999 Oldsmobile Cutlass, 1999-2001 Oldsmobile Alero and Pontiac Grand Am with Automatic Transmission

ENGINE/PROPULSION SYSTEM:

01-06-01-002; Revised Piston Pin Removal/Installation Procedures; 1994-2001 Vehicles with 3.1L or 3.4L Engine (VINs J, M, E -- RPOs LG8, L82, LA1)

01-06-01-004; Hoot/Whistling Noise At Startup During Cold Ambient Temperature (Replace Idler Pulley Assembly); 1998-2001 Chevrolet Cavalier and Pontiac Sunfire with 2.2L Engine (VIN 4 -- RPO LN2)

TRANSMISSION/TRANSAXLE:

00-07-30-026; replaces 66-71-03A; Automatic Transmission 1-2 and/or 2-3 Upshift Slip/Flare, No 3rd or 4th Gear, Launch Shudder (Revise VCM Wiring); 1996 Chevrolet and GMC C/K, S/T, M/L, G1, G2, P3 Models, 1996 Oldsmobile Bravada with VCM and 4L60-E (MT1) Automatic Transmission

BODY AND ACCESSORIES:

00-08-42-011; Intermittent Dead Battery (Install Diode/Connector); 2000-2001 Chevrolet Impala Police Vehicles Equipped with Emergency Rear Compartment Lid Lamp Package (RPO T53)

00-08-48-005; Distortion in Outer Surface of Vehicle Glass; 2001 and Prior Passenger Cars and Trucks

00-08-50-017; Seat Armrest Breaking (Repair Armrest Using Service Kits); 2000 Chevrolet and GMC M/L-Van Models Built Between September 20, 1999 and March 31, 2000

00-08-64-018A; replaces 00-08-64-018; Rear Door Window Inoperative (Replace Rear Door Window Motor); 2000-2001 Chevrolet and GMC C/K Utility Models

00-08-64-019; New Rear Door Outside Handle/License Plate Housing; 1996-2000 Chevrolet and GMC G-Van Models

01-08-64-001; Front Floor Carpet Wet/Musty Odor (Replace Rear Door Water Deflector); 2000-2001 Chevrolet and GMC C/K Utility Models (Suburban, Tahoe, Yukon, Yukon Denali)

01-08-64-003; Window Motor Noise (Replace Motor); 1998-2000 Chevrolet Camaro and Pontiac Firebird

RESTRAINTS:

00-09-40-004; Revised Seat Belt Retractor Replacement - Front Procedures; 1999-2000 Chevrolet and GMC C/K Pickup and Utility Models

TechUpdates

Cold Start Difficulty

Customers may comment that their 2001 Sonoma, S-10, Bravada, Jimmy, Envoy or Blazer equipped with a 4.3L engine exhibits a click/no start condition in cold weather, but starts after repeated key cycles or when the temperature rises above 32° F. After the initial click, the drive gear may stay engaged and result in a no click/no start on future tries in cold weather.

If the starting and charging systems check OK, the problem is most likely starter solenoid contact icing. SPO has been shipping starters with a solenoid icing fix since January 21, 2001. The part number is the same for all 2001 starters, 10465520. The starter with the icing fix has a yellow paint dot on the bottom of the starter nose.

The following procedure sometimes works to start a vehicle with starter solenoid contact icing. Hold the key in the crank position for twenty seconds, then allow the solenoid windings to cool for thirty seconds. Repeat this procedure two additional times. If the vehicle is going to start, it will do so within three tries.

– Thanks to Dan Oden

Sunroof Sunshade Stops

97-2001 Grand Prix, 98-2001 Malibu, 2000-2001 Impala/Monte Carlo

Some dealers may be replacing the entire sunroof module ($1250) when the sunroof shade plastic stops ($10) break. Dealers may not be aware that many of the individual components associated with the Webasto sunroof assemblies used in the above listed vehicles are serviced separately, including the sunroof sunshade plastic stops.

Individual sunroof components are found in groups 12 and 14 in the parts catalogue.

If there are any questions regarding components that are serviced seperately, Webasto has a technical assistance number, 1.800.995.5911. Always submit field product reports on vehicles requiring complete sunroof assemblies to the appropriate Brand Quality Manager.

– Thanks to Fred Tebbets

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