

A Monthly Publication for GM Dealership Service Professionals

2004 Secondary AIR Injection System



The Secondary AIR system used in the 2004 TrailBlazer, Envoy, Rainier and Bravada with the 4.2L in-line 6-cylinder engine incorporates a new AIR pump and an electronic AIR shut-off valve.

AIR System Operation

AIR is an emission control system that forces fresh air into the exhaust system

to accelerate catalyst operation. This reduces HC and CO emission levels.

The AIR pump normally operates for approximately 20 seconds on start-up when the coolant temperature is between 37° and 122° F (3° and 50° C) and the ambient air temperature is between 32° and 304° F (1° and 151° C).

Notice that the AIR pump is inhibited

What's New in Diagnostic/Special Functions

A new feature is being phased into the Tech 2, beginning with TIS satellite version 9.0, Tech 2 software version 23.005, released late in August. Software version 23.005 must be installed for this feature to work.

This information applies to most 2004 vehicles. And initially, it will operate on most body systems (such as radio, door modules, OnStar, BCM, HVAC, liftgate module, IPC module), chassis and power-train.

The new feature has to do with Request Information, which is a necessary step in programming a module.

In the past, you had to go to the Diagnostics menu to perform diagnostic functions. Then, if diagnosis indicated that it was necessary to install a new module, you had to exit Diagnostics and go back to the Service Programming System menu to Request Information. This had two drawbacks. First, you had to "build' the vehicle again. And when the Request Information function was performed, the Tech 2 downloaded information from every module on the vehicle, not just the one you were working on. Both of these steps took time.

TIP: Get in the habit of trying this feature, even though it's not available on all vehicles yet. If it doesn't appear when diagnosing a specific vehicle, the tool isn't faulty – it just isn't supported yet.

With the new feature, when you're in Diagnostics, you will be able to go directly to Request Information in the Special Function menu. This has three immediate timesaving advantages. First, you don't have to leave Diagnostics. Second, this means that you won't have to "rebuild" the vehicle. And third, only the module you're working on is commanded to download information. All the other modules on the vehicle remain uninvolved. when the ambient temperature is below freezing, to prevent damage if moisture is present in the pump. And when the engine is at operating temperature, the AIR pump is inhibited, because the catalyst is warm enough to start operating efficiently.

Features of the New AIR Pump

The AIR system consists of the AIR pump, AIR pump relay, AIR solenoid relay, electronic shut-off valve, pipes and related wiring.

The AIR pump and AIR pump relay are located on the underbody of the truck, beneath the driver's seat.

The new AIR pump is a centrifugalimpeller type and is hermetically sealed. The case is sonically welded and pressure tested against water leaks. The bearings are permanently lubricated and sealed, and require no maintenance.

The AIR pump's inlet and outlet pipefittings are different diameters to prevent incorrect pipe connections.

Current Draw

An interesting property of a centrifugalimpeller pump is that if there is a restriction, or no air is flowing, the pump has to perform less work. The motor runs faster

continued on page 3



Contents

2004 Secondary AIR Injection System	 .1
What's New in Diagnostic/Special Functions	 .1
Right Front Speaker Rattle	 .2
Starter Cranks After Key is Released	 .2
Module Application and Programming for 2004	 .2
Ashtray Repair Spring	 .З
OnStar Goes Digital	 .4
Repairing Napped Fabric	 .4
OnStar Introduces Factory Activation	 .5
Upgrading Factory Installed OnStar Gen 2.0	 .5
Trap Alert Sensor Service	 .5
Active Digital Wheel Speed Sensors	 .6
Lock/Unlock Verification with RKE	 .6
Rear Storage Compartments	 .6
Adjustable Pedals	 .7
TAC New Product Action Centers	 .7
Intermittent Dead Battery	 .7
SRX Tire Rotation	 .7
Fix It Right the First Time	 .8
Know How Broadcasts for November	 .8

continued on page 2

GM

What's New — from page 1

TIP: Once Request Information is performed on the new module you've just installed, you will then have to connect your Tech 2 to TIS to download the latest calibrations.

Right Front Speaker Rattle

A rattle or buzz from the right front speaker on a 2000-04 Sunfire or Cavalier may be generated by the door trim panel upper extension covering the exterior mirror mount (commonly known as the shark fin). Before replacing the speaker, verify that the shark fin is **TIP:** When you reconnect the Tech 2 to the vehicle to program the module, you must use the Service Progarmming System menu.

- Thanks to Mark Stesney

not the concern. Apply pressure to the shark fin at the forward lower corner. If the rattle diminishes, repair the concern by removing the trim panel (refer to SI Document I# 1043347). Add a foam block to the forward lower corner to dampen the low frequency vibrations. Install the trim panel and tighten the screw to 1.3 Nm or 12 lb in.

- Thanks to Mark Alward

Starter Cranks After Key is Released – Reminder

Refer to bulletin 03-06-03-001. These are the highlights.

Owners of 2003 C/K trucks with the 5.3L Engine (VIN Z – RPO L59), and 2004 C/K trucks with any engine, may comment that the engine starter continues to run after the key is released (ghost crank).

This is a normal condition and no repairs should be attempted for this condition. On these vehicles, the starter relay is controlled by the PCM, with input from the key switch. After 0.4 seconds of cranking, a timer is activated in the PCM. Once this happens, even though the key is released, the PCM will continue to crank the starter until the engine starts or a no-start time limit is reached.

The fuel pump module may take several seconds to build fuel pressure, particularly after sitting overnight. The automatic crank feature ensures sufficient crank time even if the customer releases the ignition switch prematurely.

- Thanks to Jim Mauney and Jay Dankovich



Programming Corner

Module Application and Programming for 2004

A number of modules included on cars and trucks need to be configured to the vehicle when a replacement is installed. A table has been prepared to cover all cars and light duty trucks for the 2004 Model Year. Go to the TechLink website at <u>http://service.gm.com</u>. The 2004 table, as well as the 2003 table, are found under the Reference Guide tab.

The table indicates the type of action required; you must refer to SI 2000 for procedures and details.

The modules listed across the top of the table require configuring to the vehicle after installation. All of the vehicles are listed in the left column. Here's how to interpret the symbols in the table.

- **S** indicates need for SPS (service programming).

- **O** indicates set-up required with or without Tech 2
- A indicates actuator set-up is required.
- **T** indicates an on-vehicle tire pressure monitor programming procedure is required using special tool J-41760

These symbol interpretations also appear in the bottom-left corner of the table.

The following modules may be installed on certain vehicles, but require no action, so they are not included in the table:

- Heated Seat Module
- Head Up Display
- Rear Park Assist
- Driver Information Center
- CD Changer
- Fuel Injector Control Modules (for alternative fuel vehicles only)

- Thanks to Lindsey Beauchamp



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General Motors service tips are intended for use by professional technicians, not a "do-it-yourselfer." They are written to inform those technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Properly trained technicians have the equipment, tools, safety instructions and know-how to do a job properly and safely. If a condition is described, do not assume that the bulletin applies to your vehicle or that your vehicle will have that condition. See a General Motors dealer servicing your brand of General Motors vehicle for information on whether your vehicle may benefit from the information.

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2004 Secondary AIR Injection System — from page 1



and current draw is lower. Earlier AIR pumps were a regenerative turbineimpeller type that works harder as the restriction increases. An internal circuit breaker can help prolong the life of the



AIR pump in a constant run situation, like a stuck-closed AIR pump relay.

TIP: If a problem exists in any of the AIR pump motor circuits, the circuit breaker may allow the pump to operate intermittently to prevent motor damage.

Possible causes include:

- a short to voltage in the supply voltage circuit of the AIR pump
- a shorted (sticking closed) AIR pump relav
- a short to ground in the control

circuit of the AIR pump relay.

DO NOT conclude the AIR pump is at fault if pump operation is intermittent.

The in-rush current of the AIR pump is approximately 140 amps. During continuous operation, the current draw is 35 to 40 amps. In a high current circuit like this, resistance as low as 2 to 3 ohms anywhere in the pump circuitry may adversely affect pump operation.

TIP: The resistance mentioned above also applies to the AIR pump relay switched side voltage circuits.

Voltage drop tests have been integrated into the AIR service diagnostics to pinpoint these improper resistance conditions.

Electronic Shut-Off Valve

The electronic shut-off valve contains an integral solenoid and check valve. The valve has no removable parts and the solenoid and valve are serviced as an assembly. The current draw of the solenoid is 2.5 to 5 amps. This high current draw requires the addition of a relay to protect the control module driver. A resistance greater than 15 to 17 ohms in either the voltage supply or ground cir-



New AIR Shut-Off Valve

cuits of the solenoid will affect valve operation.

The shut-off valve opens reliably when commanded ON by the control module. Because the valve is electronically operated instead of by vacuum, conditions such as low manifold vacuum, high altitude or heavy acceleration have no adverse effects on the operation of the valve. The internal check valve protects caustic exhaust gases from damaging the AIR system components.

Diagnosis

There is only one DTC, P0410. It results from no airflow in the system. The diagnostic relies on the heated oxy-gen sensor (HO2S) 1 voltage parameter to drop below 150mV. The AIR diagnostic will run only on ignition cycles when the pump is commanded ON by the PCM. If this test passes, then no active test will run. If the passive test fails, or is inconclusive, the active test will run later in that ignition cycle. At that time there will be a maximum of two 3-second active tests.

The AIR pump can be commanded ON and OFF using the Output Controls menu of the Tech 2. Observe the HO2S 1 voltage parameter when the engine is running, and the fuel control is in closed loop.

When the AIR pump is commanded ON, the HO2S 1 voltage parameter will decrease below 150 mV to show a properly operating AIR system. A timer in the PCM disables AIR pump operation after approximately 30 seconds to protect the vehicle's components.

TIP: The commanded state of the AIR pump relay may also be observed in the fuel trim data list.

When performing AIR system diagnostic tests, or using output controls on the Tech 2, DO NOT operate the AIR pump for more than 30 seconds, to avoid overheating the motor. Under some conditions, such as bypassing the AIR pump relay with a fused jumper wire, the AIR shut-off valve will remain closed, causing a deadheaded condition. This builds up an abnormal amount of heat in the pump.

Refer to SI for service procedures.

- Thanks to Frank Tornambe



Ashtray Repair Spring

If a spring breaks on the ashtray of a 2000-04 Buick LeSabre, it's not necessary to replace the entire ashtray.

There are two springs, right and left. In some cases, the ashtray was built with two same-side springs. If this happens, a spring may deform, causing the ashtray to hang up.

Repair springs are now available from SPO. The right-hand wound spring is 89042051 and the left-hand wound spring is 89042084.

- Thanks to Bill Metover and Martin Tulashie

OnStar Goes Digital

Beginning in the 2004 model year, OnStar will introduce the latest generation of hardware, Gen 6. This is the first OnStar hardware that supports CDMA and PCS digital cellular communication, along with AMPS, analog cellular.

Rollout Schedule

The Pontiac Aztek and Buick Rendezvous will receive Gen 6 by the fourth quarter of 2003. All full-sized trucks are scheduled by the first quarter of 2004. The remainder of the fleet will adopt Gen 6 throughout the 2004 and 2005 model years. Exact timing has not been finalized.

FCC Ruling Affecting U.S. Market

Recently, the Federal Communications Commission (FCC) ruled that, in the U.S., wireless carriers will no longer be required to support the analog wireless network after February 16, 2008. After that time, if U.S. carriers for OnStar elect to provide only digital service, OnStar service will be available only through dualmode (analog/digital) hardware.

From the beginning, OnStar has relied on a nationwide analog wireless network to provide communication to and from OnStar-equipped vehicles. Today, the analog network continues to provide the most extensive coverage across the U.S. and Canada.

As of June 2003, all OnStar systems utilize analog-only hardware. However, the U.S. wireless carriers have begun to shift from analog to digital networks, and so will OnStar.

The Gen 6 OnStar system brings some new features, including:

- An enhanced voice recognition system, including continuous digit dialing, which can accept a phone number in a continous string as opposed to one digit at a time
- Quicker response to door unlocks

In digital markets, the module has a DRx standby mode. The module will stay awake 1 hour in a lower power mode following key off.

What You Need to Know About OnStar Hardware in GM Vehicles

TIP: When attempting to diagnose a vehicle with the Gen 6 OnStar module, refer to Service Information for the latest diagnostic information.

The OnStar-equipped vehicle has one of three types of hardware.

Analog-only: Most 2003 model year and earlier vehicles have analog-only hardware. The FCC ruling requires that U.S. wireless carriers provide reliable, nationwide analog service until February 2008. We do not anticipate that OnStar service will be affected in any way during the five-year transition period. However, if the carriers for OnStar elect to provide only digital service after that, then beginning Feb. 16, 2008, OnStar service will be available only through dual-mode (analog/digital) hardware.

Analog/Digital-Ready: Some 2003 and 2004 model year vehicles have analog/digital-ready hardware. These vehicles have been prepared for conversion to analog/digital (dual mode) hardware when it becomes available. **Analog/Digital (Dual-Mode):** Some 2004 and future OnStar-equipped vehicles feature dual-mode (analog/digital) hardware, which will be unaffected by the FCC ruling.

OnStar will notify customers directly if they will be affected by this ruling, along with plans to accommodate customers who wish to continue as OnStar subscribers.

As OnStar hardware continues to change, keeping track of which vehicle has which OnStar hardware generation becomes more complicated. To determine which hardware generation is in a vehicle, you can use any of these tools:

- OnStar Window Label (current production vehicles forward)
- OnStar Hardware Generation Identification Quick Reference Guide (see Reference Guides on the TechLink website at http://service.gm.com)
- The accompanying what-to-do table (which assumes the OnStar system is operational)
- Thanks to Dale Tripp

What you do	If the system responds …	Then the vehicle's hardware is
Step 1: Press the white-dot button	"Ready"	Analog-Only
(If there is no white-dot button, the vehicle has an analog-only system.)	"No Response"	Analog-Only
Step 1: Press the white-dot button	"OnStar Ready"	Analog/Digital-Ready
Step 2: Say "Help"	The system replies with up to 14 options, such as "Dial," "Call,""Directory," and "Virtual Advisor."	
Step 1: Press the white-dot button	"OnStar Ready"	Dual-Mode (Analog/Digital)
Step 2: Say "Help"	Along with other options, you hear one of these digital-spe- cific options: "Advisor Playback," "Digit Dial" or "Digit Store."	

Repairing Napped Fabric

Seats on the following vehicles may be upholstered in napped fabrics, with Dorchester on the bolster and Honeycomb on the insert.

1999-04 Silverado

2000-04 Tahoe and Suburban

2002-04 Avalanche

1997-2003 Grand Prix

Under some circumstances, the nap may become crushed down, giving the appearance of being worn out. **TIP:** If the base material is visible, the material is worn, and this procedure is not a remedy.



Nap worn through to base material

If the base material is not visible, use a small wire brush to carefully raise the nap. Wire brushes similar to the one



OnStar Introduces Factory Activation

Beginning with 2004 model vehicles, OnStar will introduce factory activation. This eliminates the need for your dealership to activate OnStar for a customer. The vehicle will leave your inventory with the following OnStar services available:

- Emergency Services
- Air Bag Deployment Notification
- Theft Recovery Assistance



TIP: Salespeople should include a discussion of OnStar's benefits and services in the delivery process.

Service Considerations

With factory activation, it is important not to exchange OnStar modules from one new vehicle to another. If new modules are swapped. OnStar will create an account with the wrong customer information.

When your dealership sales department submits the customer delivery record (CDR), OnStar will create an OnStar account for the customer, and will subsequently contact the vehicle to configure the OnStar system. Once the system is configured, all OnStar services will be available, including OnStar personal calling (may not be available in some markets).

In addition to the CDR data, OnStar also receives built data from the assembly plant, including specific Information from the OnStar module:

- Station ID (STID) number
- Electronic Serial (ESN)
- Mobile Identification Number (MIN) or phone number

When the vehicle leaves the assembly plant, the OnStar wake-up cycle (DRx or Discontinuous Receive) is turned on. For more information on DRx, refer to the April 2003 Techlink. With the vehicle turned off, the OnStar system will power up for one minute out of every ten minutes to allow the OnStar call center to contact the vehicle.

The OnStar call center uses CDR and

assembly plant information:

- to identify the appropriate phone number to call
- to determine the wake-up time, to know when to call the vehicle
- to successfully make a data connection
- to perform the configuration.

Dealer Theft Recovery

As a result of factory activation, OnStar will be modifying the dealer theft recoverv assistance process to better meet dealer needs. One result will be a rapid response to vehicle thefts from dealer inventory. More information will be communicated in the coming months. Watch GM Messenger (US only) for details on factory activation and dealer theft recovery assistance.

Blue Button

TIP: Any time you service an OnStar system and any OnStar module is replaced, it is necessary to press the Blue Button, speak to an OnStar advsior, and update the customer's account. This is true even if the customer does not have nor does not intend to have an OnStar subscription.

Vehicle Application/Usage

Buick Park Avenue / Chevrolet

- Thanks to Dale Tripp

Part Number

12207539

Upgrading Factory Installed OnStar[®] Gen 2.0 Equipped Vehicles to Gen 2.6

Note these corrections to bulletin 01-08-46-008.

- 1. The GMC Jimmy is not listed for an upgrade and is capable.
- 2. Pontiac Bonneville was inadvertently left off the listings. Bulletin incorrect to upgrade this vehicle. Listing should read as in the table.
- 3. The Escalade and Denali cannot be upgraded; as it is a distinct body style, different from the Yukon and Yukon XL

Note: All vehicles involved with this upgrade must have the factory installed option OnStar system and not the dealer installed unit.

- Thanks to Jim Mikolaizik

shown are available at most hardware and home stores.

It is not necessary to use water or



cleaners to perform this procedure.

- Thanks to Jerry Garfield



	Blazer / GMC Jimmy, Envoy / Oldsmobile Bravada
12207519	Chevrolet Suburban, Tahoe / GMC Yukon, Yukon XL (Escalade and Denali cannot be upgraded)
12207529	Buick LeSabre / Pontiac Bonneville / Cadillac DeVille, Eldorado, Seville
12207499	Cadillac Catera / Chevrolet Venture / Oldsmobile Silhouette / Pontiac Aztek, Montana

Trap Alert Sensor Service

Chevrolet Impalas and Monte Carlos were built with the Trap Alert system (January 2001 TechLink). GM has made the decision to not



Non-Drive Bearing

Active Digital Wheel **Speed Sensors**

Vehicle platforms other than the Malibu will also use the Delphi 7.2 system, but only the 2004 Malibu will incorporate a new "active" digital signal wheel speed sensor.

In the 2003 and earlier Malibu, the Electronic Brake Control Module (EBCM) received an analog signal from a "passive" speed sensor at each wheel. The passive wheel speed sensor creates an

A/C voltage signal that varies in frequency and amplitude as the vehicle wheel speed changes. The EBCM internally converts the frequency and amplitude of the analog signal into digital information that the EBCM can use to perform ABS braking.

Operation

The active wheel speed sensor sends a D/C square wave signal to the EBCM instead of an A/C signal and cannot generate its own signal voltage. So, active wheel speed sensors use a separate 12V reference circuit supplied by the EBCM and chassis ground.

The active wheel speed sensor harness has two wires to the EBCM, one for the signal input and one for the 12V reference. The reference voltage is supplied to an internal semiconductor in the active wheel speed sensor called a Hall Effect Sensor. The Hall Effect Sensor creates a magnetic field around the sensor. A rotating metallic toothed ring inside the wheel bearing interrupts the magnetic field as the wheel spins. When a tooth passes near the Hall Effect Sensor, the signal voltage output toggles from low to high, creating a square wave D/C output.

The frequency of the D/C square wave signal output increases with wheel speed, but does not increase in amplitude. The EBCM uses the frequency to interpret wheel speed for ABS operation.

The advantage of a digital active wheel speed sensor is that the signal input is much more accurate. Because of the increased signal accuracy, the ABS system can react faster to wheel slip. Also,

the speed at which ABS can be activated can occur at slower vehicle speeds.

Diagnostic Tips

Diagnostic procedures of active wheel speed sensors are unlike that of analog passive wheel speed sensors. In the past, resistance values on analog passive wheel speed sensors could be checked to diagnose an internal open inside the sensor. On active wheel speed sensors, the normal resistance value of the sensor is in the mega-ohm range (near open). As a result, active wheel speed sensor operation must be checked dynamically.

Before the sensor can be diagnosed, the 12v sensor reference circuit must be checked. Once the sensor reference voltage circuit has been verified OK, the wheel speed sensor signal circuit is diagnosed using an ammeter. With the ammeter connected in series in the signal circuit, current on the sensor signal circuit can be observed to toggle from high to low as the wheel is spun very slowly.

If at any time the connection between the sensor and the sensor signal circuit is lost, the EBCM disables the sensor signal circuit for the remainder of the key cycle and a DTC is set.

TIP: Be sure the digital multimeter has an intact internal ammeter fuse, to avoid DTCs during the diagnostic procedure. If a wheel speed sensor DTC is set during a functional wheel speed test, the wheel speed sensor will no longer output a signal.

- Thanks to Ray Gearhart

Lock/Unlock Verification with **Remote Keyless** Entry

On Venture, Silhouette and Montana vehicles, lock/unlock verification when using RKE is provided by MALL module 4, which is ordinarily used on vehicles with UA6 theft deterrent.

To provide horn verification on a larger number of vehicles. MALL 4 was installed on non-UA6 models beginning December 2002 and was discontinued July 2003 because of the confusion explained below.

In April, circuit 301 was added between the MALL module and DRL, to provide verification with the lights as well as the horn.

On vehicles with MALL 4, but not UA6, if the vehicle is locked with RKE and unlocked with the key, the alarm system goes off (even though the vehicle

technically does not have theft deterrent). The unlock button on the key fob will stop the alarm.

This is often diagnosed as a mis-build; it is not. If a customer raises this concern, there are several solutions:

- 1. Explain that if the vehicle is locked with RKE, it must unlocked with RKE. Point out that they have limited theft deterrence at no cost. The key cylinder is not tied into the alarm, nor is there a panic button on the kev fob.
- 2. Theft deterrence may be disabled using the customization procedures in the owner's manual for MALL 4. Lock/unlock confirmation will still be available with horn and lights, but theft deterrence will be disarmed.

TIP: It is not necessary to replace the MALL module. The first printing of the 2004 owners' manual incorrectly shows lock/unlock confirmation available on MALL 3.

- Thanks to Tom Geist



Rear Storage Compartments

The hinge or support link in the rear storage compartment of 2002-03 Venture, Silhouette, and Montanta may break. Bulletin 03-08-110-001 addresses this condition.

The support link (also called hinge) is available as a separate replacement component.

88987165	Link (Gray)
88987166	Link (Neutral)

TIP: Replace the support link, rather than the entire rear storage compartment.

- Thanks to Tom Geist

Adjustable Pedals

Electrically adjustable pedals are available on the 2004 Malibu. You can find service information in SI under Accessories/Adjustable Pedals.

The adjustable pedal system includes these major components:

- Switch (operated by the driver)
- Adjustable pedal module
- Adjustable pedal actuator (electric motor)
- Accelerator pedal bracket assembly
- Brake pedal assembly
- Cable
- Adjustment position sensor

Operating Logic

The pedal system is enabled/disabled by controlling the ground side of the motor circuit. The system is enabled only when the transmission is in Park. Operating voltage is supplied through a 10-amp fuse to the driver's switch.

The BCM provides battery voltage to

TAC*Tips*

TAC New Product Action Centers

New vehicle and component launches for the remainder of the 2003 calendar year will be supported by New Product Action Centers. The primary objectives of the New Product Action Centers are:

- Identify and resolve new product concerns as quickly as possible.
- Gather appropriate data and act on it to prevent recurrences of product concerns.
- Respond to dealer calls utilizing maximum resources available at GM to repair customer vehicles at your dealership.

The Action Center Team includes SPO Contact Centers (GM TAC, SPAC, ParTech, PQC), Brand Quality, Assembly Plants, Engineering, Regional Service Engineers, and SI Teams.

Products Included in New Product Action Centers are:

- Hi feature V6
- Chevrolet Malibu (includes hi value V6)
- Cadillac SRX
- Cadillac XLR
- Chevrolet SSR
- GMC XUV
- GMC Canyon, Chevrolet Colorado
- Aveo
- GTO

the pedal module to disable, and 0 volts to enable.

When the system is enabled, the driver can move the pedals forward or backward using the pedal switch. The switch

provides B+ and ground to the motor in whichever direction the driver chooses.

The pedal actuator motor operates the accelerator pedal assembly directly, and operates the brake pedal assembly through a cable. When the motor is moving the accelerator pedal, a brake pedal position sensor monitors simultaneous movement of the brake pedal. If movement does not occur, the module disables system operation.

Service Tips

Whenever the cable joining the motor to the brake

Dealer interface with the Action Centers will be through GM Technical Assistance, using the regular GM TAC phone number: 1.877.446.8227. Please utilize all new product service information and resources available at your dealership for these new products. If you are still unable to resolve a product concern, contact GM TAC and follow the revised prompts to access the appropriate New Product Action Center Consultant.

After choosing to speak to a consultant at the Main Menu, you have 3 choices:

- 1. OnStar/XM Radio consultant
- 2.TAC consultant
- 3. New Product Action Center consultant

After choosing 3, New Product Action Center consultant, you will be asked to choose which vehicle you are working on.

After choosing the appropriate vehicle, you will be given a choice of 5 general vehicle areas vehicle manned by specially trained consultants for that specific vehicle/component.

- 1. Engine
- 2. Drive train includes transmissions, transfer cases and axles
- 3. Chassis includes steering, suspension and brakes
- 4. OnStar and XM radio
- 5. Body, Electrical/Accessories, or HVAC

A service VME and/or GM Messenger message will announce the specific Action Center start and end dates. The pedal is disconnected at either end, a new cable must be installed. Do not reinstall the old one.

When installing the brake pedal position sensor, be sure the sensor is correct-

ly installed to the bracket. Then be sure the sensing arm is correctly installed.

The brake pedal and accelerator pedal positions must be synchronized when components are replaced. Failure to do so will result in improper operation. Refer to Adjustable Brake Pedal Cable Replacement in SI for the synchronization procedure.

You can use a No. 2 square drive tool to move the brake pedal assembly forward or backward as necessary when the cable is disconnected.

- Thanks to Toby Dunmore

prompts will be in place at GM TAC for the entire time of the New Product Action Center operation. We thank you in advance for your participation and support of the New Product Action Centers.

- Thanks to GM Technical Assistance

Intermittent Dead Battery

If the owner of a 2002-2003 Trailblazer, Envoy, or Bravada experiences an intermittent dead battery, determine if the IGN 0 circuit is turning on with the key removed from the ignition switch. This can be determined by watching whether the PRNDL display and the battery light turn on when wiggling the lock cylinder with the key removed.

If the IGN 0 circuit is turning on with the key removed, replace the ignition switch.

- Thanks to Dan Fuller

SRX Tire Rotation

On the 2004 Cadillac SRX, due to dissimilar front and rear tire widths, the tire and wheel assemblies cannot be rotated from front to back. They may be rotated from side to side. Wheel and tires sizes are based on the engine in the vehicle.

- Thanks to Roger Jantz

V6	Front P235/65R17
17-inch wheels	Rear P255/60R17
V8	Front P235/60R18
18-inch wheels	Rear P255/55R18



	Car Issues Fix It I	Right the First Time		
Model Year(s)	Vehicle Line(s) Condition	Do This	Don't Do This	Reference Information / Bulletin
2003-2004	Vibe – Normal Exhaust Odor	Provide a copy of the service bulletin to the customer.	Don't replace the catalytic converter.	03-06-05-006
1998-2003	Seville – Rear Seat HVAC Controls	Replace the knob only	Don't replace the entire rear seat blower switch assembly.	03-01-39-001A
1998-2004	All Cars and Trucks – Wabasto Sunroof	Repair the sunroof module.	Don't replace the sunroof module.	03-08-67-004
2000-2003	Cavalier/Sunfire/Grand Am/Alero/Malibu – Inaccurate Fuel Gauge	Replace sensor card for fuel gauge – accuracy issue	Don't replace fuel sender/pump assem- bly	01-06-04-008D
1999-2003	Grand Am/Alero – Window Disengagement, Broken Clips	Replace clip only	Don't replace door glass or regulator assembly	01-08-64-012 01-08-64-018
1997-2003	Grand Am/Alero/Malibu – Brake Pulsation	Turn rotor and use brake align proce- dure	Don't replace brake rotor for pulsation	00-05-23-002 01-05-23-001 (Know How Video #15040.01B)
2002-2003	Venture/Montana/Silhouette – Rear Storage Compartment Link Arm Breaks	Replace link arm	Don't replace rear storage compartment	03-08-110-001
1997-2004	Century/Regal – HVAC Operation, No "Auto" Light	Normal in full heat or cold setting	Don't replace HVAC control head for "Auto" light	99-01-39-007B
2003	All cars with 4T40/45E, 4T56E and 4T80E – Code P0742	Replace TCC PWM Solenoid	Don't replace transmission or valve body assembly	02-07-30-039B
2004	L61 EcoTech 4 Cylinder – 2.2L Engine	Replace spark plug sets	Don't replace PCM or ignition cassettes	Recall 03042

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Truck Issues -- Fix It Right the First Time

Model Year(s)	Vehicle Line(s) Condition	Do This	Don't Do This	Reference Information / Bulletin
2003-2004	Fullsize Pickups and Utilities – Door Trim Panel	Remove the front door panel, then remove the switch bezel retaining screw.	Don't replace the module, encoder motor or transfer case for DTCs C0327, P0836, P0500	Service VME 03-08-64-022
2003-2004	Fullsize Pickups and Utilities – Servicing Wide Load Mirrors (RPO DPF)	Replace individual parts as need- ed.	Don't replace the complete mirror assembly.	03-08-64-028
2002-2003	All TrailBlazer, All Envoy, Bravada – Windshield Washer Nozzle	Replace with windshield washer nozzle P/N 15173510	Don't replace the complete cowl assembly.	Service VME dated 06/25/2002
2003	Fullsize Pickups and Utilities – Transfer Case Service Light	Replace encoder motor sensor and reprogram TCCM	Don't replace the module, encoder motor or transfer case for DTCs C0327, P0836, P0500	03-04-21-001B
1999-2002	Fullsize Pickups and Utilities – Throttle Body Sticks	Clean throttle body adjust blade and insert plugs	Don't replace throttle body	02-06-04-054B
2003	Fullsize Pickups – 6.6L Diesel Engine ECM	Follow SI and bulletins for proper diagnostics for P0181. Refer to the Owner's Manual (block heater and front cover)	Don't replace ECM (DTCs P0540 and P0181) unless diagnostics confirm need to replace	02-06-04-048, 03-06-04- 021, 02-06-04-058 and parts restriction
2003	Silverado, Sierra, Savana, Express > 8600 GVW – ABS Lamp On	Reflash for code C0550	Don't replace ABS module	03-05-25-003 and parts restriction
2002-2003	TrailBlazer, TrailBlazer EXT – Wavy Front Fascia	Repair fascia with Dual Lock	Don't replace front fascia	02-08-62-004
2002-2003	All TrailBlazers, All Envoys, Bravada – Mirror Erratic Return	Replace mirror actuator and repro- gram module	Don't replace outside mirror assem- bly	02-08-64-008 02-08-64-021
2002-2003	TrailBlazer, Envoy, Bravada with- out G67 – Moan/Boom	Replace rear coil springs	Don't repurchase vehicle for rear axle vibration/boom noise	02-03-09-002A

Know-How Broadcasts for November	10270.10D Emerging Issues	November 13, 2003	9:00 AM, 12:30 PM, 3:30 PM Eastern Time	IDL
	10270.22D - 2004 Malibu Maxx & Bonneville New Model features	November 20, 2003	9:00 AM, 12:30 PM, 3:30 PM Eastern Time	