TECHlink
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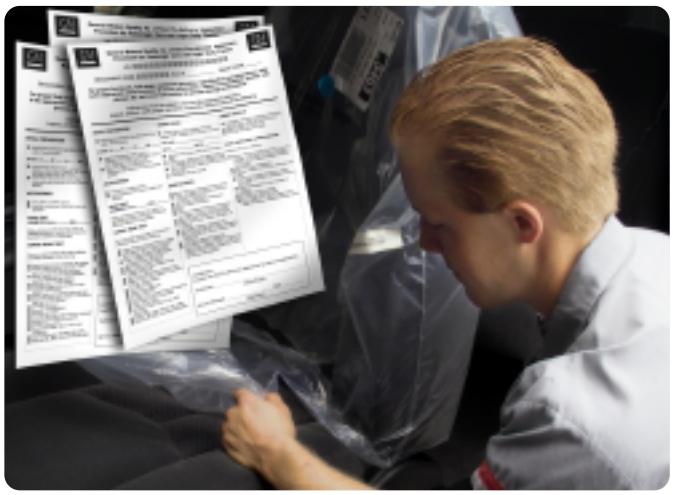
New Pre-Delivery Inspection Form Introduced



Courtesy of Milnes Chevrolet, Imlay City MI

A new Completely Satisfied Delivery System program (CSDS) will be rolled out with the introduction of the 2005 Cadillac STS. The CSDS is the system the salesperson uses to introduce the customer to his/her new vehicle. Among its new features is an orientation to the service department.

Accompanying the CSDS is a revamped Pre-Delivery Inspection Form.

The new form places a stronger focus on areas affecting customer satisfaction and JD Power scores, it reduces redundancies with other upstream inspections, and creates a more robust PDI process.

Ensuring that quality pre-delivery inspections are done will improve initial quality and customer satisfaction. Enhancements have been made to the pre-delivery inspection process to help improve initial quality.

The intent is not to reduce or increase the time allotment for dealers to perform PDI .

The refined form was the result of considerable research. GM studied 11 competitive manufacturers' forms and evaluated common and unique characteristics

Early customer feedback data (JD Power IQS2 and Zero Day Warranty) were reviewed for areas of focus and potential adds to PDI.

Assembly Center "CARE Line" items were investigated, and redundant inspections were eliminated at the dealer level.

As a result of the investigation, 20 checks were deleted, 15 checks were added, and 18 changes were made to the wording on the form.

Here are highlights and explanations of some of the changes. JDP focus areas are indicated by an asterisk (*).

- The form now provides a place to record tire pressures after checking them.

Some vehicles are shipped with higher tire pressure, to ensure proper bead seating and to resist the effects of shipping.

TIP: Tire pressure affects ride quality. Ride quality is an important JDP focus area (*).

- Battery check and charge are added to ensure that the dealer begins storage with a fully-charged battery. Battery maintenance is the dealer's responsibility while the vehicle is in dealer stock.
- Reset the fuel economy reading (*).

The initial fuel economy reading is affected by the way the vehicle is driven before delivery. Vehicles may be run very hard during dynamic vehicle testing at the plant, then driven slowly around the plant and dealer premises before delivery to the customer. By re-setting just before delivery, the customer gets a truer reading of their actual economy (*).

- Check for wind noise (*).
- Clean the wiper blades using Optikleen. This helps alleviate windshield wiper chatter concerns (*).
- Erase voice recorder messages.
- Check OnStar for connectivity.

It's important to check this, because some plants do not have the capability to connect with OnStar. Also, some plants can successfully connect to OnStar, but a successful connection cannot be made at the dealer location. In most instances, this is a correctable concern.

TIP: The OnStar check is a simple push of the OnStar button during the road test.

- Perform additional checks for squeaks, rattles and noises.
- Check for water leaks.
- Verbiage is clarified in the brakes portion of the road test.
- Steering check is added to the road.test

- Thanks to Chris Anderson

Techline News

Daily Updates for SI

In late June, GM Service and Parts Operations announced that the SI website is now updated daily rather than weekly to include Service Manuals, Bulletins, Campaigns and PIs. The daily updates will occur Monday through Friday.

The GM ACCESS server update will continue to be broadcast on Monday.

- Thanks to Larry Quinn

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GM Service and Parts Operations

PDI – Leather Seats

Significant numbers of customers are expressing concerns in surveys about dirty seats in new vehicles at delivery. This is primarily in vehicles with leather seats, and the driver's seat is most often cited.

Seats show coffee stains, ink marks, grease marks and dirt in general. Soiling may be caused by drivers during transport from the assembly plants, by customers during test drives and vehicle evaluations, or by dealership personnel moving the vehicles while at the dealership.

Regardless of the cause(s), seats must be inspected as a part of the pre-delivery inspection, and cleaned as necessary before delivery.

TIP: The owner's manual recommends a soft cloth moistened with mild soap and water.

TIP: The Pre-Delivery Inspection form (see accompanying article) calls for removing protective coverings from the interior just before delivery. This is intended to minimize soiling of the upholstery.

- Thanks to Saundra Massingille

Divisional Shows for Emerging Issues

Based on audience feedback, the Service Know How Emerging Issues broadcast for US dealers will undergo a three-month trial of divisional-based shows. These shows will allow for a more-focused presentation of information for technicians, as well as minimizing training time. Feedback for this type of show format will help determine whether division-based segments will continue, return to the previous programming, or develop new directions to better keep technicians informed of the latest developments.

TIP: The broadcast times for July, August and September will now be 12:30, 1:00, and 1:30 PM.

Starting in July, 2004 and running through September, 2004, Emerging Issues will be split into 3 segments:

– 12:30 - 1:00 PM
  Pontiac, Buick and GMC
– 1:00 - 1:30 PM
  Chevrolet Cars and Trucks
– 1:30 - 2:00 PM
  Cadillac and Hummer

The live broadcast will be available only once during the day. There will not be a 9:00 AM or 3:30 PM show.

The course number will remain the same, as the three segments are all part of the same show. There will be three tests associated with each monthly show, one for each segment.

Technicians can take the test that is specific to their dealership segment. The test will still be available on the GM training website. The STS reporting will not change; there is an ongoing requirement for participating in 6 out of the 12 seminars.

SKH Emerging Issues will remain available for General viewing and shows will be repeated on a weekly basis.

- Thanks to Tracy Timmerman

Before Replacing an SDM

When working on an air bag system, if you see a DTC B1001, do not replace the Sensing and Diagnostic Module (SDM) without further diagnosis.

For proper operation, the same restraints IDs and VINs must be set in both the SDM and the BCM.

If a DTC B1001 is set in the SDM, this indicates that the restraints IDs stored in the BCM and SDM do not match or that the VINs stored in both the BCM and SDM do not match. If either the BCM and/or powertrain control module (PCM) was replaced, the replacement modules need to be reprogrammed for proper operation.

TIP: If the vehicle does not have a BCM, it should have a DIM, IPM or equivalent module to be programmed properly.

- Thanks to Mitzie Clark

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.

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Rendezvous BCM Replacement

Here are some useful diagnostic tips that were learned while the Rendezvous Body Control Module (BCM) was on parts restriction. A parts restriction is a useful tool for gathering information, because a replacement part cannot be obtained until the technician has had a conversation with Technical Assistance.

One of the common reasons for replacing the BCM was listed as "no crank, no start." In nearly all situations on the Rendezvous, the BCM has no function in engine starting. In fact, if the BCM were completely removed from the vehicle, the engine would still start and run (although numerous codes would set!).

TIP: This is not true for all GM vehicles with BCMs. The vehicles share names for components like BCMs but have different functions, depending on the vehicle line. This is a good reason to review the Service Information before performing any diagnostics on a vehicle.

Other diagnostic tips that turned up during the BCM parts restriction apply not only to diagnosing the BCM but to good diagnostic practices in general.

It's important to react to a vehicle's present symptoms, not just to stored history codes. Certainly, history codes are important to building a clear diagnostic picture. However, replacing a part simply because a code was set at some time in the past is not good diagnostic procedure.

Using circuit schematics can assist in diagnosing a performance issue. But it is not a substitute for following the published diagnostic procedures. Tracing a circuit and applying an "educated guess" will likely lead to unnecessary parts replacement, and failure to find the actual cause of the condition.

Be sure you can reproduce the customer's concern, and perform the diagnostics related to the condition before beginning to replace parts.

Be on the alert for aftermarket equipment. Often, equipment of this kind interferes with the intended performance that engineering designed into the system. In some cases, aftermarket equipment creates electromagnetic interference (EMI), which can cause havoc with the proper operation of factory equipment.

And finally, if a customer comes back with the same symptom after a part was replaced, it's not good practice to replace the part again without establishing that the part is actually at fault, using published diagnostic procedures. Remember, Service Information is updated weekly and may have changed since last used for a diagnostic concern.

- Thanks to the BCM Restriction Team

Radiator Support Sight Shield

Owners of some 2000-04 DeVilles may comment that the radiator cover / upper filler panel material is cracked, torn, worn, or brittle and may disintegrate when manually handled. This condition may be due to the radiator cover being exposed to high ambient temperatures for long periods of time. If this condition is encountered, replace the panel. An improved panel was implemented into production in September, 2003. Refer to Bulletin 04-08-63-001 for repair procedures.

- Thanks to Bill Denton

Ignition Switch Removal

For the 2004 model year, the size of the ignition switch knob in the Buick Park Avenue is changed to accept a larger key head size. This was done to make the Park Avenue ignition transponder common with other carlines. As a result, the ignition switch knob is too large to fit past the steering column trim cover when servicing.

The lower trim cover must be removed first; then the upper cover can be lifted up for access to the release pin for the ignition lock cylinder. SI was updated to cover new procedure.

- Thanks to Kobie Glenn

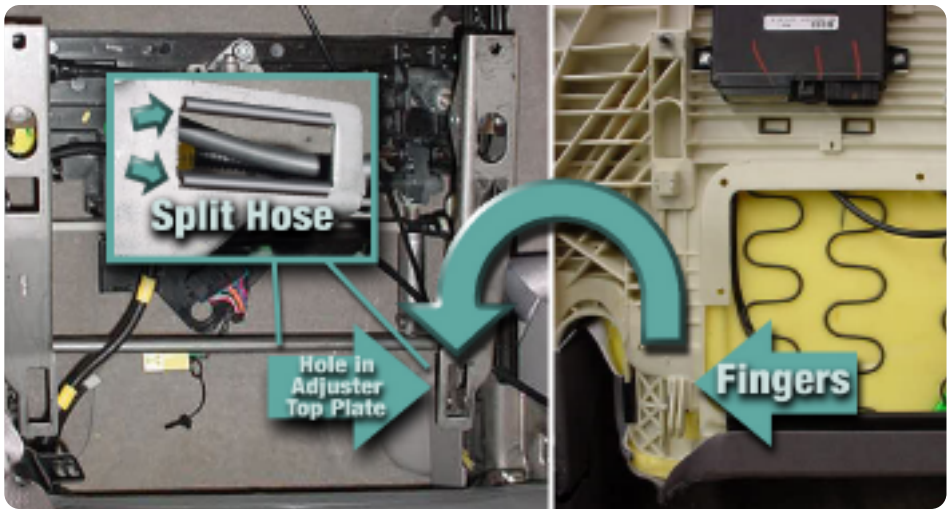
Stainless Steel Brake Hoses

Owners of some Corvettes have experienced Service ABS, Service Active Handling and Service Traction Control messages. Wheel speed sensor codes may be set. This condition may be caused by replacing the OEM rubber brake hoses with aftermarket stainless steel brake hoses.

It is believed that the metal in the brake lines conducts static electricity, causing confusion in the wheel speed sensors.

The brake hoses must be returned to original rubber ones before the case can be investigated. **This is a customer-pay expense.**

- Thanks to Art Spong



Seat Clunk

When making turns, owners of some 2004 Buick LeSabres may hear a clunk or feel seat movement.

Under these conditions, the "fingers" on the seat bottom tray can move laterally in the rectangular hole in the adjuster top plate.

To reduce play and dampen noise, split a small piece of rubber vacuum hose and install on the edges of the rectangular hole in the adjuster top plate to reduce the clearance between the plastic seat bottom tray fingers and the metal adjuster top plate.

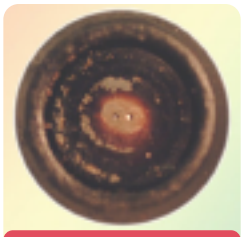
A bulletin is pending.

- Thanks to Bill Metoyer

Injector Cleaning

Shortly, a revised bulletin 03-06-04-030A will be released. This bulletin explains how to test and clean Multec II injectors.

In time, fuel injector(s) may become restricted, due to buildup in the injector passages. Restrictions cause an injector to run lean. Driveability symptoms include difficult starts, rough operation and possible misfire. The MIL may illuminate.



Typical Multec II injector

Injector cleaning has three phases: dealing with fretting corrosion, injector balance testing, and cleaning.

You will find these procedures detailed in the bulletin. Here, we want to provide you some of the reasons behind the procedures.

Fretting Corrosion

Fretting is a microscopic rubbing motion between the terminal pin on the injector and the terminal in the wiring harness (see June 2003 TechLink for an extensive description and illustrations).

Oxidized debris (corrosion), the result of fretting, can build up in the injector terminals, resulting in high resistance or loss of continuity. A fretted connection is unstable, and may vary between good, high resistance and open.

TIP: The reason to be concerned about fretting is that it can cause symptoms that mimic a restricted injector.

To ensure that fretting is not an issue, follow the bulletin procedure to apply dielectric grease to both cavities of each injector connector.

Dielectric Grease – US	Dielectric Grease – Canada
12377900	10953529

Injector Balance Testing

TIP: An important reason for balance testing is that it quickly and graphically indicates the flow of each injector, and permits comparing the performance of each injector with the others. Refer to the December 2002 TechLink for a detailed description of injector balance testing.

J-39021 Fuel Injector Tester

TIP: You must record the results of all injector balance tests and keep them with the repair order. For your convenience, the bulletin has a worksheet for recording the test results.

The test procedure calls for attaching a pressure gauge to the fuel rail. The gauge must be in good operating condition and capable of reading in kilopascals (kPa). The gauge in the J-34730 PFI Diagnostic Kit is recommended.

TIP: The reason for reading kPa instead of psi is that kPa is a much smaller measuring increment, which permits a much more precise measurement.

After determining the amount of pressure drop for each injector, compare the results. If the difference between the highest (richest) and lowest (leanest) injector is less than 20 kPa, the injectors are all flowing within an acceptable range. If the difference is 20 kPa or more, proceed with cleaning.

TIP: An injector that is considerably richer than the rest must be replaced. An injector that is leaner than the rest may be restricted, and may benefit from cleaning. Research indicates that an injector running lean could lead to a driveability condition.

Injector Cleaning

TIP: GM Top-Engine Cleaner is the only approved injector cleaner. Research shows that GM Top-Engine Cleaner is the most effective cleaner and won't cause damage to plastic or metal components in the fuel injection system when used as instructed.

GM Top Engine Cleaner – US	GM Top Engine Cleaner – Canada
12346535	992872
Pre-measured 0.812 oz. (24 ml) bottles	15 oz. (443.6 ml) bottle

TIP: Per the bulletin, the injector cleaning process is run twice, to ensure thorough cleaning of the injectors.

For each batch of cleaning agent, add two 24 ml bottles (US) or measure 1.6 oz. (48 ml) (Canada) into the J-35800-A injector cleaning tool and top off with unleaded gasoline. This will result in a 10% mixture.

J-35800-A Fuel Injector Cleaner

TIP: The recommended mixture of GM Top-Engine Cleaner has been increased from 5% to 10%. The reason is to improve effectiveness of the injector cleaning procedure. Research shows that concentrations greater than 10% do not improve effectiveness.

Follow the procedure when hooking up the injector cleaner equipment.

TIP: It's important to use the appropriate tools to block the fuel feed and return lines. The reason is to isolate the cleaning agent to the fuel rail only, and to prevent getting it into the fuel tank, which could damage the fuel pump check ball.

- Thanks to Dave Peacy

Pass-Through Capability Added to Vehicle Data Recorder

The 2004 mid-year Vehicle Data Recorder (VDR) software (J-42598-100) will be available in late July or early August, and will add model year 2004 chassis coverage for GM vehicles. Also included in the software update is full powertrain/chassis support for GM Medium Duty Trucks. This software will support both the original VDR (J-42598) and the new CAN+ VDR (J-42598-B).

An additional feature of the 2004 mid-year VDR software is a live PC data screen. This allows the user to view live data stream information on a standard desktop PC or laptop with Windows 98 SE, 2000 Professional, or XP Professional. The same screen that currently displays the snapshot data will also display the live data stream information. DTCs can also be displayed while viewing live data stream.

Procedure for viewing live data:

- Using the new mid-year software update on a PC, download vehicle template in the same manner as taking a snapshot recording (press select vehicle button, choose model year, vehicle make, vehicle model and data list).
- Place a PC with the 2004 mid-year VDR software loaded in the vicinity of the vehicle.
- Connect one end of the Tech 2 RS232 cable (3000110) and 9 PIN COM port adapter (3000111) to the base of the VDR, and connect the other end of the RS232 cable to the PC.
- Connect the VDR OBDII cable to the OBDII connector in the vehicle.
- Start the vehicle and press the Live Data button in the 2004 mid-year VDR software.
- Live data stream now appears on the PC screen.
- The DTC button in the 2004 mid-year VDR software can now be pressed to view DTCs.

TIP: The new live data stream feature can be used only on the new CAN+ VDR (J-42598-B). The original VDR (J-42598) is NOT capable of displaying the live data stream.

TIP: The VDR is useful in solving intermittent driveability problems, but also has additional uses such as viewing live data (explained above), and capturing information during the crank mode. The CAN+ VDR can be set up to capture data while cranking. This could be helpful in a crank no start or cold/hot start complaints.

- Thanks to Mike Banar

New TXV Valve for A/C

GM HVAC Engineering has developed an updated Thermal Expansion Valve (TXV) for the 2005 Cadillac XLR. This new Low Maximum Operating Pressure (Low MOP) TXV helps to better control the high-side refrigerant pressure in high ambient temperatures, to optimize A/C system performance. This new TXV can also be used as a retrofit for the 2004 Cadillac XLR if customers are commenting on:

- Intermittent operation
- A/C blowing hot, moist air on occasion
- The engine cooling fan remaining on, frequently after the engine is shut off
- The engine cooling fan frequently running at maximum speed

The Low MOP TXV contains a smaller amount of fluid charge in the TXV bulb, which is located on the top side of this TXV. As the system refrigerant temperature rises, the bulb charge begins to change from a liquid to a gas. Because of its smaller amount of charge, it fully changes to a gas more quickly than the stock TXV. Once the bulb charge is entirely gaseous, the TXV acts as a pressure regulator, which is less influenced by refrigerant temperature.

This pressure regulator helps to control overall system pressure sooner. This results in less fan speed needed for condensing and continuous operation of the A/C system in hotter climates by preventing compressor disengagements due to high A/C head pressure. The Low MOP TXV is a better match for the pressure range of this A/C system.

Always follow the A/C Performance Diagnostic in SI to verify the system is performing to specifications before replacing any parts.

- Thanks to Chris Semanisin

Transmission Fluid Level

The Strasbourg 5L40E and 5L50E automatic transmissions (used in Cadillac CTS, XLR, and SRX) have a non-traditional method of checking fluid level. It is not done at normal operating temperature, but in a narrow range between 86°F to 122°F (30°C to 50°C).

- Thanks to Bob Martin

Battery Disconnect/Connect

Proper battery disconnect/connect procedures and precautions are presented numerous places in SI. It's important to observe and perform the instructions as presented. Failure to do so can cause personal injury, cause damage to the vehicle and its components, and cause various DTCs to set.

The following information highlights the proper steps to take when disconnecting or connecting a battery. For specifics, always consult the SI section that applies to the vehicle you're servicing.

IMPORTANT: To reduce the risk of personal injury while working near a battery, observe all safety precautions presented in SI.

Disconnecting Procedure

1. Record all preset and theft codes from the radio.
2. Turn off all lamps and accessories.
3. Turn the ignition switch to the OFF position.
4. Loosen the battery negative cable nut.
5. Disconnect the battery negative cable from the battery.

Connecting Procedure

1. Connecting the battery cable(s) should be done only with the ignition switch in the OFF position. Connecting the battery when the ignition switch is in the ACCESSORY or RUN positions can cause various DTCs to set.

TIP: If you do the connection incorrectly, clear DTCs before investigating any trouble codes for component failure.

2. Clean any existing corrosion from the battery terminal and battery cable using a wire brush.
3. Connect the battery negative cable to the battery. Tighten the battery cable nut to specification.
4. Reset all preset and theft codes previously recorded to the radio.

- Thanks to Marty Case

Cracked Serpentine Belt

All current GM vehicles designed and manufactured in North America were assembled with serpentine belts made with an EPDM material and should last the life of the vehicle. It is extremely rare to observe any cracks in EPDM belts and it is not expected they will require maintenance before 10 years or 150,000 miles (240,000 km) of use.

Older style belts, which were manufactured with a chloroprene compound, may exhibit cracks depending on age. However, the onset of cracking typically signals that the belt is only about halfway through its usable life.

A good rule of thumb for chloroprene-based belts is that if cracks are observed 1/8-inch (3 mm) apart, all around the belt, the belt may be reaching the end of its serviceable life and should be considered a candidate for changing. Small cracks spaced at greater intervals should not be considered as indicative that the belt needs changing.

TIP: Any belt that exhibits chunking should be replaced.

- Thanks to Jay Dankovich

Scrolling Radio Display

Customers with 2004-05 vehicles that have a Delphi navigation radio may comment that the preset display sometimes contains either a scrolling message or an unexpected message instead of the station ID. Some customers may find this confusing and distracting.

The fault is not with the radio. The radio station is broadcasting improper messages in place of the authorized station ID letters.

- Thanks to Kelly Lynch

Oil Life System Reset Procedures – Trucks

Many GM cars and trucks are equipped with an oil life system that determines when an oil change is required. After the oil has been changed, it's necessary to reset the system.

Procedures for resetting 2001 through 2005 trucks are published here. Passenger cars will be published next month.

The information for this article is the same as you will find in the applicable owner or service manual.

To find this information in 2001-4 eSI service manuals:

Select the vehicle

Select category General Information

Select category Maintenance and Lubrication

Select category Maintenance and then GM Oil Life System-Resetting.

Beginning with 2005, this information will be found only in owner manuals. To find this information in eSI owner manuals:

Select the vehicle

Select Owner Manual

Select Service and Appearance Care

Select Checking Under the Hood

Select Description and Operation

Select Engine Oil Life System

TIP: You may be able to use the Search function using the words Oil Life System Resetting.

TIP: You can find copies of charts for earlier models on the TechLink website on the Internet at http://service.gm.com. Look for the February and March 2000 issues and May and June 2003 issues.

2001 - 05 Aztek
2002 - 05 Rendezvous

If the vehicle does not have the optional Driver Information Center (DIC) do the following:

1. With the ignition key in ON but the engine off, fully push and release the accelerator pedal slowly 3 times within 5 seconds.

2. Turn the key to OFF.

3. If the CHANGE ENGINE OIL message comes back on, the engine oil life monitor has not reset. Repeat the procedure.

If the vehicle has the optional DIC, do the following:

1. Turn the ignition to ON with the engine off.

2. Press the MODE button until the DIC reads OIL LIFE LEFT/HOLD SET TO RESET.

3. Press and hold the SET button until 100% is displayed.

You will hear three chimes and the CHANGE ENGINE OIL message will go off. If the CHANGE ENGINE OIL message comes back on, the monitor has not reset. Repeat the procedure.

2001 - 05 Montana
2001 - 04 Silhouette
2001 - 05 Venture
2005 Terazza
2005 Uplander
2005 Montana SV6
2005 Relay

1. With the ignition key in RUN but the engine off, repeatedly push the trip/reset button until OIL is displayed on the Driver Information Center.

2. Once OIL is displayed, push and hold the trip/reset button for five seconds. The number will disappear and be replaced by 100 (indicating 100% oil life remaining).

3. Turn the key to OFF.

4. If the change engine oil message comes back on, the engine oil life monitor has not reset. Repeat the procedure.

2002 - 04 Bravada
2002 - 05 TrailBlazer
2002 - 04 Envoy
2004 - 05 Rainier

Without DIC

1. Turn the ignition key to RUN with the engine off.

2. Fully press and release the accelerator pedal 3 times within 5 seconds.

3. If the CHANGE ENG OIL light flashes for five seconds, the system is reset. If the light does not flash, repeat the procedure.

2002 - 04 Bravada
2002 - 05 TrailBlazer
2002 - 04 Envoy
2004 - 05 Rainier

With DIC

1. Press the fuel information button until ENGINE OIL LIFE appears in the display.

2. To reset the monitor, press and hold the select button while ENGINE OIL LIFE is displayed.

2004- 05 Canyon
2004- 05 Colorado

1. Turn the ignition to RUN but with the engine off.

2. Press and release the reset button in the DIC until the Oil Life message is displayed.

3. Once the alternating OIL Life and Reset messages appear on the DIC display, press and hold the reset stem until several beeps sound. This conforms the oil life system has been reset.

4. Turn the key to Lock.

If the CHANGE/OIL message comes back on when you start the engine, the engine oil life system has not reset. Repeat the procedure.

2003- 05 SSR

1. Press the fuel information button until ENGINE OIL LIFE appears in the display.

2. To reset the Oil Life System, press and hold the select button while ENGINE OIL LIFE is displayed.

3. If the light comes back on again when you start the engine, you will need to reset the system again.

2005 Equinox
2001 - 05 Sierra (Exc. some fleets)
2002 - 05 Sierra Denali
2001 - 05 Silverado (Exc. some fleets)
2001 - 05 Yukon and Yukon XL
2001 - 05 Tahoe and Suburban
2001 - 05 Escalade
2002 - 05 Escalade EXT
2002 - 05 Avalanche
2001 - 05 Yukon Denali
2003 - 05 Hummer H2
2003 - 05 Express (Exc. some fleets)
2003 - 05 Savana (Exc. some fleets)

1. Turn the ignition to RUN but with the engine off.

2. Fully push and release the accelerator pedal slowly 3 times within 5 seconds.

3. If the Change Oil Soon light flashes, the system is resetting.

4. Turn the key to Lock.

5. Start the engine.

6. If the Change Oil Soon light comes back on, the system has not reset. Repeat the procedure.

2002- 05 Saturn Vue

1. Turn the ignition to RUN but with the engine off.

2. Fully push and release the accelerator pedal 3 times within 5 seconds.

3. If the Change Oil Soon light flashes, the system is resetting. The light will flash for up to 30 seconds or until the ignition is turned to OFF.

4. Turn the key to OFF.

5. Start the vehicle.

6. The oil life will change to 100%.

7. If the Change Oil Soon light comes back on or stays on for 30 seconds at the next ignition cycle, the system has not reset. Repeat the procedure.

2001 - 05 B7 Chassis Medium Duty

1. Turn the ignition to START but with the engine off.

2. Fully press and release the accelerator pedal slowly 3 times within 10 seconds.

3. If the CHANGE OIL light flashes for five seconds, the system is reset.

4. If the light does not display for five seconds, you will need to reset the system again.

2003 - 05 560 C-Series

All except with Caterpillar diesel:

1. Turn the ignition to RUN but with the engine off.

2. Fully press and release the accelerator pedal slowly 3 times within 10 seconds.

3. If the CHANGE OIL light flashes for five seconds, the system is reset.

4.Turn the key to OFF.

5. If the light comes back on again when you start the engine, you will need to reset the system again.

All with Caterpillar diesel:

1. Turn the ignition to RUN but with the engine off.

2. Fully apply and hold the brake pedal while you fully press and release the accelerator pedal 3 times within 5 seconds.

3. Turn the key to OFF.

4. If the light comes back on again when you start the engine, you will need to reset the system again.

- Thanks to Jerry Garfield

Engine Oil Capacity Table on Website

An engine oil capacity table for all 2005 cars and trucks has been placed on the TechLink website.

Go to http://service.gm.com and click on TechLink. After selecting your language choice, click on the Reference Guides button. Locate and click on Oil Capacities for 1988-2005.

- Thanks to Jerry Garfield

Drive Sprocket Support

On some 4T80E transmissions, used in 2003 DeVille, Seville and Aurora, the drive sprocket support oil holes may not be completely drilled. The converter seal may be dislodged and/or the spring may be mispositioned. Symptoms include oil leaks in the converter area.

Replacing the converter seal alone may not correct the condition. Inspect the drive sprocket support for completely drilled oil holes. Blow compressed air through holes and listen for airflow out of the converter spline side. If the holes are not drilled, replace the drive sprocket support.

Blow air through holes

TIP: Corrective action has occurred in the transmission assembly plant. Date codes are not available to allow identification of suspect transmissions.

- Thanks to Darryl Butler

GTO Steering Wheel

When servicing the 2004 GTO steering wheel, note that the spoke covers are available in packages of four (p/n 92147964). Do not replace the steering wheel if only the covers need replacement.

- Thanks to Art Spong

Door Trim Panel Reflector

An upcoming bulletin announces that individual rear door trim panel reflectors 15183155-56 are now available for the 2003-04 C/K truck.

TIP: If the reflector needs to be replaced, DO NOT replace the entire door panel.

TIP: To remove the reflector, insert a flat-bladed tool behind the reflector and carefully pry it out, to avoid damaging the panel.

- Thanks to Jim Kukula

Rear Shock Absorber Upper Rubber Mount

Bulletin 04-03-09-001 refers to 2000-04 Cadillac DeVille.

The upper rubber mount 22182918 is now a serviceable component for the the rear shock absorber assembly.

- Thanks to Bill Denton

Rear Shock Absorber Assembly	Description	Part Number
22064808	Upper Rubber Mount – Rear Shock Absorber	22182918
22064809		
22064872		
22064873		
88955460		
88955461		

TACTips

Oil Pump to Case Seal

This information applies to 2004 Light Duty Trucks, Corvette and GTO.

General Motors Powertrain has made a design change to oil pump to case oil seal on the 2004 4L60E (M30) and the 4L65E (M32). The new seal is a stamped molded seal and replaces the O-ring style seal previously used. The two seals are not interchangeable.

The new seal is being phased into production starting in March of 2004.

When servicing transmissions with the new design stamped molded seal, use following precautions:

- The outer diameter of the pump assembly and case bore must be clean and free of burrs or raised surfaces. Be aware of sharp edges that could damage the seal during installation.
- The seal should be clean and dry before installation. It does not require lubrication for installation.
- Before installation, inspect the seal for obvious damage.
- It is preferable to hand-start the seal, positioning the seal evenly around the case bore, before installing the torque converter housing.
- The seal can be easily removed by prying it out, typical of a pressed-on seal.
- The seal may be reused. However, thoroughly inspect the seal for:
  - Distortion of metal carrier or separation from the rubber seal
  - Cut, deformed, or damaged seal.
  - The new stamped molded oil pump to case seal will not service transmissions produced before the design change, nor will the previous O-ring style seal work in place of the stamped molded seal.
  - The new stamped molded seal requires that the oil pump be installed and torqued before installing the molded seal. The molded seal is seated into position by installing and torquing the torque converter housing.

An informational TSB is in process and SI is being updated to include the new service procedures for the new stamped molded oil pump to case seal.

- Thanks to Mark Gordon

Transmission Clunk Bump Noise

The 2004 All Wheel Drive (AWD) Cadillac SRX may exhibit a clunk bump noise when completing range shifts of Drive to Reverse and Reverse to Drive. The condition may be intensified by abruptly accelerating before the transmission is fully engaged into range. The clunk bump condition is a result of internal lash build-up within the transfer case and driveline.

This condition is considered to be a characteristic of the AWD system. The vehicle should be compared to a like vehicle with similar mileage. Attempts to repair this condition have proven unsuccessful.

- Thanks to Mark Gordon

Car Issues -- Fix It Right the First Time

Model Year(s)	Vehicle Line(s) / Condition	Do This	Don't Do This	Reference Information / Bulletin
2001-2004	Aztek, Rendezvous (FWD), Venture/Montana/Silhouette – Pop and/or Rattle in Exhaust Down Pipe	Follow procedure in bulletin using clamp on down pipe to correct rattle/buzz noise.	Don't replace converter assembly for rattle/buzz noise without completing instructions in bulletin.	03-06-05-003
2000-2004	All Cars with 4T40/4T45E and 4T65E – Light On/Various Transmission Codes Stores	Check transmission 20-way connector for secure connection	Don't replace transmission, TCC PWM, VSS, PCS or valve body.	02-07-30-022B
1998-2004	Seville – Heated Seat Inoperative	Replace only needed heating element.	Don't replace entire seat cover if heated seat element is inoperative.	01-08-50-002C
2001-2004	Century/Regal – Intermittent SES, ABS or TCS Lamp Illuminated, Engine No Crank/ No Start, Various I/P Cluster Intermittents, DTCs Set, Shifter Locked in Park (BTSI Inoperative)	Check UBEC harness connectors for damage and replace damaged terminals.	Don't replace UBEC, ignition switch, SDM, BCM, shifter assembly (Regal) or intermittently inoperative clusters.	03-08-45-004
2000-2004	Cavalier/Sunfire/Alero/Grand Am – Inoperative Sunroof Module	Retime module or replace only motor for inoperative complaints.	Don't replace entire sunroof module assembly.	03-08-67-009A
2003-2004	Cavalier/Sunfire – Air Conditioning Compressor Noisy	Inspect for ground out conditions that can cause A/C compressor noise complaints.	Don't replace A/C compressor for excessive noise without inspecting for ground outs.	03-01-38-012
1999-2004	All Cars and Trucks – Brake Warranty, Service and Procedures	Issue One: Refinish brake rotor. Issue Two: Measure for LRO	Issue One: Don't replace the brake rotors. Issue Two: Don't measure for LRO	00-05-22-002D (May 2004)
2003-2004	CTS – Variable Effort Steering (VES) "Service Steering Message," DTC C1241 or C0450	Replace only VES solenoid.	Don't replace entire steering gear.	03-02-36-001
2003	All cars with 4T40/45E, 4T65E and 4T80E – Code P0742	Replace TCC PWM Solenoid	Don't replace transmission, torque converter or valve body assembly.	02-07-30-039C
2000-2003	LeSabre, Park Avenue, Regal, Impala, Monte Carlo, Bonneville, Grand Prix With 3.8L V6 Engine (RPO L36) – Loss of Coolant, Milky Colored Oil	Replace upper intake manifold gasket only.	Don't replace upper intake manifold assembly for coolant leak condition.	03-06-01-016

Truck Issues -- Fix It Right the First Time (new issues in **bold**)

Model Year(s)	Vehicle Line(s) / Condition	Do This	Don't Do This	Reference Information / Bulletin
2002-2004	**Fullsize and Midsize Pickups and Utilities – Labor Operation Assignments for Control Module Reprogramming**	**When reprogramming an electronic module, use labor operation that reflects module being programmed.**	**Don t use K5364, which is for reprogramming TCM, when reprogramming TCCM.**	**02-04-21-006D**
2002-2004	Fullsize and Midsize Pickups and Utilities – Sleepy New Venture Gear Transfer Case Control Module	Verify sleepy module as primary cause. Reprogram TCCM with latest software	Don't replace encoder motor or transfer case. Replace the module only if a C0550 DTC shows as current or in history.	02-04-21-006D
2004	Fullsize Pickups – 6.6L LLY Diesel Engine Injectors	04 LLY Duramax fuel injector is on restriction. Contact TAC for authorization.	Don't replace an LLY Duramax injector prior to contacting TAC.	GM Messenger VSS20040067
2002-2003	Chevrolet Avalanche and Cadillac Escalade EXT – Cargo Covers and Cladding Faded or Stained	Thoroughly clean, dry and treat components with "Armor-dillo." To order call (888)393-4722 or online at www.armor-dillo.net.	Don't replace cargo covers for this condition.	04-08-111-001
2002-2004	Fullsize and Midsize Pickups and Utilities – Transfer Case CNND Labor Operation	Use Labor Operation K9993 whenever transfer case issue on a 4WD or AWD vehicle cannot be duplicated or resolved after diagnostic efforts.	Don't use Labor Operation K9992, which is for manual transmission concerns or Labor Operation K9995, which is for automatic transmission concerns.	Service VME VSSM20030117
2002-2004	Fullsize Pickups – Rear Leaf Spring Slap Noise	Replace inserts and rubber washers.	Don't replace leaf spring.	03-03-09-002
2002-2004	All Passenger Cars and Trucks – Air Conditioner Compressor Diagnosis	Follow SI and bulletin for diagnostic information before compressor replacement.	Don't replace air conditioning compressor.	01-01-38-013A 03-01-38-019
2002-2004	All TrailBlazers, All Envoys, Bravada, Rainier with HomeLink Universal Transmitter – Programming Diagnosis	Use J 41540 – GM Integrated HomeLink Tester (essential tool). Follow SI and refer customers to their Owner's Manual.	Don't replace HomeLink Transceiver without validating internal fault	01-08-97-001B
2002-2004	All TrailBlazers, Envoy, Envoy XL, Bravada – Squeak/Rub/Scrub Type Noise in Steering Column	Lubricate and remove material, per bulletin.	Don't replace upper or lower intermediate shaft.	02-02-35-006A
2001-2004	Fullsize Pickups and Utilities – Servicing Wide Load Mirrors (RPO DPF)	Replace individual parts as needed.	Don't replace complete mirror assembly.	03-08-64-028

Know-How Broadcasts for August

August 12, 2004	
10280.08D Emerging Issues	All Eastern Time
- Pontiac, Buick, GMC	12:30 PM
- Chev Cars & Trucks	1:00 PM
- Cadillac, Hummer	1:30 PM

August 26, 2004	
10280.20D	Eastern Time
Technology Close-Up/ New Model Features - TBD	9:00 AM 12:30 PM 3:00 PM

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– Thanks to Tracy Timmerman