TECHlink
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Corvette Z06 Dry Sump Oiling System

The Corvette Z06's LS7 engine has a dry sump oiling system designed to keep the engine fully lubricated during the high cornering loads the Corvette Z06 is capable of producing. Ths LS7's dry sump system was developed and tested on racetracks in the U.S. and Europe, including Germany's famed Nürburgring. And while dry sump oiling is common in racing cars, the Corvette Z06 is one of just a handful of production vehicles — and the only production Corvette – to incorporate such a high-performance oiling system.

What is a Dry Sump Oiling System?

Most automotive engines use a wet sump sytem, in which all of the engine oil is stored inside the crankcase in the oil pan. In a dry sump oiling system, engine oil is stored in a reservoir external to the engine, so the crankcase contains only a minimal amount of oil at all times.

Reservoir and sump

What are the Advantages of a Dry Sump System?

In an engine with a conventional wet sump oil pan, the oil can slosh away from the oil pump pickup tube during high dynamic maneuvers like cornering, braking and

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Techline News

Tech 2 Extended Warranty

Your Tech 2 automatically comes with a two-year manufacturer's Express Exchange Warranty. Did you know that you can ensure the same reliable service on your Tech 2 by extending the manufacturers warranty?

GM Dealer Equipment (GMDE) is offering a special promotion on extended warranties during the third quarter of 2005. Purchase a two-year extended warranty and get the third year free.

	Warranty Service (with Express Exchange Warranty)	Regular Repair (without warranty)
Repair Time	24 hours (replacement units shipped to arrive the following morning for requests received before 3:00 pm PST	4-6 days
Administration	None: One phone call gets you a replacement unit the next day and return shipping arrangements	Delays in getting repaired unit; i.e., issuing checks, etc.
Costs — U.S.	1 Year $150.00 2 Year $280.00 3 Year $407.00 * * Purchase during 3rd Quarter 2005 and pay only $280.00	Approximately $785.00 average repair plus return shipping. Dealership service department losses due to not having Tech 2 for 4-6 days
Costs — Canada	1 Year $214.00 CD 2 Year $409.00 CD 3 Year $598.00 CD* * Purchase during 3rd Quarter 2005 and pay only $409.00	Approximately $973.00 CD average repair plus return shipping. Dealership service department losses due to not having Tech 2 for 4-6 days

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During the term of your warranty coverage, not only are there no charges for repairs performed to your Tech 2, you will be guaranteed a 24 hour express exchange warranty replacement service (warranty does not cover cables, adapters and the 32 meg card). If you have a problem with your Tech 2, simply call the GM Techline Customer Support Center (TCSC) at 800.828.6860 and you will receive an express exchange replacement unit the next business day at no additional charge.

Contact 1.800.GM.TOOLS (468-6657, option 1, option 3) for answers to any questions.

TIP: Please provide the following promotional code to receive this great offer: DES3RDT2.

- Thanks to Sue Sulewski

Programming Tips

Technicians continue to report occasional problems with incomplete programming events or errors. This leads to damaged controllers and unnecessarily high warranty. Here are tips that may help prevent some of these problems.

Insufficient Battery Voltage — The proper battery voltage is critical to programming. If voltage drops too low at the end of the programming event, calibration files or VIN data may not be written, causing problems or failure.

Be sure the battery is fully charged before starting the programming. If the battery voltage is questionable, you can use a Midtronics PSC charger during programming (July 2005 TechLink). At this time, GM has not validated any other charger for this purpose.

Not Turning Accessories Off — Before programming, turn off all electrical devices, such as headlights, radio, HVAC, etc. And during the programming event, do not turn on any electrical devices.

Not Using Current Software — You must use the most current Tech 2 software release and the most current TIS software release. To be sure you are always using the latest data, you must update your Techline terminal as soon as you receive the new software.

Not Waiting — Before performing a programming event, you must turn the ignition key on. Do not begin programming right away. It's critical to wait until all modules on the vehicle have "awakened" before beginning. (This is the same principle as waiting for any computer to "boot up". You cannot start to access applications on your PC until it fully boots up. The same applies for any vehicle systems with multiple modules.) If you try too soon, you will get a No Communica-tion message on the Tech 2.

A good rule of thumb is to observe the instrument panel lights and tones. When everything stops, you can safely proceed. Plug in your Tech 2 (and CANdi module if required).

Not Cycling Ignition — When working on a GMLAN system, you must cycle the ignition off and back on after programming each module. Do not begin programming a second module without turning the ignition off and on.

TIP: During the ignition OFF time, avoid opening and closing the doors for 30 seconds until the controller can write the new values.

Voltage Held in Components — Some components contain capacitors, which can store voltage after being turned off. If stored voltage is released by a module while you programming another module, it could cause confusion on the data bus, causing U codes to set. To prevent this, you may be instructed to disconnect the battery cables and touch them together. This drains the stored voltage from capacitors.

Using the Wrong Tech 2 Adapter — There are three 16-pin adapters that have been used with the Tech 2. At a glance, they all look the same.

Do not use adapter p/n 71419.

You can use either of the adapters numbered GM 3000098. They have been manufactured by two different vendors. One of them is coded VTX 02002955, and the other is coded HP 5063-3255. Either of these will work with CANdi modules.

- Thanks to Mark Stesney

Radio Labor Code

When servicing a radio under warranty, be sure to use the correct labor code. Do not use the XM radio receiver code when sending a regular or navigation radio.

- Thanks to Jim Hughes

Radio Type	Labor Code	Definition
Regular Radio or Navigation Radio	R0760	Remove, Repair and Replace
	R0762	Remove
	R0763	Reinstall
XM Radio Receiver	R5600	Replace

GM TechLink

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Remote Vehicle Start Accessory Kit Followup

The June 2005 issue of TechLink introduced you to the Remote Vehicle Start Accessory Kit, which can be dealer-installed on certain vehicles. Here are some reminders and some new information to help the installation go well.

During Installation

- Be sure you are using the latest version of Tech 2 and TIS software.
- The vehicle's battery must be fully charged before programming the module.
- The kit comes with two additional key fobs (the vehicle was delivered with two original key fobs). When programming the fobs using the Tech 2, you should program the new fobs in slots 1 and 2, to permit diagnosis of the new fobs (Impala, Monte Carlo, and Lucerne only). You can program the original fobs in slots 3 and 4.

TIP: Remember, the original fobs can be used only for remote lock and unlock; they cannot be used for remote start.

After Installing

Here are some points to keep in mind when checking system operation after installation.

- The hood must be closed for remote start to operate. If you attempt to check the installation with the hood open, the system will not work.
- Each remote start event times out after 10 minutes of engine operation. Then the key fob must be pressed again.
- Remote start can be used only twice, then the system must be reset. Do not interpret this as a malfunction. Turn the ignition on with the ignition key to reset the system.

- Thanks to Mark Stesney

Enhanced Master Technician Certification Program for 2005

(not applicable in Canada)

Becoming a GM Master Certified Technician means you've earned the right as a GM expert in a certification area and have demonstrated you have the skills and knowledge to "fix it right the first time."

The GM Service Technical College (STC) is introducing simulations as part of some 2005 GM Master Technician Certification (MTC) Assessments, to challenge and evaluate technicians' diagnostic skills.

GM service technician training is structured around a standard, performance-based curriculum. The curriculum blends in-dealership training with training at various off-site locations. In the dealership, the technician acquires component, systems, and diagnostic knowledge via Web Based Training (WBT) and Interactive Distance Learning (IDL). The technician can then practice and demonstrate the application of skills at various training locations by attending Hands-On courses. The capstone of this standard curriculum is GM Master Technician Certification (MTC) in each automotive or body service area.

It is very important that you are adequately prepared for the GM MTC Assessment. Here are a few tips on preparing for this challenging event:

- If traveling, arrive the day before the assessment.
- Review all WBT courses already taken
- Review all IDL materials received
- Talk to the service manager about any area that could be improved, including Service Repair documentation
- Review GM MTC Assessment Prep Guide at http://www.gmstc.com/home.asp
- Review the Service Information website, specifically for the Strategy Based Diagnostics (SBD) process.
- Find an expert at the dealership who can assist in the certification area
- Investigate and complete ASE certification in the subject matter area

IMPORTANT: If you have never taken a Hands-On course, or an on-line Hands-On simulation, you should complete one in the subject matter area before attending the Certification Assessment. If an on-line Hands-On simulation is not offered in the subject matter area, familiarize yourself with a simulation as close to that area as possible.

The following Master Technician Certification categories include a Hands-On Simulation:

- Brakes
- Gas Engine Performance
- Diesel Engine Performance
- Mechanical / Electrical Body
- Electrical / Electronics
- Steering & Suspension

To access and utilize the GM STC Hands-On simulations, follow these instructions:

1. Access the GM Training Website at www.gmtraining.com
2. Select Catalog>Catalog Search at the main menu and perform a search as illustrated below
3. Select "Course Number" from the drop down menu
4. Select "Ends with"
5. Type in "S" for simulations
6. Select W-Web-Based Training (CBT) from the drop down menu
7. A complied list of results will show at the bottom of the screen.

NOTES:

- The Certification Assessment is similar to the structure of a Hands-On course, but without the guidance from an instructor, or in the case of a simulation, a play-by-play coach. Experiencing the Hands-On training offered today gives the technician a much better idea of what to expect in Certification Assessment.
- The Master Technician Certification Assessment program has been revised to include up to seven technicians per session, rather than the previous five technicians per session.

For more information regarding GM MTC certification, please refer to the GM Training Website at www.gmtraining.com, Menu>Resources>Certification.

- Thanks to Rebecca Farrand

Corvette Z06 Dry Sump Oiling System — from page 1

accelerating. This starves the engine of oil, causing bearing damage or catastrophic engine failure.

The dry sump system stores engine oil in a tall and narrow oil reservoir. This shape prevents oil from sloshing away from, or uncovering, the oil pickup, even under extremely high dynamic maneuvers. The dry sump system enables increases to the dynamic capabilities of the vehicle, which is why racing cars and exotic sports cars use this type of oil system.

Reservoir location underhood

Additionally, oil aeration is lower in a dry sump system, because the oil spends less time in the presence of the crankcase windage. Oil delivered to the bearings is typically superior to that of a wet sump system.

Finally, without the need for a conventional sump, the engine can be placed lower in the vehicle, effectively lowering the center of gravity of the vehicle.

How Does a Dry Sump System Work?

In the LS7 engine, two oil pump sets (scavenge pump and supply pump) are located in the same housing on the nose of the crankshaft. The location is common with the oil pump in other small block engines.

The scavenge pump removes engine oil and air from the sump and pumps both to an external reservoir for conditioning and storage.

The oil is directed to the top of the reservoir, where it is allowed to spill onto a spiral-shaped baffle. Crankcase gases and air are separated from the oil and are returned by the PCV system to the engine, where they are burned. The deaerated and conditioned oil collects in the bottom of the reservoir, ready for use.

Scavenge circuit

Supply circuit

The supply pump draws the conditioned oil from the reservoir, pressurizes it, and feeds it to the engine by way of the oil filter and oil cooler. After the oil passes through the engine, it again flows into the sump to be returned by the scavenge pump to the reservoir once again.

Checking the Oil Level

The engine must be warmed up. Cold oil will not give a correct oil level reading.

After the engine is warmed up to at least 175°F (80°C), shut off the engine. Checking the oil with the engine running will result in an incorrect reading.

Wait for 5 minutes (but not more than 20 minutes), to allow the oil to drain and settle.

Pull the dipstick from the reservoir, and clean it with a lint-free cloth. Then push it back in all the way until it stops. Remove it again, keeping the tip down, and note the oil level on the crosshatched area.

Common Architecture

Common architecture is a term that is being used to describe the next level of vehicle data communication in GM cars and trucks.

It starts with a common Body Control Module (BCM) that will be used on numerous GM vehicle platforms. This is combined with an updated version of GMLAN (the revisions are transparent to the field, and relate to serial data message size).

The new BCM is flexible, able to accommodate a wide range of vehicle content and features. It will work on both car and truck platforms, with or without door modules, with either standard ignition or EZKey (i.e., XLR or STS).

Common Architecture Rollout

Common architecture will launch in 2006 with the Chevrolet Impala/Monte Carlo, the Cadillac DTS and the Buick Lucerne. Application expands in 2007 to include all full-size utilities.

Common Architecture BCM Basics

There will be only two BCM variants in production. These two controllers will be used in multiple applications, reducing the number of service parts required.

TIP: Always order the correct part for the vehicle being serviced.

Here are some of the new BCM's features:

- Seven connectors with 169 terminals.
- Approximately 100 DTCs, depending on vehicle configuration.
- Over 200 Tech 2 data list parameters.
- Approximately 40 Tech 2 output controls (depending on vehicle configuration).
- I/O (input/output) is reconfigurable. For instance, the DTS park brake switch input is on a different terminal in a different connector than in the Impala.
- All configuration is via SPS and "as built" data (much like Powertrain Controllers).
- All BCMs use the same set of core operational software.
- All configurations are determined by calibration files in flash memory. Different calibrations account for various options and accessories.

Set-Up Procedures

There are only two Tech 2 set up procedures:

- BPP Sensor Calibration
- Setup SDM Primary Key in SDM

TIP: The service part is non-functional before SPS programming. It will not communicate with other on-board devices, and the vehicle will not start.

Benefits of Common Architecture

Designed with flexibility in mind, common architecture will bring consistency to body control systems. Because functionality will be consistent across many GM platforms, it will be less likely to drive customer complaints based on normal operation. Reduced service part numbers are another benefit. In the future, this hardware and software will be easily transportable to new platforms.

- Thanks to Gary Clark

Parking Brake Light

Owners of some 2004-05 Cadillac DeVilles may comment that the brake light on the instrument panel (I/P) stays illuminated after releasing the parking brake. This may be caused by a weak return spring located at the rear of the parking brake cable.

If this conditon occurs, repleace the rear parking brake cables. Rear parking brake cables (p/n 15236959) contain a more robust return spring. Refer to Bulletin 05-05-26-001 for details.

- Thanks to Bill Denton

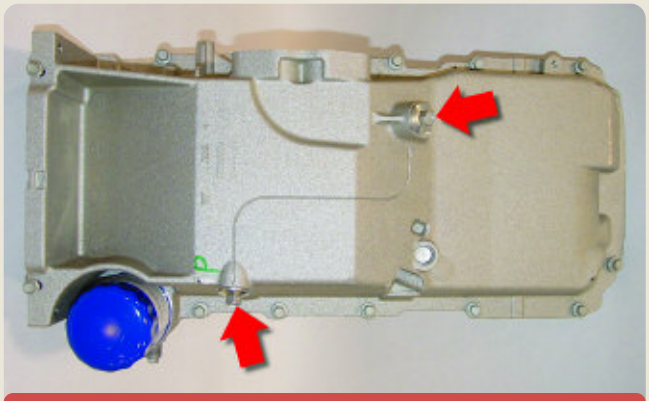
Underhood reservoir dipstick and fill cap

An oil level within the crosshatched area is normal. If the level is below the crosshatched area, add 1 quart (0.96 L) of 5W30 Mobil 1 synthetic oil through the oil reservoir fill cap and take another reading.

TIP: Do not overfill the reservoir, as this may result in excessive oil consumption. Oil levels above the crosshatched area may degrade lubrication system performance.

Oil Change Procedure

Remove the two drain plugs from the engine oil pan. One is located on the left side of the oil pan near the oil filter. This plug drains the small amount of residual oil from the engine oil pan, approximately 1 quart (0.96 L). The other drain plug is located on the front of the oil pan. This plug drains the external reservoir and hose assembly. Also remove the engine oil filter.



Location of two drain plugs

Once the oil has been drained from the engine and reservoir, replace the engine oil filter with a new PF48 oil filter and tighten to 25 Nm (18 lb ft).

Replace both oil drain plugs and tighten to 25 Nm (18 lb ft).

Fill the oil through the oil fill cap in the top of the dry sump reservoir. The total service fill, with a dry filter, is 8 quarts (7.57 L) of 5W30 Mobil 1 synthetic engine oil.

Replace the oil fill cap and start the engine. Let it run at idle for at least 15 seconds to circulate the fresh engine oil through the lubrication system. (This is similar to running an engine after a radiator fill, to purge air from the system.)

Check the oil level according to the instructions above. The oil change is now complete.

TIP: The owner's manual may contain a slightly different procedure, which calls for filling 7 quarts, running the engine then shutting off, and finally filling 1 additional quart. This procedure may be used, although it is not necessary.

TIP: There is a cap on the right valve cover under the decorative cover. Attempting to remove this cap can break the retaining tabs, requiring removal of the valve cover to retrieve broken pieces. Under no circumstances should you attempt to fill the engine oil system through this cap.

- Thanks to Dan Hommes and Ron Minoletti

Product Quality Center

The Product Quality Center (PQC) was put in place to help GM improve the quality of its products.

Before the PQC existed, the assembly return program asked dealerships to attach information to the returned assembly, explaining the concern and describing what diagnostics were done. Fewer than 25% of the returned units had any documentation attached. Most of the information was incomplete.

When PQC was instituted, dealers were required to call before the replacement of an engine, transmission or transfer case assembly. Now, PQC is able to collect the necessary information in a database.

All current model engines, transmissions and transfer case assemblies must be returned 100% (and also a sample of past model units). When Engineering disassembles these units, they refer to the PQC case file. This gives them all the information they need to determine the root cause of the failure. In this way, Engineering has been able to more quickly identify the causes of assembly failures. In some cases, Engineering contacts the service technician directly to further understand the cause of a specific failure.

Engineering then makes improvements in the product to eliminate the cause of the failures. This process has reduced assembly replacements in GM products by over 30% in three years.

This process has been so effective that it has been expanded to include other components, including body and IP wiring harnesses. These restrictions are usually much shorter in duration.

The PQC will continue to be an important part of the engineering failure analysis process. This, combined with the outstanding cooperation from dealers, will help GM reach the goal of manufacturing the highest quality vehicles available in the market.

- Thanks to Jim Colyer

Oil Capacity Chart

A new oil capacity chart has been posted on the TechLink website. It includes GM cars and trucks from 1996 through 2006.

On the website, click on the Reference Guides button, then scroll down to **Oil Capacities for 1996-2006**. Click to open the chart.

TIP: An earlier Oil Capacities chart is still available in the Reference Guides for GM cars and trucks from 1988 to 2005.

When the chart opens, scroll down the list to locate the vehicle, then locate the appropriate engine. The oil capacity is listed in both liters and quarts.

TIP: Pay attention to footnotes and other supplemental information.

- Thanks to Jerry Garfield

Fuel Filter Clarification

External fuel filters were used only on C/K trucks with an L59 engine (E85). These engines were used on utility models only, from 2002 to 2004.

- Thanks to Jerry Garfield

Integral Connector Position Assurance (CPA)

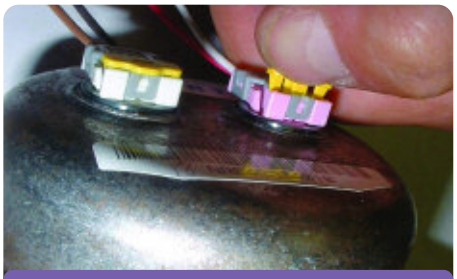
Many vehicle systems are using connection systems with an integral connector position assurance (CPA). In Supplemental Inflatable Restraint (SIR) applications, these CPAs are used to lift the shorting bars from contacting the connector terminals. This allows the airbag to be shorted before the connector is removed, to prevent unwanted deployment. After installation, if the CPA is not in the firmly locked position, a DTC will set for low resistance.

The example here shows a connector and CPA on the inflator assembly of the 2005 midsize trucks. This is an FCI connection system called ABX4 which will soon appear on other vehicles. If not operated properly, this CPA can easily be damaged during removal, which can cause DTCs to set after the CPA is reinstalled. The information provided here is to aid in the proper installation and removal of this connector and CPA.

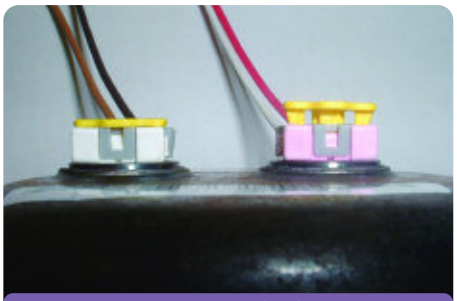
TIP: An article in the December 2004 TechLink described a similar situation where the steering wheel coil assembly CPA is integral to the system and causes the setting of DTCs when damaged or removed.

Connector Removal

With your finger or terminal release tool 12094430 from the J-38125 Terminal Repair Kit, apply an upward force on the CPA until the CPA is in the pre-lock position (approximately 1.7 mm).



Lifting CPA with finger



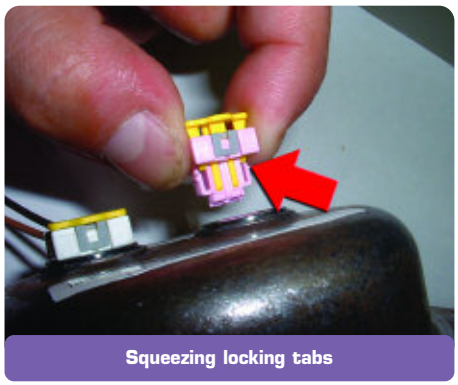
Locked position (left) and Pre-Locked position (right)

IMPORTANT: **Do not** pull the CPA completely out of the connector. If the CPA is removed completely from the connector assembly, it will be damaged and must be replaced with a new one.

TIP: Replacement CPAs will be available in the SIR tray in the terminal repair kit (J-38125) later this year. Until available, if the CPA needs to be replaced, order part number 88988974 RETAINER, INFL RST WRG HARN CONN (CPA AT DRIVER AIRBAG).

Remove the connector by squeezing the locking tabs while lifting the connector body.

Lifting connector



Squeezing locking tabs

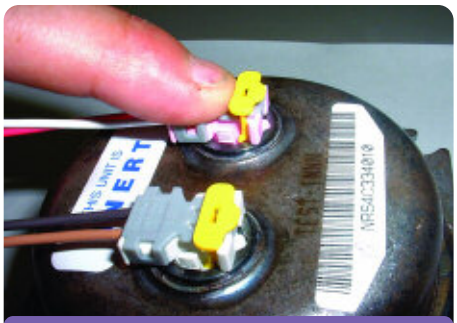
TIP: Do not pull on the harness cable or the yellow CPA as a means of removing the harness connector. Potential damage could result.

Connector Installation

Align the keyway of the connector to the mating side at the airbag module initiator.

Aligning keyway to mating side

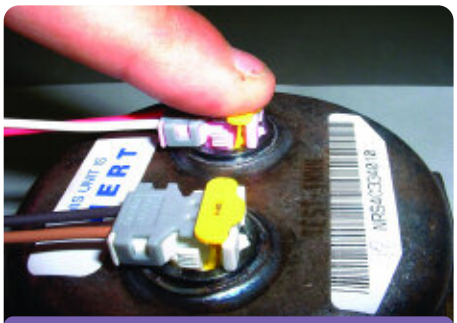
Press the connector body with your finger to engage the connector (a tactile feeling or audible click will indicate when it is seated). Typical mating force is approximately 25 N (5.5 lbs).



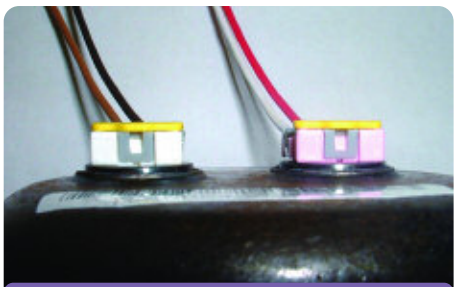
Engaging connector

TIP: The CPA must not be moved to the locked position until the connector is fully mated to the inflator assembly.

Only after the connector is seated, press the CPA with your finger to engage the CPA (a tactile feeling or audible click will indicate when it is seated).



Seating CPA



CPA properly seated

TIP: To prevent damage to the connector and CPA, do not exceed 75 N (16.5 lbs) of force.

Important Finishing Steps

After any SIR system repair, remember to follow these steps.

Reconnect all SIR system components.

Verify that all components, connectors and connector position assurances (CPAs) are properly mounted.

Use the scan tool to clear the DTCs.

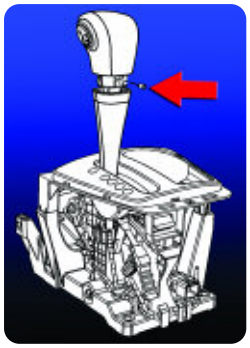
Operate the vehicle within the Conditions for Running the DTC as specified in SI to ensure that the DTC does not reset.

- Thanks to Chad O'Brien

Loose Shift Knob

Owners of some 2004-06 Chevrolet Malibu and Malibu Maxx may comment about a loose shift knob.

1. Remove the shift control shaft trim by sliding it downward on the shift control assembly shaft.
2. Remove the shift knob setscrew and raise the shift knob off of the shift control assembly shaft.
3. Clean the shift knob setscrew with a wire brush, and apply thread locking compound Loctite® 242 (GM p/n 12345382, 10953489 in Canada) to the setscrew.
4. Install the shift knob on the shift control shaft and reinstall the setscrew. Tighten the shift knob set-screw to 2.5 N·m (22 lb in).
5. Install the shift control shaft trim by pushing up until it snaps onto the lower portion of the shift knob.



- Thanks to David MacGillis

Running Board End Cap Installation

On 2004-05 Cadillac Escalades, running boards are assembled to the vehicle at the time of vehicle assembly without end caps. The end caps are shipped loose inside the vehicle with an instruction sheet and necessary fasteners.

Damaged end cap

TIP: End cap installation is part of the dealer PDI process and is incorporated in the PDI time for this vehicle.

The adjustment of the main part of the running board must be performed during end cap installation. The design of the end cap is sensitive to the position of the main part of the running board relative to the vehicle.

The 8 fasteners that secure the boards to the vehicle must be loosened before installing the end caps. Loosening the boards helps install the end caps without stress on the part and allows for proper alignment to the vehicle. Failure to properly align the board to the vehicle during end cap installation will cause the end cap to crack.

- Thanks to David Roland

TACTips

Service Brake Booster Message

This information applies to all full-size 2004 Cadillac, Chevrolet and GMC trucks and utilities with Hydroboost Brake System.

The Service Brake Booster message is used to notify the driver of a Supplemental Brake Assist (SBA) concern on vehicles equipped with a vacuum boost brake system. There have been reports of the Service Brake Booster Message being displayed on vehicles equipped with a Hydroboost brake system.

During normal diagnostics, a DTC C0136 may be present in the IPC. This DTC will not be in SI for Sport Utility vehicles, because all Sport Utilities use Hydroboost brake systems starting in 2004.

This message could be caused by the IPC being programmed incorrectly. If the IPC was replaced on a previous unrelated repair and was not SPS programmed, this message will be displayed after the IPC does not receive a valid state of health signal from the SBA for 5 consecutive ignition cycles.

To correct this concern, SPS program the IPC. To be sure the vehicle is repaired, cycle the ignition to off and on at least 5 consecutive times, delaying in each position at least 30 seconds.

- Thanks to Jim Will

Heated Seats Turn Off

Owners of some 2003-2005 Silverado and Sierra trucks equipped with the 6.6L diesel engine may experience the heated seats turning off after 3 to 5 minutes of operation and DTC B3941 sets. This concern will occur only on the first start in the morning and both the passenger and drivers heated seats are turned on at start up. After the heated seats inadvertently turn off, they can be turned back on and will continue to operate normally the remainder of the drive cycle.

To correct this concern, reprogram the DSM (Driver Seat Module) with service calibrations available from Techline on TIS2000 version 6.5 or later available June 13, 2005.

- Thanks to Jim Will

Driveline Vibration at Highway Speed

Owners of some 2005 Chevrolet Kodiak and GMC Topkick C4500/ C5500 Conventional 4x4 models with 152-inch wheelbase (RPO EG9) may experience a driveline vibration when driving at highway speeds.

These models are built with a single rear propshaft. Engineering has determined that the original rear axle pinion angle is not the optimum design angle for the 152-inch wheelbase and may result in some driveline vibration.

Change the rear axle pinion angle from the as-built 8.1° to the new 6.1° angle by replacing the original rear axle spring seats with the following spring seats available from GM Service Parts. Refer to SI document 1202795.

DESCRIPTION	GM P/N	QUANTITY
Rear Axle Spring Seat (6.1° pinion angle)	15640807	2

- Thanks to Jim Will

Transfer Case Stops Shifting

This information applies to 1999-2005 trucks and utilities with an RPO NR4, NP1, or NP8 transfer case.

The electronic transfer case may stop shifting if the driver tries repeated shifts in a short period of time.

The software in the transfer case control module has a shift abuse lockout mode to protect the module and encoder motor. This concern will occur if the module senses repeated shift requests in a short period of time. If the driver continuously tries to shift in and out of different modes, the transfer case control module will stop trying to shift for several seconds to prevent abuse damage to occur.

Cycling the ignition off for 30 seconds or more should allow the transfer case to resume normal operation.

- Thanks to Rusty Sampsel

Car 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
2004-2005	**Grand Prix (June 2004, 2005), Allure (2005) – Blower Motor Inoperative or Intermittent, Blower Speed May Drop or Blower Continues to Run After Key Off**	**Install 330MFD capacitor between LPM circuit and ground.**	**Don't replace LPM, blower motor or HVAC control head.**	**05-01-39-001A**
2002- 2005	**LeSabre – Front Door Window Binds/ Inoperative/Moves Slowly**	**Adjust glass.**	**Don't replace window regulator.**	**05-08-64-011**
2002-2006	**Cavalier, Sunfire, Grand Am, Classic – Vehicle Hesitates, No Start, Lack of Power, Low Fuel Pressure**	**Before replacing fuel pump module, replace fuel pump strainer using kit, P/N 88967293.**	**Don't replace fuel pump module.**	**05-06-04-026A**
2001-2003	Aztek, Rendezvous – Window Regulators Separate from Window Motors	Use window regulator clips and procedure outlined in bulletin.	Don't replace window regulator assemblies that are serviceable and only have broken clips.	03-08-64-015
2003-2004	Cavalier, Sunfire – Difficult to Adjust HVAC Control Head Mode Dial	Replace foam which delaminated from mode door and is causing bind.	Don't replace HVAC control head, module or cables unless damaged.	03-01-38-005B
2005	Equinox LT/LS (AWD Only) – Moan, Bind or Growl Coming from Rear During Low Speed Parking Lot Turns	Replace RDM coupling (clutch pack) with proper sealers. Fill with Versatrak fluid.	Don't replace complete rear drive module.	04-04-20-004
2002-2005	Cars and Trucks – Multiple Driveability Symptoms/ Clogged Fuel Injectors	Clean fuel injectors as described in bulletin	Don't replace fuel injectors.	03-06-04-030A
2000-2003	Century, Regal, Lumina, Impala, Monte Carlo, Grand Prix, Intrigue with 3.8L L36 Engine – Coolant Leak	Replace upper intake manifold gasket only.	Don't replace upper intake manifold assembly for coolant leak.	03-06-01-016
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 brake rotors. Issue Two: Don't measure for LRO	00-05-22-002F

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
2002-2005	**Escalade, Yukon – Stains on Rear Bumper Step Pad**	**Apply Armor-Dillo to rear step pad.**	**Don't replace rear step pad.**	**03-08-43-002A**
2004-2005	**Colorado/Canyon – Side Door Window Glass Clips Fall Off Glass/Window Inoperative**	**Replace door window glass.**	**Don't re-attach door window glass clips.**	**04-08-64-022**
2002-2004	**Silverado, Suburban, Tahoe, Sierra, Yukon/XL, Escalade EXT – Rough Idle, Misfire, MIL DTC P0300**	**Measure intake manifold for warpage across two runner ports only. Replace upper manifold gasket with teal-green color gasket.**	**Don't measure intake manifold for warpage across all four intake runner ports. Do not replace upper intake manifold gasket with orange-colored gaskets.**	**05-06-04-029**
2000-2003	Tahoe, Suburban, Yukon, Yukon XL – DTC P0446 Set SES Illuminated	Replace EVAP vent solenoid.	Don't replace EVAP canister.	04-06-04-055
2003-2004	SSR – Return of Cooling Fans to WPC – NTF	Replace cooling fan fuse (37) and/or repair cooling fan wiring harness.	Don't replace cooling fan	04-06-03-004A
2004-2005	Midsize and Fullsize Pickups and Utilities – CD Issues	Load new software calibration.	Don't exchange or replace radio	04-08-44-021A
2002-2005	Tahoe, Suburban, Yukon, Escalade, Avalanche, H2 – Exhaust Pop/Ping Noise	Replace heat shield.	Don't replace exhaust system	03-06-05-008B
2004	Tahoe, Suburban, Silverado, Yukon, Yukon XL, Sierra, Escalade, Escalade EXT, Escalade ESV, H2 – Passenger Door Module and RKE Inoperative	Re-flash passenger door module.	Don't replace passenger door module.	04-08-52-005
2001-2003	Fullsize Pickups – Injector Replacement for High Flow Rates	Use Corporate Bulletin Number 04-06-04-007A for injectors with high fuel return rates. Use Special Policy 04039 for all 01-02 vehicles.	Don't replace 8 injectors for any complaint other than high fuel return rates. All other injector failures are fix as failed.	Special Policy 04039
2004-2005	All Cars and Trucks – State-of-Charge Upon Delivery of New Vehicle	Check battery's state-of-charge per revised PDI using J-42000 or J-42000-EU	Don't remove and replace battery.	02-06-03-009A

Know-How Broadcasts for September

10290.09D Emerging Issues	September 8, 2005, 9:30 AM and 12:30 PM Eastern Time
New Model Features	For Web NMF courses, log on to the GM Training Website (www.gmtraining.com). Select Service Know-How from the menu, then choose New Model Features for a selection of courses.

– Thanks to Tracy Rozman