

## Battery Charger for Programming



An article in the April 2004 issue of TechLink explained the potential consequences of using a battery charger during programming. Stable battery voltage is critical

during programming. Any fluctuation, spiking or loss of voltage will interrupt programming, which could cause the controller to lock up. Two critical items are:

- Precise voltage control
- Clean DC (AC eliminated)

Dealers, however, recognize that programming time has increased dramatically and may now run upwards of 60 minutes for some applications.

This is due to larger calibration files and GMLAN controllers that take longer to program.

The programming of modules requires the ignition key to be turned on, without the engine running. This, of course, means that during the programming event, the vehicle's systems are operating from the vehicle battery. So, battery charge is critical.

For these reasons, an external power source would be desirable.

Good news. GM recently validated the Midtronics PSC line of chargers for use while programming controllers/modules. Two output levels are available – the 30 amp PSC-300 and the 55 amp PSC-550.

### Features

The PSC charger is extremely easy to use. Simply attach the cables to the battery, plug in the charger power cord, and you're ready to charge.

- No dials or controls to set
- Clean, noise-free DC voltage to support programming activities (< 50 mV rms)
- Fully regulated output prevents over-charging
- Over-current protection – cycle-by-cycle peak limiting, as well as rated current limiting to maximize the life of the converter
- Output voltage approximately 13.4 vdc at full load

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### Techline News

#### TIS 2 Web, Phase 2

Last summer, GM Service and Parts Operations launched TIS 2 Web, a new version of the TIS diagnostic/programming application that operates from a central Internet site. The first phase of this new application enabled dealers to update their Tech 2 software. Today, nearly 90% of all U.S. and Canadian dealers are downloading Tech 2 updates using TIS 2 Web.

By making the software updates available from a central site instead of locally at the dealership, TIS 2 Web provides increased updates, consistent software version utilization and improved support for all users.

#### Service Programming System

The next phase of TIS 2 Web includes the release of Service Programming Systems (SPS). Accessing SPS from TIS 2 Web will allow dealers to download calibrations from the website.

With this upgrade, technicians will no longer have to wait for data broadcasts to

GM ACCESS for calibrations, and at the same time it will allow GM engineering to significantly increase the speed at which calibrations are released. In addition, SPS will reduce the number of VCI requests and instances of missing VINs.

The transition to the new version of SPS will be easy for technicians. With the exception of some minor enhancements to SPS functionality, TIS 2 Web SPS operates very much as SPS currently does in the dealership.

#### Phase 2 Timing

Phase 2 of TIS 2 Web, featuring the release of SPS, will begin as a pilot program in July at approximately 200 participating dealers throughout the five regions in the U.S. and Canada.

All U.S. and Canadian dealers are expected to have access by the fall of 2005.

Phases 3 and 4 will be the final phases of TIS 2 Web, and will include Tech 2 View and Snapshot Upload/Display. Look for these releases in early 2006.

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## Battery Charger for Programming — from page 1

- Reverse polarity protection
- Works with 12v flooded lead batteries as well as AGM (absorbed glass mat) batteries
- Switch-mode design reduces heat build-up
- Proportional fan control regulates fan speed according to converter's temperature, minimizing fan noise
- When used during programming, the PSC supports loads, and charges the vehicle's battery (battery will be returned to customer in higher state of charge than when it entered the service bay).
- When battery is charged, the charger acts as a regulated power supply to sustain accessory loads and offset parasitic drain
- Quiet, small and compact for portability
- Detachable cables for easy field service

### Carrying Case

The carrying case permits you to use the PSC charger without fear of damage to paint, trim or interior components. The case



is designed to allow the charger to be operated while inside the case. With the case cover closed, only the cables are exposed.

### Other Uses

The PSC charger will deliver current up to the rated value, to charge a 12-volt automotive battery

when battery voltage is depressed due to discharge.

Because the PSC charger is compact and quiet, it is suitable for continuous use in the showroom. It will maintain the battery in your showroom display vehicle, permitting the salesperson to demonstrate power-consuming accessories and electronic devices without the embarrassment of power loss.

### How to Obtain

These chargers are available from GM Dealer Equipment (1.800.GM.TOOLS). You can order either the 165-PSC-300K (30 amp) or the 165-PSC-550K (55 amp).

- Thanks to Steve Marek, Midtronics

## Techline News — from page 1

### TIS 2 Web Access Requirements

A dealer admin message will announce the production release of TIS 2 Web SPS. To access TIS 2 Web SPS, launch TIS from the Techline PC and click on the SPS Web icon on the TIS main screen. It operates much like the Tech 2 Software Download.

TIS 2 Web also can be accessed by clicking either the Parts or Service tabs in DealerWorld (U.S.) or GM infoNET (Canada).

To operate TIS 2 Web effectively, Dealers must have:

- The appropriate Techline PC hardware requirements as part of the Multiple PC Initiative (MPI). (See <http://service.gm.com/techlineinfo/techlinepc.html> for hardware requirement details or contact your Techline Consultant for more information.)

- High-speed Internet connectivity at the Techline PC.
- Individual DealerWorld (autopartners) ID and password for each technician.

**TIP:** DealerWorld IDs are managed by the dealership's Partner Security Coordinator. Security parameters in place will not allow ID/PW credentials to be shared.

### Techline Support

If you need assistance with TIS 2 Web SPS as it is released or with TIS 2 Web Software Download, contact the Techline Customer Support Center (TCSC) at 1.888.337.1010, prompt 3. Saturn retailers may use 1.888.7SATURN for assistance. In Canada, 1.800.828.6860 English, 1.800.503.3222 French.

- Thanks to Mike Waszczenko

## TechLink Subscription – Reminder

U.S. dealers have the ability to manage some of the content in their weekly Dealer World Delivery (DWD) Box. Using the Dealer Subscription application, located on the DWD Store website, dealers have the ability to select which periodic publications they want mailed to their dealership. TechLink is included in this procedure. Dealers have the ability to select which publications they would like to receive, as well as the quantity. Dealers will have the ability to continuously adjust their DWD box.

**IMPORTANT:** If a dealer fails to enroll in the subscription process or does not select a specific publication, the default 'ship to' amount is zero (0). In other words, if no selection is made, the dealer will not receive the publication.

- Thanks to Mark Stesney



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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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.

Inclusion in this publication is not necessarily an endorsement of the individual or the company.

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## Door Lock Switches

This information applies to the 2005 Chevrolet Equinox.

The door lock switch is retained in the bracket by two tabs. The tab closest to the electrical connector is less flexible than the other.

If disassembly and assembly are done incorrectly, you may break the lock tab on the side of the switch closest to the connector.

### Disassembly

Apply pressure with finger or screwdriver on the locking tab that is furthest from the electrical connector

Don't apply pressure with finger or screwdriver to the locking tab that is closest to the connector.

Disconnect the electrical connector after removing the switch.

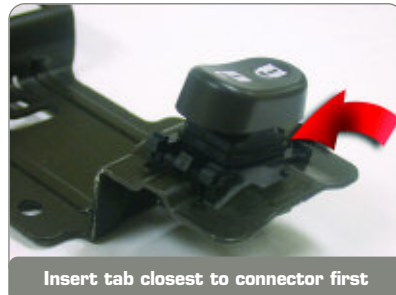
### Assembly

Connect the electrical connector before installing the switch.

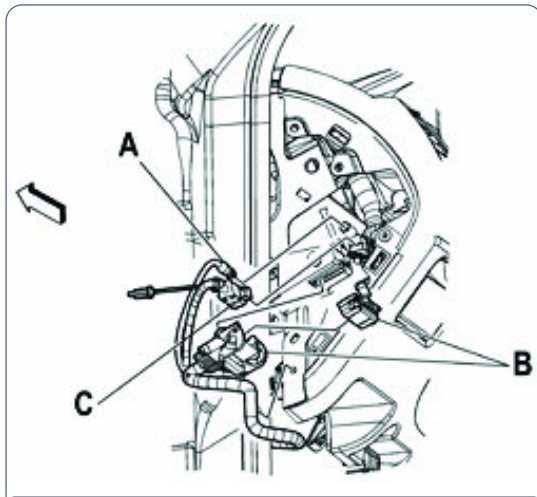
Insert the locking tab on the switch that is closest to the electrical connector into bracket hole. Then, place both thumbs on the switch and snap the remaining locking tab into the bracket.

Don't push both locking tabs at once.

- Thanks to Angelo Girolamo and David Cho



## Accelerator Pedal Position Sensor



water intrusion. Water in this connector may cause SES, SVS, and APP codes, or other various codes to set. The predominant codes set are for the Accelerator Pedal Position Sensors. The diagnostic parameters for the pedal sensors are more sensitive to this condition and may be the first to show the concern.

If you find water in connector C206, check for a possible water leak from the top of the A-pillar at the ditch molding or sunroof drain and reseal/repair as necessary.

- Thanks to Dave MacGillis

This information applies to the 2004-06 Chevrolet Malibu and 2005-06 Pontiac G6.

The SES light may be on and/or various electrical concerns and multiple or repeat Accelerator Pedal Position Sensor (APP) codes: DTC P2125, P2120, and P2138.

If a vehicle is found to have multiple accelerator pedal codes or repeating codes for the ETC pedal system, check the in-line connector C206 on the left side of the instrument panel for

## TOP TIER Detergent Gasoline Marks One Year

TOP TIER standards developed by BMW, General Motors, Honda and Toyota were aimed at reversing the national trend toward lower gasoline additive concentration. The U.S. EPA requires a minimal amount of detergent additive in all gasoline. However, the level is often not sufficient to prevent engine deposits from forming. TOP TIER Detergent Gasoline helps keep engines cleaner than gasoline containing the minimum amount required by government regulation, and helps provide optimal fuel economy, performance, and reduced emissions.

In the past twelve months, six fuel marketers have joined the TOP TIER Detergent Gasoline program:

- ChevronTexaco
- Shell
- QuikTrip
- Entec Stations
- ConocoPhillips
- MFA Oil Company.

Together they represent about 35 percent of all the gasoline sold in the U.S.

**TIP:** TOP TIER gasoline suppliers are listed on the GM TechLink website, under the Reference Guides tab.

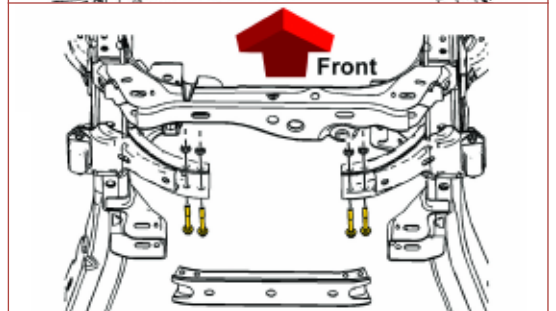
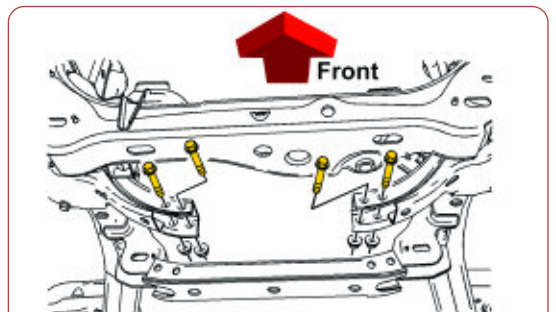
## Crossmember Bolts

On the 2004 and early 2005 (before April 2005) Colorado and Canyon, the front crossmember-to-frame bolts were installed front-to-rear. This made crossmember removal more time consuming because it was necessary to rotate the steering gear out of the way.

After April 2005, the assembly plant is installing the crossmember-to-frame bolts rear-to-front.

The SI procedure now recommends that when the front crossmember-to-frame bolts are reinstalled, they should be installed rear-to-front, so that if future crossmember removal is needed, the steering gear will not have to be rotated.

- Thanks to Dan Stress



Crossmember bolt installation  
(early version, top, and late version, bottom)



# Diesel Coolant Heater

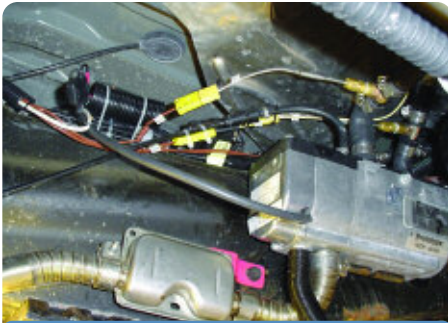
A supplemental coolant heater (Eberspächer model D5WZ) is available on the 2006 diesel-equipped Chevrolet Express and GMC Savana Diesel (2WD and 4WD).

**TIP:** The parts catalog, labor time guide and SI will refer to this as a Heater Coolant Heater.

## OPERATION

For ambient temperatures below 40°F (4°C), the coolant heater provides supplemental heating energy for the passenger compartment. It has a heat output up to 17,000 BTU (5kW).

The heater operates on the vehicle's 12 volt power supply and diesel fuel. The system contains combustion chamber, fan, and fuel pump. The heater has two heat levels and cycles between these levels to maintain a consistent coolant temperature between 185°F and 194°F (85°C and 90°C) called for by the control unit.



Heater location underneath vehicle

When the PCM requests supplemental heater operation, a signal from the internal control unit starts the heater. A blower draws combustion air into the heater's ignition chamber while fuel from the vehicle fuel tank is drawn into the chamber by the heater's fuel pump and mixed with the air. A glow plug ignites the fuel/air mixture, establishing a controlled flame inside the sealed heat exchanger.

The D5WZ system has a flame sensor to abort the startup attempt if the flame is not established, or to switch off the fuel pump in case the flame is extinguished during operation. In both cases, an automatic restart is performed.

The vehicle coolant pump continuously circulates coolant over the heat exchanger and throughout the coolant system.

The coolant temperature regulation controls the heat mode from high, low, and off. The coolant temperature sensors cycle the unit off if the coolant temperature reaches the maximum set point.

- The Fuel Metering Pump (A) pumps the fuel out of the vehicle's fuel tank and into the combustion chamber.
- The Heater Blower (B) blows the oxygen, which is necessary for the combustion process, into the combustion chamber.



- A Ceramic Glow Plug (C) generates the evaporation energy and creates the temperature which is necessary to ignite the air-fuel mixture.
- The Heat-Exchanger (D) transfers the energy of the combustion process into the engine coolant with an average efficiency of 81%.
- Depending on the coolant temperature, which is detected by the Temperature Sensor (E), the heater operates at either high or low setting or is shut off.
- The integrated Control Unit (F) with diagnostic interface and a redundant overheating "watch-dog" provides highest functionality and security.

diesel fuel operated heater starts in high power and switches to low power when the coolant temperature reaches 185°F (85°C). If the coolant temperature reaches 194°F (90°C), the heater switches off and restarts once again at 167°F (75°C). It switches back to high if the coolant reaches 167°F (75°C) in low power mode.

## SERVICE DIAGNOSTIC TIPS

An understanding of the unit's operation and control logic may be helpful in diagnosing improper operation. Here are some highlights.

Before every start of the heater, a **self-test** checks the operation of the following components:

- Control unit
- Flame sensor
- Control sensor
- Overheat sensor
- Glow plug
- Fuel pump
- Blower motor

If the self test is passed, **startup** commences.

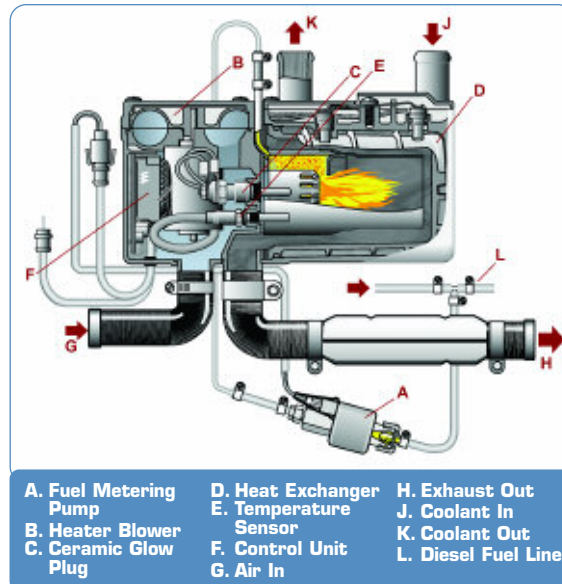
- Glow plug is turned on and heats combustion chamber
- Blower switches on
- Fuel pump supplies fuel to combustion chamber
- Fuel ignites
- Flame sensor senses that combustion has started, and glow plug is turned off

If the first start is not successful, **restart** begins. In this case, the glow plug voltage is increased to obtain greater heat for starting.

Then the first start sequence repeats.

If the second start is unsuccessful:

- Fault code is set
- Restart will occur only if ignition is switched off and back on.
- After 4 attempts, restart will not occur until fault memory is cleared.



## REGULATION FUNCTIONS

**Ambient Temperature Control** – For temperatures below 40°F (4°C), the diesel fuel operated heater provides supplemental heating energy for the passenger compartment. An inferred ambient temperature signal and engine run signal are provided by the PCM.

**Coolant Temperature Control** – The

continued on page 6

# Camshaft Position Actuators

The Vortec in-line engine family now consists of three engines:

Vortec 2800 LK5 (2.8L)  
Vortec 3500 L52 (3.5L)  
Vortec 4200 LL8 (4.2L)

All of these engines use an Exhaust Camshaft Position Actuator (cam phaser) that allows the PCM to change the relationship of the camshaft relative to the crankshaft, permitting better control over emissions and performance (TechLink, November 2001). The style of cam phaser currently used for the Vortec in-line engine family is a Splined Phaser and will soon be changing to a Vane Phaser.

## Review of Splined Phaser Operation

The splined phaser uses an internal piston that connects the camshaft and cam phaser sprocket together using helical splines, forming an adjustable mechanical link. A PCM commanded control valve manages the oil pressure to the cam phaser internal piston. The internal piston rides along the helical splines, rotating the

cam phaser gear and the camshaft opposite of each other, changing cam timing.

A spring within the cam phaser holds the piston in an advanced position (0°) when no oil pressure is applied. This allows the engine to start and run with the cam in the home position. When cam phasing is desired, the PCM can retard the cam position up to 25° by varying oil pressure to the piston through the control valve.

## Vane Phaser Operation

The Vane Phaser is controlled the same way as a splined phaser, through a control valve, but internally its components are very different. Instead of using an internal piston with splines, a rotor with four vanes is connected to the end of the camshaft. The rotor is housed inside of the stator that is bolted to the cam gear.

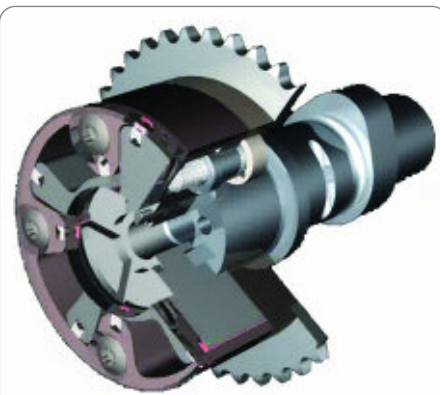
The rotor and stator are not linked mechanically together as in the splined phaser. Instead, oil pressure is controlled on both sides of the vanes of the rotor, creating a hydraulic link to the stator. By varying the balance of oil pressure on

either side of the vanes, the position of the camshaft can be controlled. A return spring is also incorporated under the reluctor of the phaser to help return it to a 0° (home) position.

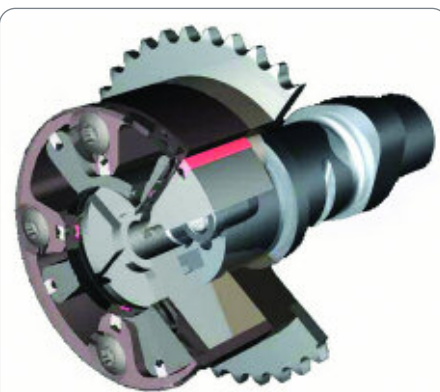
During start-up, when little oil pressure is available, an internal spring-loaded locking pin keeps the rotor and stator locked together in the home position. When phasing is desired, oil pressure is applied to the phaser, unlocking the pin. As with the splined phaser, a 25° cam retard can be achieved.

## Cam Phaser Checks

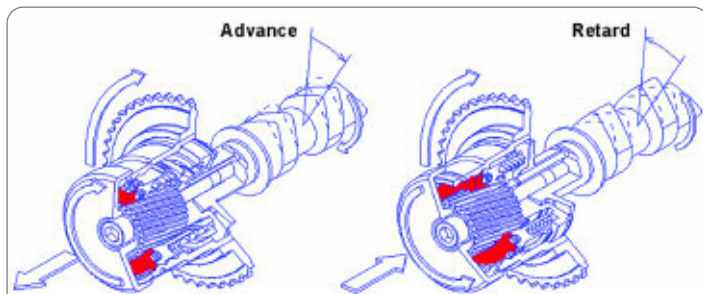
Due to these differences, the cam phaser checks in SI have been modified. For the splined phaser, you can check the ability for it to rotate against the internal spring and also check the range



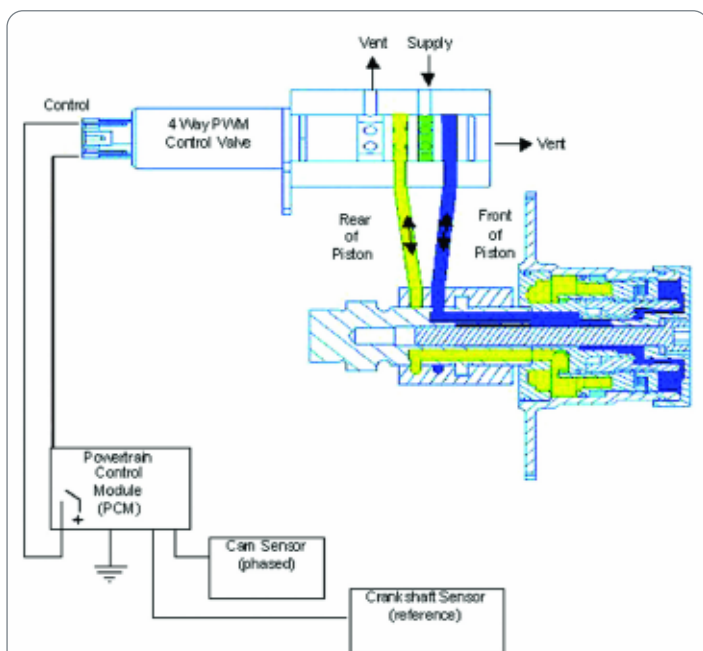
Phaser home position



Phaser retard position



Splined Phaser Operation



Control Valve Operation

of motion at the same time by using a wrench to turn the camshaft (refer to SI document 779675). Of course you have to remove the valve cover to do this. This helps determine if there are internal problems with the splined phaser.

The vane phaser has a locking pin that prohibits the free movement of the rotor and stator when no oil pressure is applied. You must remove the phaser from the engine, clamp the cam sprocket in a vise, and apply air pressure to the oil port to unlock the pin and check range of motion (refer to SI document 1530725). Be careful when doing this. Oil will leak out of the cam phaser components when air pressure is applied (this is normal). You also may see small oil bubbles coming out of the cam sprocket itself. This is also normal. The cam sprocket is made from powdered metal and is porous in nature.

## Vane Phaser Service

The vane phaser is serviced as an assembly and must be replaced if:

1. it does not unlock when air pressure is applied
2. it does not lock when air pressure is removed
3. it does not move within the range of motion specified in SI.

- Thanks to Randy Pearl, Delphi



# Brake Repair Bulletin Revision

Corporate Bulletin Number 00-05-22-002E (Section 05 — Brakes) is being revised to introduce a new labor operation for brake burnishing as well as including the 2006 model year vehicles.

## Brake Burnishing

When a vehicle is parked for long periods of time in humid conditions, the braking surface area under the pads corrodes at a different rate compared with the rest of the braking surface area (a condition known as "lot rot"). This kind of corrosion can cause pulsation due to thickness variation.

Cleaning up of braking surfaces (burnishing) can be accomplished by 10 to 15 moderate stops from 56 to 64 km/h (35 to 40 mph) with cooling time between stops. If multiple moderate braking stops do not correct this condition, the bulletin instructs you to follow the Brake Rotor Clean-Up procedure, using an approved brake lathe.

## Labor Operation for Burnishing

Bulletin 00-05-22-002E introduces a new labor operation H9709, which is intended to cover the burnishing procedure. If burnishing clears up the condition, use this code.

**TIP:** Labor operation H9709 - Brake Burnish is not a published labor operation and will not be found in the Labor Time Guide. This labor operation should be used to claim the necessary time for cleaning up the braking surfaces for thickness variation pulsation due to lot rot corrosion

**IMPORTANT:** If the pulsation condition remains after burnishing, you must follow the Brake Rotor Clean-Up procedure. In this case, **do not use** the H9709 labor code. The time to perform the burnishing procedure is included in the labor time for Brake Rotor Clean-Up.

- Thanks to Steve Love

## Diesel Coolant Heater — from page 4

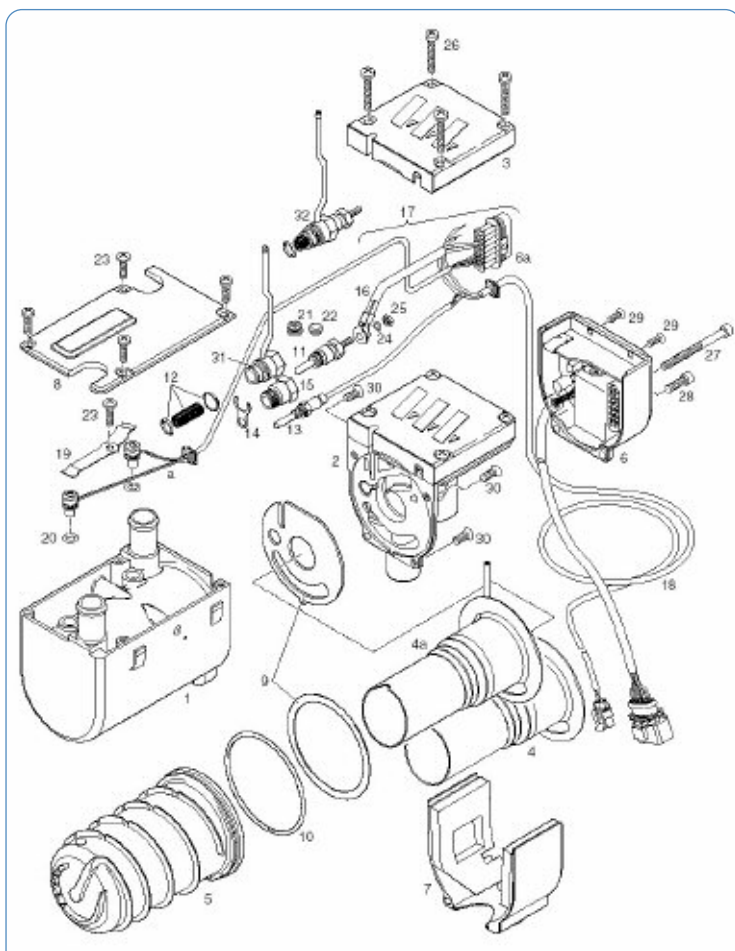
When coolant reaches the specified temperature, **shut off** (run-on mode) occurs:

- Combustion chamber is cooled and prepared for next new start
- Glow plug and blower are activated to clear the combustion chamber

## PARTS

A number of service parts are available for the supplemental Heater Coolant Heater.

- Thanks to Robert Tette



not shown	Coolant Heater Assembly	13	Flame Sensor	3	Upper Cover
not shown	Air Supply Hose	8	Heat Exchanger Cover	2	Blower
not shown	Exhaust Muffler	6	Heater Control Unit	7	Lower Cover
				11	Glow Plug

## Corvette Z06 Training (not applicable in Canada)

Chevrolet has determined that the following service classes are essential to properly service and repair the 2006 Chevrolet Z06. To qualify to receive distribution, dealers must agree to purchase the Z06 essential tools and have completed the following service courses:

**10290.13D** – 2006 Chevrolet Corvette Z06 Features & Systems (Service Know How Seminar)

**10441.17D** – 2006 Chevrolet Corvette Z06 Diagnosis and Repair (IDL Broadcast)

**16440.12D** – Engines New and Updates (IDL Broadcast)

The 2006 Z06 will be the first US production car to use an aluminum frame, magnesium cradle and carbon fiber body components. These high-tech features require specialized service and repair procedures.

Dealerships that do not have a body shop can provide GM training for their selected sublet facility. The technicians that take and pass the training are entered in to the GM Training data base and assigned to that dealership.

With the aluminum frame and carbon fiber panels, there are four classes that will be required for body shop repairs. Taken together, these courses will enable body service Corvette Z06 certification:

**WCA01** – Aluminum GMA (MIG) Welding

**WCA02** – Automotive Aluminum GMA (MIG) Welding Qualification Test Prep

**WCA03** – Automotive Aluminum GMA (MIG) Welding Qualification Test

**GEN01** – 2006 Corvette Z06 Collision Repair Overview

**TIP:** The Aluminum (MIG) Welding courses must be taken in sequential order.

I-CAR has been selected to develop and provide this training. You can access the I-CAR training site through the GM Training web site at [www.gmtraining.com](http://www.gmtraining.com) and click on the associated links to I-CAR. The I-CAR help desk phone number is 1.800.422.7872, and the website is [www.i-car.com](http://www.i-car.com).

**TIP:** You must pre-register at least four weeks in advance with I-CAR. You must pre-pay I-CAR; payment options are on the pre-registration form.

The Service Know How and IDL broadcasts are scheduled to begin in August 2005. The I-CAR training should be started now to provide adequate time to get the body shop personnel through the training. Each of the I-CAR classes lasts approximately 4 hours.

If your dealership has questions regarding the required service training they should contact the Training help desk at 1.800.748.2687

- Thanks to Art Spong

## Axle Shaft Removal

This information applies to K trucks and utilities, and Hummer H2, between 1996-2005 with the 8.25 and 9.25 axle.

If the left front axle shaft is difficult to remove, follow these steps.

1. Remove the front axle assembly from the vehicle. Refer to published service procedures.
2. Position the front axle assembly straight up and down, with the left stub shaft facing upward.
3. Using a ball peen hammer, tap the left stub shaft flange down and up repeatedly until the stub shaft separates from the axle assembly. This step centers the C-clip in the retaining groove of the stub shaft.

- Thanks to Rusty Sampsel

## No Crank, PRNDL Inoperative

Owners of some 2005 Chevrolet Corvettes and 2004 - 05 Cadillac XLRs may experience a no-crank condition, with no codes in any module. The concern may be followed by an inoperative transmission range indicator (PRNDL). The Tech 2 will show the transmission range circuits are all reading high when any gear is selected.

Check for a loose or broken ground G402 at the right rear suspension cradle. See SI document 1495107.

- Thanks to Paul Radzwilowicz

## Tire Pressure Sensor Learn

This information applies to the 2004 - 05 Cadillac XLR.

SI states that either the J-41760 Magnetic Tool or J-46079 Low Frequency Tool can be used to learn the tire pressure sensor positions. This is true only on 2004 model year vehicles that have not had a sensor replaced recently.

Due to lack of availability of the original tire pressure sensor, it is necessary to service the 2004 XLR with a type of sensor that can be learned only by using J-46079. This tool uses low frequency radio waves to wake up the sensor so its position can be learned to the vehicle. It is recommended that only J-46079 be used to learn XLR tire pressure sensors, because it will work on any sensor on the vehicle.

**TIP:** If any difficulty is encountered using the J-46079, install fresh batteries in the tool before continuing diagnostics.

- Thanks to Paul Radzwilowicz

## Headliner Buzz

Owners of some 2000-05 C/K Utilities may comment that they have a buzz or vibration noise emanating from the headliner in an area that looks like a microphone or speaker.

The round plastic escutcheon grill, about the size of a half dollar and located just above and to the left of the driver, is the interior ambient temperature sensor. The sensor is used in conjunction with the automatic HVAC (CJ2). A

small fan pulls air over the sensor. This sensor may make a buzz or rattle sound, and this noise may be intermittent.

Although it may not be possible to eliminate all of the noise from the sensor, if the sensor is installed incorrectly, it may bind and cause the fan to make a buzz noise. While removing the sensor, check for binding. Reinstall the sensor and re-test. If the noise is still present, the sensor itself may be noisy and require replacement.

- Thanks to Charles Avritt

## Stability System

This information applies to 2005 Cadillac, Chevrolet, and GMC Full Size Utilities with RPO JL4.

Owners may comment on a Stability System Disabled or Service Stability message with DTC C0455. This concern may be caused by bent terminals on the SWPS (Steering Wheel Position Sensor).

Remove the SWPS connector and inspect for bent terminals. In most cases, the terminals can be straightened without having to replace the sensor.

- Thanks to Jim Will

## Power Seat Memory Position

This information applies to 2003 - 05 Chevrolet and GMC C/K trucks and utilities and Hummer H2.

The memory seat may recall to a more-forward position than previously set. This concern may be difficult to duplicate, and the position may change gradually over time.

Do not replace the memory seat module. Engineering has found the cause to be a coding deficiency in the software of the memory seat module. New memory seat module software was released in TIS version 4.5, dated April 18, 2005.

- Thanks to Paul Radzwilowicz

## Propshaft Noise

Some owners of a 2002-05 Chevrolet Trail Blazer EXT 2WD, or GMC Envoy XL 2WD, or 2003-05 Chevrolet SSR may comment on a ping, pop or click noise from underneath the rear of the vehicle. This concern usually occurs when shifting into Reverse, or out of Reverse into Drive.

On **Trailblazers and Envoys** equipped with a 3.42 axle ratio (RPO GU6), or a 3.73 axle ratio (RPO GT4), this condition can be corrected by replacing the original swaged aluminum propshaft with a straight tube propshaft from the GMC Envoy XUV.

- p/n 15113111 for vehicles equipped with the 4.2L L6 (RPO LL8)
- p/n 15113110 for vehicles equipped with the 5.3L V8 (RPO LM4).

The propshafts mentioned above CANNOT be used in Trailblazers and Envoys with the 4.10 axle ratio (RPO GT5). If this concern appears on a vehicle with the 4.10 ratio, use p/n 15163667, which is the same as the original propshaft.

On **Chevrolet SSRs**, a revised propshaft for automatic transmission vehicles p/n 15247556 was released for service, which includes an integral mass damper, mounted on the slip-yoke (transmission end) to improve a driveline whine concern. Manual transmission (6-speed) vehicles use p/n 15209860 which has a larger rear u-joint to fit the 9.5-inch rear axle. These propshafts have also been changed internally to reduce the ping, creak or click noise when the direction of the propshaft is reversed.

- Thanks to Rusty Sampsel

Vehicle	Axle Ratio	Engine	Propshaft p/n
Trailblazer and Envoy	3.42 (RPO GU6) 3.73 (RPO GT4)	4.2L L6 (RPO LL8)	15113111
		5.3L V8 (RPO LM4)	15113110
	4.10 (RPO GT5)	4.2L L6 (RPO LL8)	15163667

Vehicle	Transmission	Propshaft p/n
Chevrolet SSR	automatic	15247556
	manual	15209860



## Car Issues – Fix It Right the First Time

Model Year(s)	Vehicle Line(s) / Condition	Do This	Don't Do This	Reference Information / Bulletin
2001-03	Aztek, Rendezvous - Window Regulators Separate from Window Motors	Use window regulator clips and procedure outlined in bulletin instead of replacing complete window regulator assemblies.	Do not replace window regulator assemblies that are serviceable and only have broken clips.	03-08-64-015
2003-04	CTS - DTC C0450 or C1241 Set, Service Steering System Message On	Replace only VES solenoid.	Don't replace entire steering gear.	03-02-36-001A
2003-04	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
2003-04	Cavalier, Sunfire - Noisy A/C Compressor	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.	03-01-38-012A
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 750 ml (25.4 oz) of Versatrak fluid	Don't replace complete rear drive module.	04-04-20-004
2005	Cobalt/Pursuit (Built Before January 17, 2005) - Fuel Gauge May Not Go Completely to Full	Recalibrate ECM with updated calibration.	Don't replace fuel module, fuel level sensor assembly or fuel gauge.	05-08-49-002A
2002-05	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
2004	Grand Prix - Steering, Suspension or Cradle Click Noise	Install new two-piece sleeve and spacer to steering gear mounts.	Don't replace steering gear or cradle.	03-02-32-048A
2000-03	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 condition.	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	00-05-22-002D



## 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
2002-04	<b>Silverado, Sierra - Poor A/C Performance</b>	<b>Replace accumulator and accumulator bracket.</b>	<b>Don't replace compressor.</b>	<b>02-01-38-007C</b>
2000-03	<b>Tahoe, Suburban, Yukon, Yukon XL - DTC P0446 Set, SES Illuminated</b>	<b>Replace EVAP vent solenoid.</b>	<b>Don't replace EVAP canister.</b>	<b>04-06-04-055</b>
2003-04	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
2003-05	Full Size Pickups and Utilities - Rear Seat Audio and/or Rear HVAC Controls Inoperative	Replace RSA.	Don't replace console.	03-08-44-018B
2004-05	Midsize and Fullsize Pickups and Utilities - CD Issues	Load new software calibration.	Don't exchange or replace radio.	04-08-44-021A
2002-05	Tahoe, Suburban, All Yukons, All Escalades, 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
2001-03	Fullsize Pickups - Injector Replacement for High Flow Rates	Use Corporate Bulletin 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
2004-05	All Cars and Trucks - State-of-Charge Upon Delivery of New Vehicle	Check battery's state-of-charge per revised PDI procedure using Midtronics Conductance Tester	Don't remove and replace battery.	02-06-03-009A
2001-04	Fullsize Pickups and Utilities - Servicing Wide Load Mirrors	Replace individual parts as needed.	Don't replace complete mirror assembly.	03-08-64-028

**Know-How  
Broadcasts  
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10290.08D Emerging Issues

New Model Features

August 11, 2005, 9:30 AM and 12:30 PM Eastern Time

For Web NMF courses, log on to the GM Training Website ([www.gmtraining.com](http://www.gmtraining.com)). Select Service Know-How from the menu, then choose New Model Features for a selection of courses.



– Thanks to Tracy Rozman