TECHlink

GM

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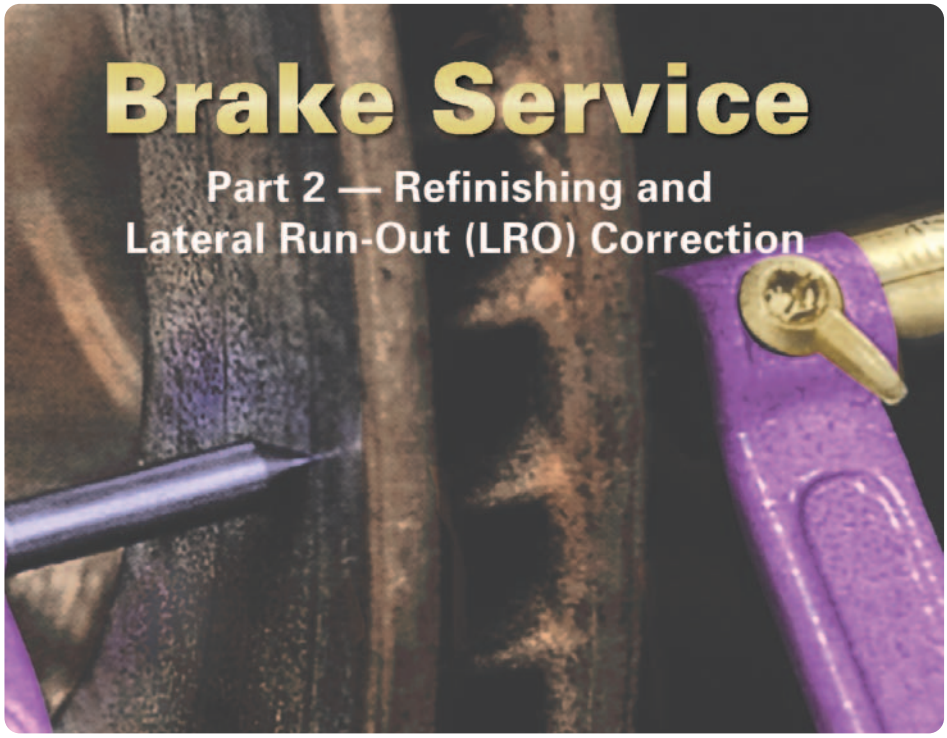

Brake Service

Part 2 — Refinishing and Lateral Run-Out (LRO) Correction

There are five steps which must be performed to complete a successful brake service.

1. Measure and document rotor thickness and thickness variation.
2. Clean hub, rotor and wheel mating surfaces of all rust and debris to shiny surfaces.
3. Perform and document proper rotor refinish using either on-car or off-car lathe following the manufacturer's directions.
4. Measure, document and correct existing lateral run-out (LRO) with Brake-Align correction plates.
5. Document final rotor thickness, reassemble wheel to hub with proper torque, and burnish the refinished rotors to the pads.

The first two steps were covered in Brake Service, Part 1 (TechLink, December 2004). The present article explains the remaining steps: rotor finishing and measuring, correcting LRO, final assembly and documentation.

continued on page 4

Techline News

Power Liftgate Module Programming

Some 2007 full-size utilities are equipped with a power-operated liftgate, which opens and closes with the push of a button. The system is controlled by the Power Liftgate Module (PLGM).

If you need to reprogram an existing PLGM, or program a replacement, you must perform the following procedure to avoid leaving a current B1019 trouble code which cannot be cleared until the PLGM is "learned."

continued on page 2

Battery State of Charge

Many service procedures, including the programming of modules, require the ignition key to be turned on, without the engine running. This means that the vehicle's systems are operating from the vehicle's battery. For example, the new 2007 full-size utilities have up to 24 control modules, which represent a considerable current draw.

To prevent running down the battery below a useable level, take these precautions.

– Be sure the battery is fully charged before beginning the procedure.
– Consider connecting an approved battery charger during the service procedure. The

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Techline News — *from page 1*

After completing the programming event, perform the liftgate calibration procedure with Tech 2:

TIP: To ensure proper calibration of the liftgate, the liftgate assembly must be at room temperature during calibration.

- Close the vehicle liftgate. Failure to do so will result in a failed liftgate calibration.
- Connect the Tech 2 to the vehicle.
- Select Special Functions in the Liftgate Module menu.
- Select LGM Open/Close Test.
- Follow the on-screen instructions.

Midtronics PSC line of chargers has been validated for use during module programming. Two output levels are available — the 30 amp PSC-300 and the 55 amp PSC-550. Refer to the July 2005 issue of TechLink for complete information.

– *Thanks to Mark Stesney*

TIP: When the liftgate is under control of the Tech 2, the liftgate will be driven to the full open position. An audible sound at this point is normal.

Only after following these steps, use your Tech 2 to clear the B1019 code.

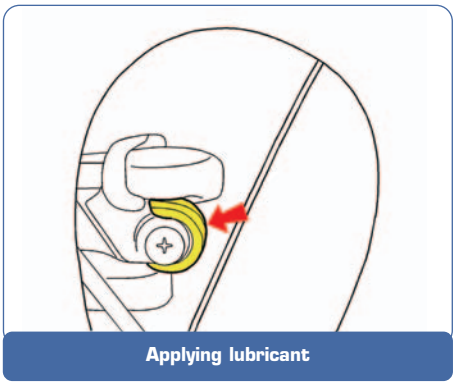
– *Thanks to Devin Koski and Craig Jones*

Door Handle Clicking Noise

Some customers may comment that the outside door handle on their 2005-06 Chevrolet SSR makes a clicking noise when opening.

Remove the door trim following SI document 1347496. Pull back the water deflector to gain access to the lock cylinder. Apply GM Super Lube p/n 12346241 (10953474 in Canada) to the door handle spring.

– *Thanks to Dan Odention*



Applying lubricant

Temperature Readout

Owners of some Torrent and Equinox vehicles may experience difficulty switching between Fahrenheit and Celsius output on the rear view mirror temperature display. The operation is not entirely intuitive. With the first press of the TEMP button, the display turns off, and the customer assumes that's not how to make the change.

Here's how to do it. **Push and hold** the TEMP button for approximately 4 seconds. Once the F or C icon flashes, the display toggles between scales with each button press.

There are three variations of mirror, but they all work the same way.

For the OnStar mirror, it is the left button. It functions as described above.

There are two temperature/compass mirrors (one-button and two-button types) that are used interchangeably under one part number.

Both of these mirrors have the same functionality, as described above.

– *Thanks to Angelo Girolamo*

Did You Know?

Module Programming – The 2006 Cadillac DTS and Buick Lucerne have up to 21 modules that must be reprogrammed or set up with the Tech 2 after replacement.

If you are unsure if a module is programmable, check SI. Use the words "Control Module Reference" to search for a table that will identify the modules in your specific vehicle that require programming or Tech 2 set-up procedures.

Upgraded Passenger Compartment Air Filter – The 2006 Buick Lucerne has a Passenger Compartment Air Filter in the HVAC Module. Lucerne owners may purchase an upgraded Carbon Impregnated Passenger Compartment Air Filter that comes standard in the 2006 Cadillac DTS.

Look in the Parts Catalog under the 2006 Cadillac DTS for the part number.

Valet Key – The Cadillac DTS has a valet key option as standard equipment. This valet key can also be used on the 2006 Buick Lucerne. Owners may buy this key as a Cadillac service part.

– *Thanks to Chris Graham*

GM TechLink

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Manager, Product Readiness:

R. M. (Bob) Savo
GM Service and Parts Operations
Bob.Savo@GM.com

Publisher & Editor:

Mark Stesney
GM Service and Parts Operations
Mark.Stesney@GM.com

Technical Editor:

Jim Horner
Jim_Horner@ADP.com
1-248-816-3641

Production Manager:

Marie Meredith

Desktop Publishing:

Supreme Graphics, Inc.
supremeinc@supremeg.com

FAX number:

1-248-649-5465

Write to:

TechLink
PO Box 500
Troy, MI 48007-0500

GM TechLink on the Web:

GM DealerWorld

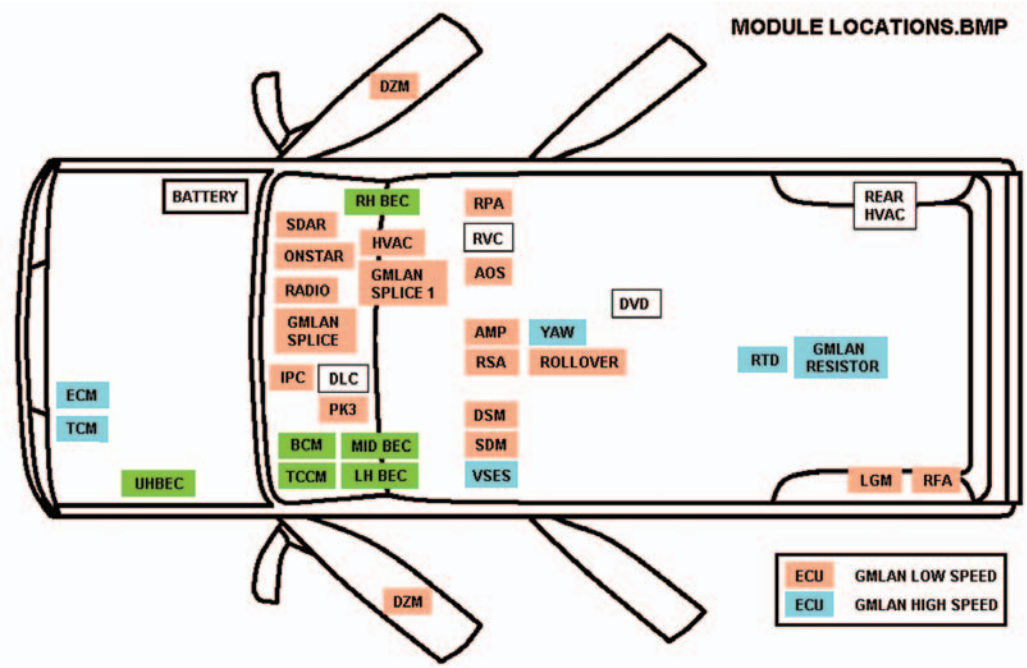
Module Locations

This illustration shows where control modules are located on the new 2007 full-size utilities.

TIP: At present, this illustration does not appear in SI.

Note that the modules on the low speed GMLAN are colored orange, and those on the high speed GMLAN are colored blue.

– *Thanks to Saundra Massengille*



Releasing Liftgate from Inside

The liftgate lock on the Chevrolet HHR is operated electrically, either using the remote key fob or the door lock button. Once unlocked, the liftgate can be opened using the liftgate handle.

Service access plug location

Release lever location

In the case of electrical failure, the lock can be operated manually from inside the vehicle, after a service access plug is removed.

TIP: Do NOT attempt to remove the liftgate trim panel when the liftgate is locked shut.

Use a small flat-bladed tool to remove the plug from the trim panel.

Use a light to locate the bellcrank lever, a small metal arm located below and to the left of the access hole.

Pushing release lever rearward

Use a thin, long (6 in, 150 mm) flat-bladed tool to slowly push the release lever rearward, until the latch releases.

Refer to SI document 1615300 for more details.

– *Thanks to Robert Huber and Tom Sklenar*

Oil Filter Revision

GM Parts introduced the next generation of Duraguard® oil filters in May 2005.

According to customer feedback, the new filter design is harder to install in blind applications. To eliminate installation concerns, a locator plate is being added to the oil filter lid.

Current lid
Concave

New lid
Flat, with locator plate

The new locator plate design (flat surface) allows for easier installation in blind applications with no effect to the filter's performance. A rolling change will begin January 27, 2006, with no part number revisions. The first part numbers to be implemented are the 25011520 (PF53) and 19114118 (PF53F).

– *Thanks to Kevin Larson*

Packaged Part Number	Durapack Part Number
25162815 (PFL1A)	N/A
5575840 (PF2)	12490142 (PF2F)
5579164 (PF13)	12490234 (PF13F)
25011520 (PF53)	19114118 (PF53F)
25313714 (PF60)	12490150 (PF60F)
25162816 (PFL400A)	12490233 (PFL400AF)
25324052 (PF454)	89028862 (PF454F)
25160561 (PF1218)	12490131 (PF1218F)
25014520 (PF1250)	12490232 (PF1250F)

TIP: Refer to bulletin 00-05-22-002F for GM's standard brake service procedures. Another excellent information resource is Service Know-How Course 5040.01B – Brake Pulsation Due to Lateral Runout.

IMPORTANT: These procedures and discussion are highlights of proper brake rotor service and are presented for general information. They are not comprehensive or specific to a certain model/year vehicle and are not intended as such. Always refer to procedures in SI, applicable factory service manuals and applicable Service Bulletins for complete procedures and specifications for the year and model vehicle you are working on.

ROTOR FINISHING

Critical characteristics of a brake rotor include:

- Surface finish
- Parallelism
- Perpendicularity to hub centerline
- Flatness
- LRO

Of these, only LRO and flatness can be measured; the brake lathe must provide the other characteristics.

On-Car vs. Off-Car Lathe

The purpose of machining a rotor is to produce two parallel surfaces with minimum LRO. Both types of lathe will do this, and both methods have considerations.

On-Car

- Portable
- Compensates for LRO
- Cuts captured rotors (TechLink Jan. 2004)
- Non-directional finish
- Requires more training

Off-Car

- Easier to set up
- Stationary location
- Substantial disassembly (or impossible to use) on captured rotor vehicles
- Does not compensate for LRO

TIP: Before machining a rotor on either kind of equipment, the hub and wheel sides of the rotor mounting flange must be cleaned to shiny metal on both sides.

Lathe Use and Inspection

A later article will present much greater detail about the critical care of both types of lathes. But before turning a rotor on any type of lathe, take the following into account.

Lathe Safety

- Lathe's electrical cord, motor, switches, light(s) and belt(s) (as applicable) in good working condition
- Lathe clean and free of debris, rust and chips
- Safety shields, vibration dampers, other attachments clean and in good working order
- Cutting tools sharp and in good condition
- Operator wearing proper personal protection equipment
- Correct any shortcomings before proceeding.

Lathe Inspection

Carefully inspect the bell clamps or adapters you are going to use. Their machined surfaces should be clean, free of rust and grease and not have any nicks or damage present. Any dirt or rust should be cleaned off and any nicks or damage should be removed with a stone. If the damage or rust is significant, the bell clamp or adapter should be verified and/or corrected before use. See TSB 00-05-22-002F or the Brake Pulsation Due to Lateral Runout Service Know-How video and booklet for details.

Inspect the lathe arbor (Off-Car) and lathe arbor shoulder (both On and Off-car) for any nicks, dirt or damage. Clean or repair as necessary as indicated above.

Verify that the adjustment and locking features of the lathe work smoothly and correctly. Verify the cutting head (Off-Car) moves freely in its ways without excessive slop. If necessary, disassemble and remove any chips, dirt or debris which prevent this and perform adjustments as indicated by the lathe manufacturer.

Vehicle/Hoist Inspection (On-Car Only)

Insure that the hoist supporting the vehicle is in good condition and supports the vehicle solidly

Make sure the vehicle's wheel bearings, drive axle and suspension components (as appropriate) are in good condition without excessive play, damage or wear. Repair/replace components as necessary BEFORE attempting to turn a rotor on an On-Car lathe.

TIP: Failure to support a vehicle on a sturdy hoist may result in the On-Car lathe not being able to self compensate itself. If this occurs, move the vehicle to a suitable hoist or secure it fore/aft with jackstands as appropriate.

Rotor Cutting

Once the lathe equipment is verified to be in good operating order, cut the rotor to achieve a good finish according to the lathe manufacturer's instructions.

Always do the math ahead of time, BEFORE beginning to cut. Properly measure the rotor with a brake micrometer to determine what your bottom depth is and how much rotor surface to remove. Remove only as much material as needed to obtain a smooth, even rotor surface. Make the cut in one pass, if it is within the lathe's capability.

TIP: Equal amounts of material do not have to be removed from both sides of the rotor on a floating caliper system.

TIP: On a rotor surface with rust buildup, insure that the cut is deep enough to cut metal. Dragging the tool across rust will dramatically shorten its useful life.

Rotors generally can be turned and should NOT automatically be replaced for:

- Low mileage rust conditions (lot rot)
- Brake pulsation due to rust buildup or thickness variation induced from excessive LRO
- Minor rust accumulation which is flaking off

Refer to Brake Service, Part 1 (TechLink, Dec. 2004) as well as Bulletin 00-05-22-002F for more information.

Final Rotor Finishing and Cleaning

The rotor surface must have a non-directional finish. Follow the lathe manufacturer's recommendation for applying a non-directional finish using moderate pressure. If the lathe is equipped with a non-directional finishing tool, use 120 grit aluminum oxide sandpaper. If the lathe is not equipped with a non-directional finishing tool, use a sanding block and 150 grit aluminum oxide sandpaper.

Rotor Measurement

Minimum thickness specification

Before removing the rotor from the lathe (or on-car lathe from the rotor), be sure the rotor thickness is at or above the Minimum Thickness After Machining

(sometimes called Minimum Machine) thickness specification in SI.

Discard a rotor that is not at or above minimum machine thickness. It cannot safely be placed back on a vehicle.

Remove all machining debris from the rotor surfaces to insure quiet brake operation. Failure to remove all minute metallic machining residue will result in significant brake squeal with some brake pad compounds.

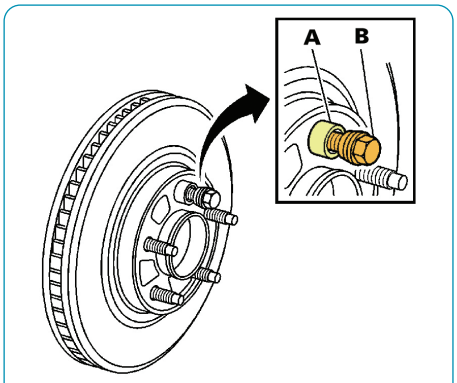
The best method is thorough scrubbing with hot, soapy water. If you use an environmentally friendly hot tank washer, use brake cleaning spray to remove residual oil from the rotor surfaces.

MEASURING AND CORRECTING LATERAL RUN-OUT

TIP: Before installing the rotor to the hub, be sure there is no debris on the rotor or hub mating surfaces.

TIP: When installing a rotor on a hub, hold the rotor at the 5 o'clock and 8 o'clock positions to avoid dropping any residue from inside the rotor cooling vanes into the hub/rotor interface area.

Hold the rotor flat to the hub. Install J 45101-100 conical washers (A) and lug nuts (B) and finger tighten. Torque the lug nuts to SI specifications using a star pattern.



A Conical washer B Lug nut

TIP: Conical washers simulate the clamping load of the wheel on the rotor/hub interface to make an accurate LRO measurement.

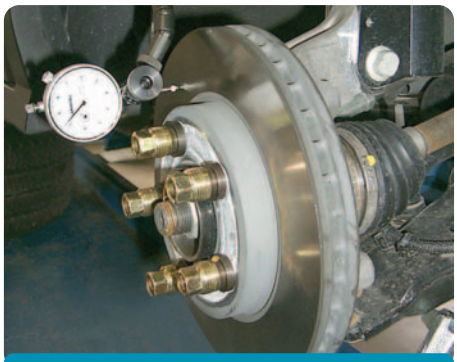
TIP: Print the brake specifications from SI as handy reference during the repair. Attach it to the repair order as a permanent part of the vehicle history file to substantiate the specifications you were working with.

LATERAL RUNOUT (LRO) CORRECTION

IMPORTANT: Over time, excessive LRO causes thickness variation which causes brake pulsation. See the December 2004 TechLink as well as 00-05-22-002F.

This procedure involves placing a machined, tapered correction plate between the rotor and hub.

Install a dial indicator J 45101 (or equivalent) to the steering knuckle and position the indicator button so it contacts the brake rotor friction surface at a 90° angle, approximately 0.5 inch (13 mm) from the outer edge of the rotor.



Dial indicator in position

With the dial indicator installed, rotate the rotor until the lowest reading is displayed on the indicator dial and set the dial to zero. Rotate the rotor until the highest reading is displayed on the dial. Mark the location of the high spot relative to the nearest wheel stud, or studs. Mark the studs and rotor to allow you to reinstall the rotor to the hub in the same index location. Record the amount of measured LRO on the repair order for the corner of the vehicle you are working on.

Marking location of high spot on stud

Refer to LRO measurement procedures in SI. On most passenger cars, if LRO is greater than 0.002 inch (0.055 mm), correction is required. P-90/N-car specification is 0.0015 inch (0.038 mm). Always consult SI for the specifications for the model/year vehicle your are working on.

Select and document the appropriate correction plate. Use the Brake-Align application chart supplied with the plates. Brake-Align plates are numbered XXX-XX, where the first three numbers represent the type of hub they fit and the last two numbers represent the correction value in thousandths of an inch (03 gives 0.003-inch correction, 06 gives 0.006-inch correction and 09 gives 0.009-inch correction). Brake-Align plates come in only these three thicknesses. Select the appropriate correction plate as indicated below.

You are trying to get the total LRO as close to zero as possible. Because you are compensating a rotating device, it doesn't matter if the values go positive or negative.

EXAMPLE: If the runout is 0.005-inch, the 0.006-inch plate would give you -0.001-inch LRO after installation. The 0.003-inch plate would bring you to +0.002-inch (which might be within spec) but the 0.006-inch plate minimizes the total LRO and gives a better repair.

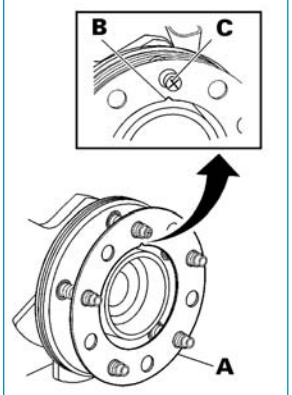
With the rotor removed, install the plate (A) on the hub with the V-notch (B) at the high point previously marked (C).

A Plate

B V-notch

C High point mark

TIP: Brake-Align plates have a double wheel lug pattern of mounting holes to allow positioning the V-notch at a lug location or in between lugs, depending on the location of the high spot mark.



Installing correction plate

Install the rotor, observing the index marks you made earlier.

Hold the rotor flat to the hub, add a conical washer and finger-tighten the first lug nut. Repeat with the other lug nuts. Tighten to the specified torque, in a star pattern.

Confirm that LRO is within specification using the measurement procedure above.

Measure the final rotor thickness for that rotor in that position on that vehicle and record on the repair order.

Install the caliper and pads. Pad inspection and replacement guidelines were covered in part 1 and bulletin 00-05-22-002F.

Remove the lug nuts and conical washers; re-install the wheels, using the recommended lug torque and procedure.

Depress the brake pedal several times to take up changes in component clearance due to rotor refinishing and to secure the rotor in place.

Verify and adjust the brake fluid level in the master cylinder reservoir.

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Brake-Align Tips

Brake-Align plates save you time. Using them is an approved repair procedure and they should be used to correct brake rotor LRO when it exceeds the specification. Brake-Align plates, properly used, give you repeatable, exact LRO correction results quickly.

TIP: The LRO Indexing Correction procedure in SI is valid to correct minor LRO variation. But you may need to bolt and un-bolt the rotor from the hub 4 or 5 times to get the lowest LRO measurement, which still may or may not be within the vehicle's maximum LRO specification.

The most commonly used plates are the 0.003-inch and 0.006-inch. If rotor LRO measurements indicate the need for a 0.009-inch plate, determine EXACTLY where that LRO is coming from. First, remove the marked/indexed rotor from the hub and check the hub lateral surface for LRO with a dial indicator in the same method as above for checking the rotor. Place the indicator tip just outboard of the lug circle. Generally, most hub outer edges are approximately half the distance from the centerline of the axle to the area you were checking on the rotor. Using some geometry, it would be logical to expect this value to be approximately half of what you were seeing at the rotor, if 100% of the runout is in the hub.

Example: You measured 0.011-inch LRO on the rotor. You disassembled the rotor from the hub and measured the outer edge of the hub and found 0.001-inch LRO. This would indicate that approximately 0.002-inch of your 0.011-inch total LRO is due to hub LRO.The rest is LRO in the rotor itself. If you have just cut that rotor, you need to take a very close look at your cleaning process and your lathe equipment.

TIP: Never re-use a Brake-Align correction plate. Never stack more than one Brake-Align correction plate on an individual hub.

FINAL DOCUMENTATION

At this point you should have performed the following measurements and recorded them on the repair order (or diagnostic worksheet as appropriate):

- Initial rotor thickness
- Rotor thickness variation measured in at least four equal places around the circumference of the rotor (if customer concern was brake pulsation)
- Final rotor thickness after machining (if rotor was turned)
- Assembled rotor lateral runout measured and recorded in thousandths of an inch so it can be coded for warranty purposes
- Brake-Align correction plate used (XXX-XX format)
- Final rotor thickness installed on the vehicle in its final position (left/right/front/rear)

BURNISHING PADS AND ROTORS

CAUTION: Road test a vehicle under safe conditions and while obeying all traffic laws. Do not attempt any maneuvers that could jeopardize vehicle control. Failure to adhere to these precautions could lead to serious personal injury and vehicle damage.

Burnishing the brake pads and brake rotors is necessary to ensure that the braking surfaces are properly prepared after disc brake system service.

Perform this procedure whenever the disc brake rotors have been refinished or replaced, and/or whenever the disc brake pads have been replaced.

Select a smooth road with little or no traffic. Accelerate the vehicle to 48 km/h (30 mph).

Use care to avoid overheating the brakes while performing this step.

Using moderate to firm pressure, apply the brakes to bring the vehicle to a stop. Do not allow the brakes to lock. Repeat until approximately 20 stops have been completed. Allow sufficient cooling periods between stops to properly burnish the brake pads and rotors.

– *Thanks to North Central Region Service Engineers and Field Warranty Specialists*

Vehicle Leads/Pulls and Road Slope

When you're diagnosing a vehicle that leads or pulls, have you considered the effect of road slope? Road slope is a major contributor to vehicle lead/pull complaints.

As a part of normal operation, vehicles will follow side-to-side road slope or road crown. So, first check with the customer about the types of roads they are driving on. Some drivers do not recognize the influence of road slope on vehicle pull/lead.

Roads typically have some degree of crown or slope to allow for rain run-off. Vehicles are designed to compensate for a slight amount of road crown, but evaluating a vehicle on the wrong roads can lead to improper diagnosis.

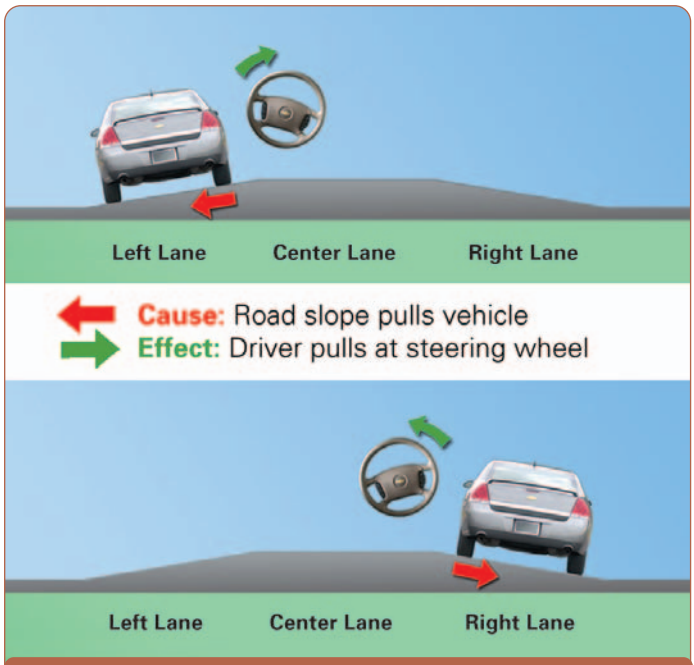
For example, if you are testing the vehicle for a "leads to the left" concern, you will want to evaluate the concern in the left lane as well as in the other lanes. If the vehicle quickly climbs the road crown, then it may have an issue that needs to be looked into further.

So, be sure to understand the customer's operating environment and whether or not road slope is causing the customer's concern.

TIP: Do your test drive on actual roads, not in a parking lot, to give you a real world impression of the vehicle's behavior in right and left sloping lanes.

For further assistance please reference the leads/pulls diagnosis document in SI.

– *Thanks to Brian Snyder and Dan Stress*



Be aware of road slope while road testing (exaggerated here)

Poor Radio Reception

This information applies to 2001-02 full-size trucks and utilities (both old and new body styles).

Some customers may experience poor radio reception. This concern may be related to a loose radio antenna mast.

Since April, 2001, an orange or black plastic wrench has been attached to the antenna mast. This tool is provided to properly attach the mast to the antenna base during new vehicle prep. It is then to be placed in the glove box for the owner's use later.

TIP: The wrench is made of plastic to avoid damage to the finish on the antenna mast.

TIP: Replacement wrenches are available only with new antenna mast assemblies.

– *Thanks to Paul Radzwilowicz*

Electric Trailer Brake Controller Wiring

Owners of the 2007 Cadillac Escalade, Chevrolet Tahoe and GMC Yukon may have questions about how to connect an electric trailer brake controller, or where the brake controller pigtail harness is located.

Starting with the all-new 2007 full-size utilities, there is no longer an electric trailer brake controller pigtail harness. The trailer brake controller wiring is now part of the I/P wiring harness, and the four blunt cut wires are located under the left IP.

Wire Color	Circuit Number	Description	SI Document Number
Red/Black	242	12 V Power Supply (30A Stud 1)	1706194
Dark Blue	47	Trailer Brake Output Voltage	Not Shown
White	22	Ground	1706250
Light Blue/White	6311	Stop Light Input	1706473

TIP: The red/black circuit 242 must be connected to Stud 1 (30 amp) of the UBEC. The wire is located between the left fender and the UBEC. Do not confuse this circuit with 742 (document 1706194) which is also red/black, and which is taped to the harness under the master cylinder. Circuit 742 is the 12 V supply to the 7-way trailer connector.

– *Thanks to Jim Will*

Vehicle Speed Readout on Tech 2

This information applies to the 2006 Cadillac STS-V and XLR-V, and Chevrolet Corvette equipped with 6L80 (RPO-MYC).

When using a Tech 2 to monitor transmission data, the vehicle speed reading may be higher than the actual speedometer reading. If this condition is found, typically the higher the actual vehicle speed, the higher the Tech 2 reading and the greater the error.

This does not cause any driveablility issues and no repair attempts should be made.

The issue is being investigated in an attempt to correct the Tech 2 vehicle speed reading in a future calibration release.

– *Thanks to Rusty Sampsel*

Cruise Control Inoperative

This information applies to the following vehicles when equipped with manual transmission: 2004-2006 Cadillac CTS-V, Chevrolet Cobalt, Corvette, Silverado and SSR, Pontiac GTO, GMC Sierra, 2006 Pontiac Pursuit and Solstice, and Saturn Ion.

The customer may comment that the cruise control inoperative and/or MIL on, and a DTC P0833 is stored. The condition may not be able to be duplicated by the dealer yet the customer may have a repeat concern.

Check the clutch pedal top of travel (CCP) switch for adjustment on vehicles where the switch is adjustable. Also check for possible intermittent connections in the clutch switch circuit.

In some applications, during circuit testing of the clutch switch (CCP), the Tech 2 may read APPLIED/RELEASE if toggled several times, then stops toggling and remains in either the APPLIED or RELEASED state. If the switch is checked with a DVOM, the switch will toggle from open to closed.

TIP: Using a DVOM to check clutch and cruise switches is recommended instead of monitoring Tech 2 data.

If no circuit concerns are found, this code can be induced by certain driving habits. This code can set (and the cruise control will be disabled) if the driver rests their foot on the clutch continuously. If the pedal is not permitted to reach the top switch, it will keep the ECM from seeing transitions while the vehicle is driven above and then below the vehicle speeds listed for setting the DTC. This can cause a false P0833 to set.

EXAMPLE: Driving in slow moving stop-and-go traffic, such as a construction zone or heavy traffic.

Make the customer aware of this scenario and advise them to refrain from resting their foot on the clutch pedal in these situations, to avoid disabling the cruise control and/or setting DTC P0833.

– *Thanks to Rusty Sampsel*

Rear Axle Pinion Seal Leak

2003-06 Cadillac CTS
2004-06 Cadillac SRX
2005-06 Cadillac STS
2006 Pontiac Solstice

The rear axle pinion seal may exhibit a fluid leak condition. During seal replacement, the new seal may still leak as work on the vehicle is being completed. It is possible that when replacing the seal, the rear axle lube is seeping through the pinion bearings. The lube then gets past the rubber seal and gets trapped behind the metal dust shield before the pinion yoke is installed. When the dealer installs the pinion yoke, the trapped fluid is squeezed out and gives the illusion of a continued leak.

TIP: Inspect the new seal for the presence of the internal garter spring and make sure it is there. If not, use a seal that does have it.

Inspect the new seal for metal contamination in the grease used to lube the seal lip. If there is any contamination, discard the seal and use only a debris-free seal that is supplied with grease.

When replacing the pinion seal, first drain the rear axle fluid. This also helps remove metal contaminants that may be present and may have caused the initial leak condition. Next, remove the leaking seal. Install the new seal and yoke. Last, refill the rear axle. This should prevent the lube from being trapped behind the dust shield.

– *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
2005	**Chevrolet Corvette w/Navigation Radio – FM Radio Static or No Reception**	**Have customer test radio when condition occurs by switching from FM to AM and back to FM. If this clears signal, no repairs required.**	**Don't replace radio and/or antenna module.**	**05-08-44-014A**
2005	**Cobalt, Pursuit (Canada Only) – CD Inoperative or Radio Displays "Locked"**	**Reprogram U1C radio for "locked" message on control head.**	**Don't replace radio assembly.**	**05-08-44-010B**
2005-2006	**G6 w/Panoramic Sunroof – Potential Noise Issues**	**Refer to bulletin.**	**Refer to bulletin.**	**05-08-67-014**
2005	**Corvette – Erratic Fuel Gauge**	**Use new software release to add buffer to fuel sender system.**	**Don't replace fuel sender, fuel module or fuel tank.**	**05-08-49-027**
2005	Cobalt, Pursuit (Canada Only), ION, HHR – Transmission Control Module (TCM) Shorted to Battery Voltage During Diagnosis and/or Service	Remove TCM harness from TCM prior to removing it from TCM holding bracket.	Don't remove TCM from bracket without first disconnecting TCM wiring harness. Don't allow TCM to contact positive battery post.	05-07-30-016A
2005	VUE, Equinox LT/LS – Sunroof will not Close from Vent, Partly Opened, or Fully Opened Position	Replace sunroof control module.	Don't replace sunroof module, motor or switch.	05-08-67-010A
2005-2006	Uplander, Terraza, Relay, Montana SV6 – High Effort to Sound Horn, Horn Only Sounds When Certain Spots are Pressed	Replace horn pad springs.	Don't replace inflatable restraint steering wheel module.	05-08-54-001
2005	Grand Prix, LaCrosse/Allure – Front Brake Moan and/or Groan Noise During Brake Apply	Confirm that noise is coming from front brakes – then replace the front brake pads.	Don't resurface front rotors.	05-05-23-006
2004-2005	Grand Prix (June built 2004, all 2005), LaCrosse/ Allure (all 05) – Blower Motor Inoperative or Intermittent, Blower Speed May Drop or Blower Continues to Run After Key Off	Install 330MFD capacitor between LPM circuit to ground.	Don't replace LPM, blower motor or HVAC control head.	05-01-39-001A
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
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
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

Truck Issues – Fix It Right the First Time

Model Year(s)	Vehicle Line(s) / Condition	Do This	Don't Do This	Reference Information / Bulletin
2002	TrailBlazers, Envoys, Bravada – Essential Tool for HVAC Mode Door Actuator Replacement	Use GE-47676 to replace HVAC mode door actuator.	Don't replace cam assembly.	05-01-38-001A
2003-2005	SSR – Door Will Not Open From Inside Door Handle	Replace door handle hinge support.	Don't replace door panel.	05-08-64-026
2004-2005	Colorado/Canyon – Side Door Window Glass Clips Fall Off	Replace door window glass.	Don't re-attach door window glass clips.	04-08-64-022
2001-2005	Chevrolet/GMC 36 Series Cab/Chassis – DTC P1172 or P2636, Fuel Gauge Reads Empty, SES Light On	Modify fuel tank balance line.	Don't replace fuel tank unit, PCM or fuel transfer pump	05-06-04-008
2004-2005	All Cars and Trucks – State-of-Charge Upon Delivery of a New Vehicle	Check battery's state-of-charge using J-42000 or J-42000-EU.	Don't remove and replace battery.	02-06-03-009A
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 gasket.	Don't measure intake manifold across all four intake runner ports. Don't replace upper intake manifold gasket with orange gasket.	05-06-04-029
2001-2003	Fullsize Pickups – Injector Replacement for High Flow Rates	Use 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

Know-How Broadcasts for April

10206.04D Emerging Issues	April 13, 2006	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/TechAssists from the menu, then choose New Model Features for a selection of courses.	

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– Thanks to Tracy Rozman