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PE10-005

GM

4/14/2010

ATTACHMENT

Q 07

04-03-08-006D Steering and Front Suspension Noise Concerns

Document ID: 2239750

#04-03-08-006D: Steering and Front Suspension Noise Concerns - Clunk, Thump, Rattle, Knocking, Pop, Shudder, Vibration (Diagnosis and Perform Necessary Repairs) - (Feb 24, 2009)

Subject: **Steering and Front Suspension Noise Concerns -- Clunk, Thump, Rattle, Knocking, Pop, Shudder, Vibration (Diagnosis and Perform Necessary Repair)**

Models: **2005-2009 Chevrolet Cobalt (Including SS)**
2006-2009 Chevrolet HHR (Including SS)
2005-2006 Pontiac Pursuit (Canada Only)
2007-2009 Pontiac G5
2003-2007 Saturn ION

This bulletin is being revised to add Condition #3. Please discard Corporate Bulletin Number 04-03-08-006C (Section 03 - Suspension).

This bulletin provides information on seven different steering/front suspension noise conditions.

Condition #1

Some customers may comment on a rattle or knocking noise that is heard in the front of the vehicle while driving at low speeds 8-24 km/h (5-15 mph). This condition may be more noticeable while making a slow turn or on a loose/rough surface.

This condition can be duplicated by the technician using the following procedure:

1. On a rough or loose surface (i.e., gravel parking lot), make a sweeping turn (either direction) at 8-24 km/h (5-15 mph to load the steering column, I-shaft and steering rack/gear mechanisms. The testing on a rough or loose surface will allow the wheels to oscillate slightly and will make the rattle/knocking noise more evident and repeatable.
2. Release the steering wheel while making the turn to take load off of steering components. This should initiate the rattle/shudder noise, which is generated by backlash in the steering assembly as it is in a no-load float condition.

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3. Remove the 60 amp EPS fuse (1) in the underhood fuse block.
4. Test the vehicle as in Step 1. Since the EPS motor is no longer powered, only the I-shaft and steering gear/rack will be loaded as you make the turn. If you hear the rattle/knocking noise during the turn, then the noise is being generated by the backlash within the steering column (assist motor gear mechanism).
5. Replace the 60 amp EPS fuse and repeat Steps 1 and 2 to verify that the rattle/knocking noise disappears when turning (loading steering mechanism) and can only be heard when releasing the steering wheel.

Correction #1

If the steering column is identified as the source of the rattle/knocking noise in the above test, replace the steering column.

Important: The noise in the steering column is generated from the metal to plastic gear backlash of the assist motor mechanism and will have a different sound than that from the steering gear. If the customer comments that they still hear a noise, it may be a different sound from either the I-shaft or the steering rack.

If the steering column is not identified as the source of the rattle/knocking in the above test, continue to diagnose the vehicle according to the diagnostics in SI.

Parts Information #1

For part numbers and usage of the column, see Steering Column Kit in Group 06.518 of the appropriate Parts Catalog. Saturn Retailers should refer to the appropriate model year Parts & Illustration Catalog for the vehicle.

Warranty Information #1

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
E7680	Column Assembly, Steering - Replace	Use Published Labor Operation Time

Condition #2 (Chevrolet Cobalt, HHR and Pontiac G5 Only)

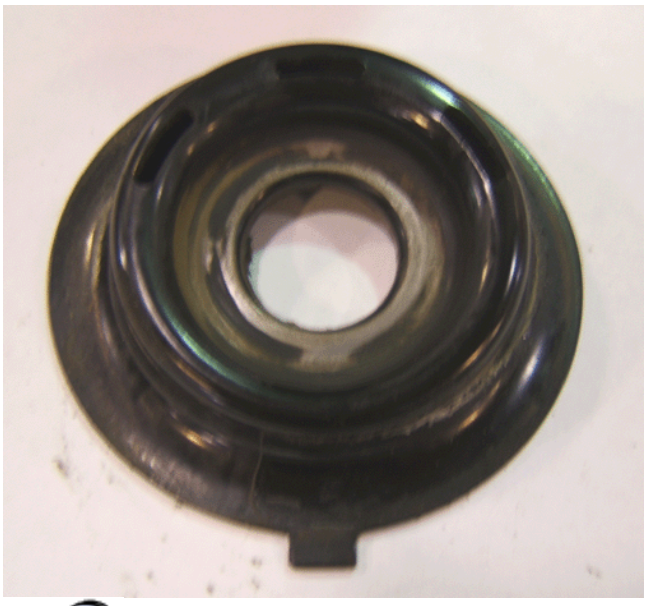
Some customers may comment on a clunk or thump noise coming from the front suspension while driving over rough road surfaces. This noise will typically occur when the front suspension is returning to the upward position after a hard downward stroke, such as after driving through a large rut or pothole.

Cause #2

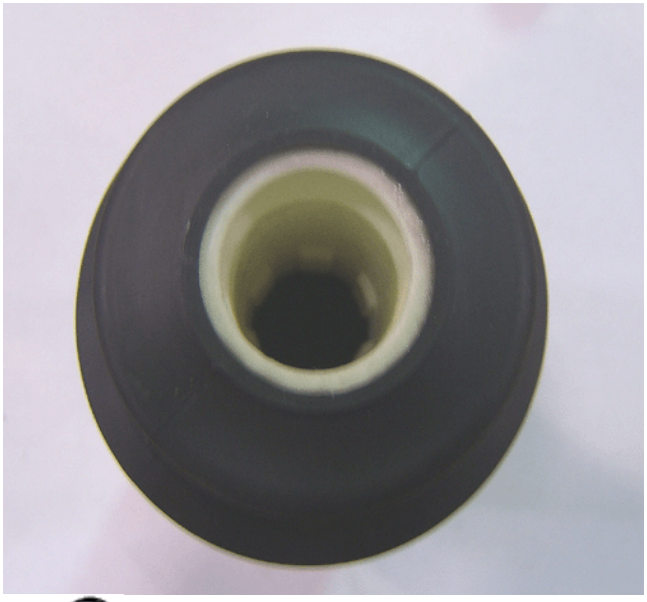
This condition may be caused by the jounce bumper slamming into the upper spring seat because it is not retained in the correct up position. The jounce bumper loses position due to oil being deposited onto its retention fingers. The oil is from the strut leaking.

Correction #2

Inspect the front strut(s) for evidence of oil. The leak may be slight but will still cause the concern. If oil is present, replace the affected strut, jounce bumper and dust boot (shield). Before reassembling the strut assembly, glue the new jounce bumper and new dust boot (shield) to the upper spring seat using the steps listed below. To further confirm this concern, the shield/bumper will easily slide up and down the strut shaft.



1. Clean the surface area of the upper spring seat using fine sandpaper.
2. Apply a light coat *of 3M™ Automotive Adhesion Promoter, P/N 06396, to the top of the dust boot (shield) on the inside edge and to the top of the bumper. Allow to dry 10 minutes.



3. Glue the bumper to the inside of the dust boot (shield) as shown. Use *3M™ Duramix™ Super Fast Adhesive, P/N 04747. Allow to cure thoroughly 5-10 minutes at room temperature.
4. Apply a light coat of *3M™ Automotive Adhesion Promoter, P/N 06396, to the top of the dust boot (shield) and to the upper spring seat surface. Allow to dry 10 minutes.

5. Glue the dust boot (shield) to the upper spring seat as shown using the above recommended adhesive. Allow to cure thoroughly.

*We believe this source and their products to be reliable. There may be additional manufacturers of such products. General Motors does not endorse, indicate any preference for or assume any responsibility for the products from this firm or for any such items which may be available from other sources.

Parts Information #2

Part Number	Description	Qty	Material Allowance
21992520	Shield, Frt Suspension Strut	-	-
22712118	Bumper, Frt Suspension Strut	-	-
04747	3M™ Duramix™ Super Fast Adhesive	1	$22.00
06396	3M™ Automotive Adhesion Promoter	2	$4.00

For part numbers and usage of the strut, see Strut Kit in Group 07.345 of the appropriate Parts Catalog.

Warranty Information #2

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
E9478*	Replace Front Strut and Secure Bumper and Shield to Spring Seat	1.5 hrs
Add	To Perform Repair on Other Side	1.3 hrs
Add	For alignment times, refer to operation E2020 and add the applicable times to the regular hours.	
* This is a unique labor operation for bulletin use only. The number will not be published in the Labor Time Guide.		

Condition #3

Some customers may comment on a clunk/pop type noise coming from the front of the vehicle when driving over rough road surfaces.

Cause #3

This noise may be caused by the stabilizer shaft link ball stud becoming contaminated from moisture.

Correction #3

Inspect the front stabilizer shaft links for damage. To isolate the noise, the link can be also be disconnected from the stabilizer shaft. If the link appears damaged or if the noise goes away when disconnected, replace the link with the revised part.

Parts Information #3

Part Number	Description	Usage	Qty
		2006-2009 HHR (FE1,	

20784686	Link Asm., Front Stabilizer Shaft (300 mm Shaft)	FE3) 2005-2009 Cobalt (FE1, FE3) 2005-2006 Pursuit (FE1, FE3) 2007-2009 G5 (FE1, FE3) 2003-2007 ION (FE1, FE2, FE3)	2
20784687	Link Asm., Front Stabilizer Shaft (250 mm Shaft w/Washer)	2008-2009 HHR (FE5) 2005-2009 Cobalt (FE5) 2007-2009 G5 (FE5)	2
20784688	Link Asm., Front Stabilizer Shaft (250 mm Shaft)	2006-2009 HHR (FE1, FE3) 2005-2009 Cobalt (FE5) 2005-2006 Pursuit (FE5) 2007-2009 G5 (FE5)	2

Warranty Information #3

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
E2147	Stabilizer Shaft Link Replacement (Both Sides)	Use Published Labor Operation Time

Condition #4

Some customers may comment on a clunk type noise coming from the front of the vehicle during a turning maneuver. This condition can also be felt through the steering wheel when the vehicle is stationary and the wheel is rotated from steering stop to steering stop. Typically, the clunk noise will be heard once for every 90° of steering wheel rotation in either direction. This clunk noise may also be noticed during low speed acceleration or deceleration, typically in light turns of the steering wheel.

The following are characteristics of this noise:

- This noise is very random.
- This noise is independent of the steering wheel angle and independent of the bumpiness of

the road.

- This noise is a low frequency dull one and can be felt in your feet.
- This noise can normally be heard from the driver seat.
- This noise can be felt upon touching the steering gear from outside of the vehicle.

Note: You might also notice a slight scrub-type noise when turning the wheel back and forth. This type of noise is considered normal and repairs will not eliminate it.

Cause #4

This condition may be caused by inadequate lubrication of the steering intermediate shaft.

Correction #4

Important: DO NOT replace the steering gear or steering column assembly.

Replace the intermediate shaft.

Important: If the vehicle has already had a steering intermediate shaft replaced for a similar noise concern that the dealer duplicated, determine from the customer if the noise went away for a period of time and came back, or if the service shaft made no change. If the noise was gone for a period of time and came back, have the dealer replace the shaft again to verify we do not have a defective service shaft.

If this does not eliminate the noise, continue to diagnose the vehicle according to the diagnostics in SI.

Parts Information #4

Part Number	Description
15800140	Shaft, Intermediate Steering (Cobalt/G5/Pursuit)
15799676	Shaft, Intermediate Steering (ION)
22730246	Shaft, Intermediate Steering (HHR)

Warranty Information #4

For vehicles repaired under warranty, use:

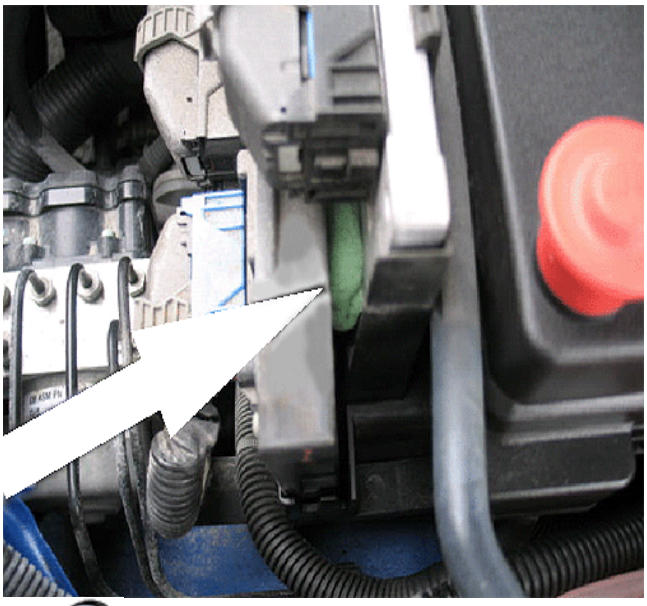
Labor Operation	Description	Labor Time
E7700	Shaft, Steering Intermediate - Replace	Use Published Labor Operation Time

Condition #5

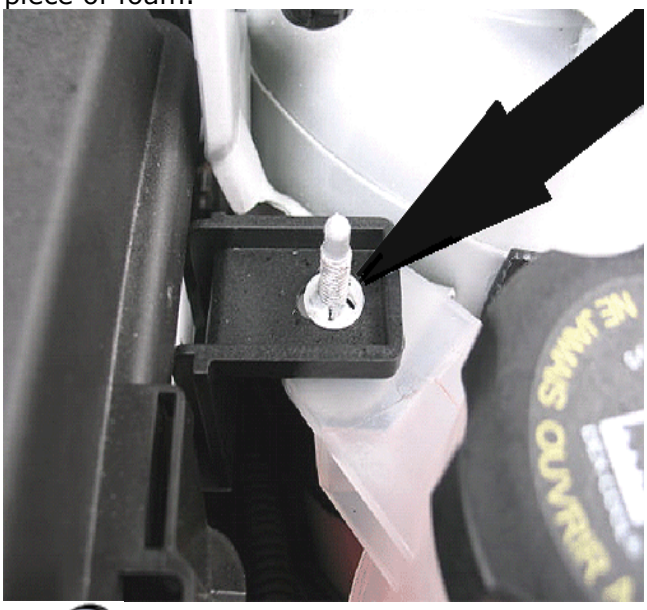
Some customers may comment on a rattle/clunk type noise coming from the steering column when driving over bumps.

Correction #5

The following steps have been found to be very effective in removing this condition.



1. Check for the possibility of the PCM and the TCM rattling/clunking together. If there is contact between these two modules, insulate the modules from each other using a small piece of foam.



2. Check that the retaining clip on the engine coolant surge tank is fully seated. If not, push down to seat.

Rattles/clunks in this area of the engine compartment may be heard as coming from the steering column while driving.

If this does not eliminate the noise, continue to diagnose the vehicle according to the diagnostics in SI.

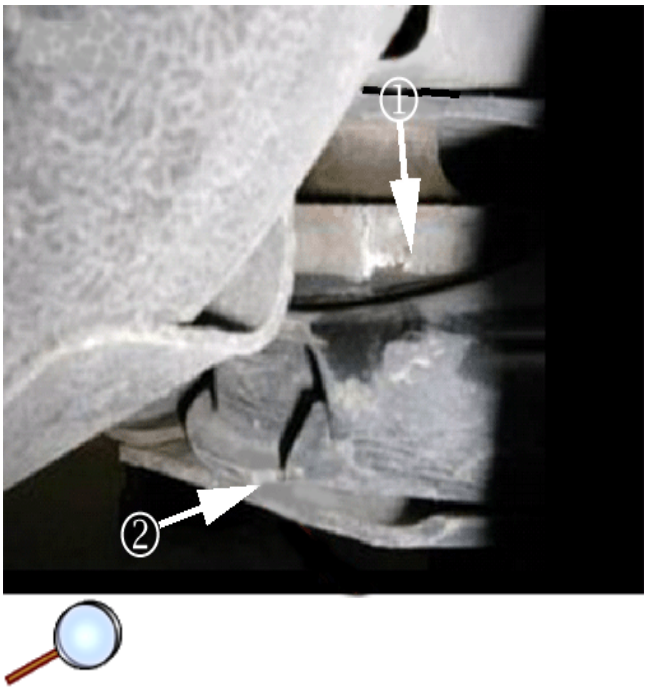
Warranty Information #5

Labor Operation	Description	Labor Time
E9458*	Repair to Correct Rattle/Clunk Noise in Front of Vehicle	0.2 hr
* This is a unique labor operation number for bulletin use only. The number will not be published in the Labor Time Guide.		

Condition #6 (FE1 Suspension Only)

Some customers may comment on a clunk, thump or rattle noise coming from the front suspension while driving over rough road conditions or when braking.

Cause #6



This condition may be caused by the lower control arm rubber bushing (rear) coming out of its steel sleeve (1). This will cause the lower control arm to make hard contact (2) with the body structure. This condition may be more prevalent in regions that use road salt during the winter months.

Correction #6

If the rubber bushing has moved out of the steel sleeve, replace the lower control arm bushing. Do not replace the bushing if it is still centered in the steel sleeve.

If this does not eliminate the noise, continue to diagnose using chassis ears to identify the source

of the noise.

Parts Information #6

Part Number	Description
25984679	Bushing, Front Lower Control Arm (Cobalt/G5/HHR/Pursuit)
22688205	Bushing, Front Lower Control Arm (ION)

Warranty Information #6

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
E3550	Bushings ad/or Shaft, Front Control Arm Lower (Right) - Replace	Use Published Labor Operation Time
E3551	Bushings ad/or Shaft, Front Control Arm Lower (Left) - Replace	
E3557	Bushings ad/or Shaft, Front Control Arm Lower (Both) - Replace	

Condition #7 (Saturn ION Only)

Some customers may comment on a squeak, rattle, pop, or clunk noise coming from the front of the vehicle during suspension movement.

Cause #7

This condition may be caused by the interface between the front stabilizer shaft, the front stabilizer shaft insulators (bushings) and the front stabilizer shaft mounting clamp.

Correction #7

Replace the front stabilizer shaft insulators (bushings), if necessary, using the following procedure.

1. Verify the customer comment. Use Chassis Ear (SA9217NE or J39570) or a similar tool to determine the source of the noise. Refer to Noise Diagnosis - Front Suspension in SI.
2. If the noise is coming from either the front stabilizer shaft insulators (bushings) or the clamps:

   Important: Check the Service Parts Identification label in the rear compartment (trunk) to determine the vehicle's suspension system type, then obtain the correct insulators (bushings) corresponding to that suspension system type.

   - On vehicles built *after* VIN breakpoint 4Z[redacted], replace both front stabilizer shaft insulators (bushings). Refer to the Stabilizer Shaft Insulator Replacement procedure in SI.
   - On vehicles built *up to and including* VIN 4Z[redacted] replace the front stabilizer shaft

insulators (bushings) *and* clamps. Refer to the Stabilizer Shaft Insulator Replacement procedure in SI.

3. Verify the repair by repeating Step 1.

Parts Information #7

Part Number	Description	Qty
15820162	Insulator, Front Stabilizer Shaft (2007 FE1 Suspension)	2
15820163	Insulator, Front Stabilizer Shaft (2007 FE2 Suspension)	2
15820164	Insulator, Front Stabilizer Shaft (2003-2007 FE3 Suspension)	2
22722387	Clamp, Front Stabilizer Shaft	2

Warranty Information #7

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
E2180	Insulator and/or Bracket, Front Stabilizer Shaft - Replace	Use Published Labor Operation Time

Condition #8

Some customers may comment on a whine/hum noise from the steering column while making right hand turns at 5-15 mph (8-24 km/h). A slight whine/hum noise is considered to be normal for EPS so it will be helpful to compare to another like vehicle. If the vehicle exhibits excessive feedback/noise when compared to another vehicle, follow the correction procedure below.

Correction #8

Important: DO NOT replace the steering column.

Pull the 60 amp steering fuse (1) in the underhood fuse block. If this eliminates the whine/hum concern, contact the Technical Assistance Center for further information in order to repair the vehicle. If this does not eliminate the noise, continue to diagnose the vehicle according to the diagnostics in SI.

GM bulletins are intended for use by professional technicians, NOT a "do-it-yourselfer". They are written to inform these 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 your GM dealer for information on whether your vehicle may benefit from the information.

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ATTACHMENT

Q 07

05-02-32-002D Power Steering Inoperative

Document ID: 2285103

#05-02-32-002D: Power Steering Inoperative/Steering Wheel Hard to Turn, PWR STR Message Displayed on DIC After Jump Starting Vehicle (Replace Fuse and Instruct Owner How to Jump Start Vehicle) - (May 29, 2009)

Subject: **Power Steering Inoperative/Steering Wheel Hard to Turn, "PWR STR" Message Displayed on Driver Information Center (DIC) After Jump Starting Vehicle (Replace Fuse and Instruct Owner How to Jump Start Vehicle)**

Models: **2006-2009 Chevrolet HHR**

2003-2007 Saturn ION

This bulletin is being revised to update the model years. Please discard Corporate Bulletin Number 05-02-32-002C (Section 02 -- Steering.)

Condition

Some customers may comment that the steering wheel is hard to turn and that a message of "PWR STR" is displayed on the Driver Information Center (DIC) of the instrument panel (I/P) cluster. They may also comment that this condition occurred after they had to have the vehicle jump started.

Cause

Improper "jump starting" of the vehicle has been determined as a cause for the power steering fuses to open (blow). Customers may mistakenly believe that the Underhood Junction Block (UHJB) is actually the battery; therefore, they believe there is both a positive and negative post in the UHJB. After only seeing one post, they may remove the cover and discover there is another small post on the passenger side of the UHJB. The small post on the passenger side of the UHJB is the B+ post for the *electric power steering* . When the jumper cables are attached to both of these posts and the cable is connected to another vehicle, the power steering fuses will blow.

Correction

Replace the blown fuses and verify that concern is eliminated.

Important: If the fuse continues to blow, refer to the appropriate diagnostic procedure below:

- For 2003-04 Saturn IONs, refer to Diagnostic System Check - Power Steering in SI or the 2003 or 2004 Saturn ION Service Manual.
- For 2005-07 Saturn IONs, refer to Diagnostic Starting Point - Power Steering System in SI or the 2005, 2006 or 2007 Saturn ION Service Manual.

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- For 2006-09 Chevrolet HHRs, refer to Diagnostic Starting Point - Power Steering System in SI.

On 2003-2005 Saturn ION vehicles only, open the fuse box cover, then remove and discard the small plastic cover that has the words "REMOVE AND DISCARD THIS COVER FOR FUSE OR RELAY SERVICING" listed on the top. This cover is used only to protect the fuses upon initial factory installation.

Provide the owner with a copy of the following procedure and refer owners to Step 9 for the correct negative cable attachment point.

Jump Starting Procedure

If your vehicle's battery has run down, you may want to use another vehicle and some jumper cables to start your vehicle. Be sure to use the following steps to do it safely.

Caution: Batteries can hurt you. They can be dangerous because:

- They contain acid that can burn you.
- They contain gas that can explode or ignite.
- They contain enough electricity to burn you.

If you do not follow these steps exactly, some or all of these things can hurt you.

Notice: Ignoring these steps could result in costly damage to your vehicle that would not be covered by your warranty. Trying to start your vehicle by pushing or pulling it will not work, and it could damage your vehicle.

1. Check the other vehicle. It must have a 12-volt battery with a negative ground system.

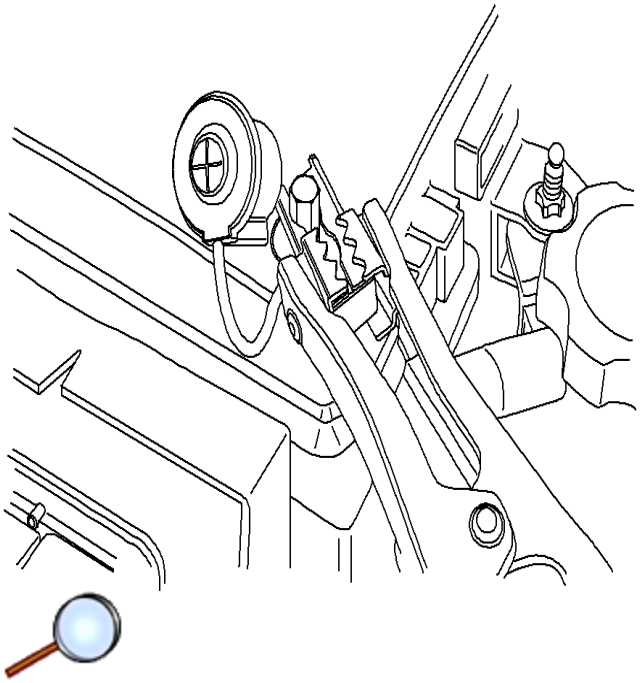
   Notice: If the other vehicle's system is not a 12-volt system with a negative ground, both vehicles can be damaged. Only use vehicles with 12-volt systems with negative grounds to jump start your vehicle.

2. Get the two vehicles close enough so the jumper cables can reach, but be sure the vehicles are not touching each other. If they are, it could cause a ground connection you do not want. You would not be able to start your vehicle, and the bad grounding could damage the electrical systems. To avoid the possibility of the vehicles rolling, set the parking brake firmly on both vehicles involved in the jump start procedure. Put an automatic transaxle in PARK (P) or a manual transaxle in NEUTRAL (N) before setting the parking brake.

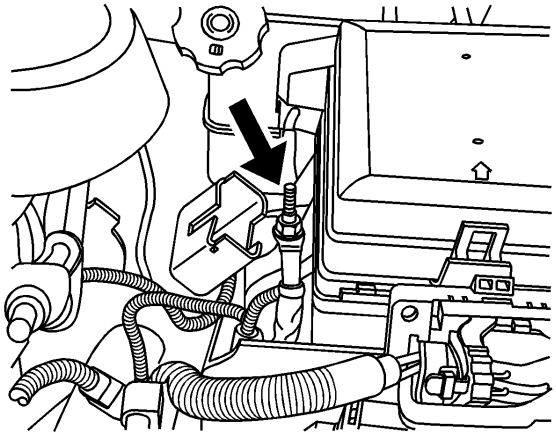
   Notice: If you leave your radio or other accessories on during the jump starting procedure, they could be damaged. The repairs would not be covered by your warranty. Always turn off your radio and other accessories when jump starting your vehicle.

3. Turn off the ignition on both vehicles. Unplug unnecessary accessories plugged into the cigarette lighter or the accessory power outlet. Turn off the radio and all lamps that are not needed. This will avoid sparks and help protect both batteries and radios.

   ### Saturn ION



Chevrolet HHR



4. Open the hoods and locate the positive (+) and negative (-) terminal locations on each vehicle. You will not need to access your battery for jump starting. Your vehicle has a remote positive (+) jump starting terminal. The *remote positive (+) terminal* is located on the *engine compartment fuse block,* under a red cap. Do not remove the black fuse box cover.

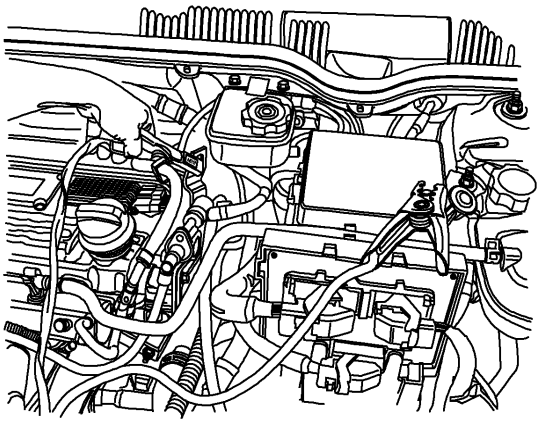
   Caution: An electric fan can start up even when the engine is not running and can injure you. Keep hands, clothing and tools away from any underhood electric fan.

   Caution: Using a match near a battery can cause battery gas to explode. People have been

hurt doing this, and some have been blinded. Use a flashlight if you need more light. Be sure the battery has enough water. You do not need to add water to the battery installed in your new vehicle. But if a battery has filler caps, be sure the right amount of fluid is there. If it is low, add water to take care of that first. If you do not, explosive gas could be present. Battery fluid contains acid that can burn you. Do not get it on you. If you accidentally get it in your eyes or on your skin, flush the place with water and get medical help immediately.

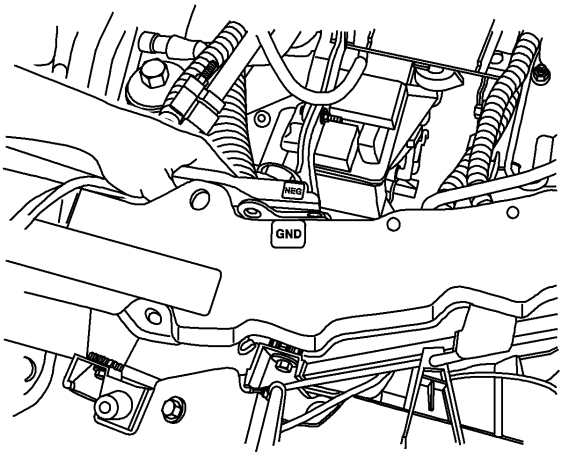
Caution: Fans or other moving engine parts can injure you badly. Keep your hands away from moving parts once the engine is running.

5. Check that the jumper cables do not have loose or missing insulation. If they do, you could get a shock. The vehicles could be damaged too. Before you connect the cables, here are some basic things you should know:
   - Positive (+) will go to positive (+) or to a remote positive (+) terminal if the vehicle has one.
   - Negative (-) will go to a heavy, unpainted metal engine part or to a remote negative (-) terminal if the vehicle has one.
   - Do not connect positive (+) to negative (-) or you will get a short that would damage the battery and maybe other parts too.
   - Do not connect the negative (-) cable to the negative (-) terminal on the vehicle with dead battery because this can cause sparks.
6. Remove the red terminal cover and connect the red positive (+) cable to the positive (+) terminal of the dead battery. Use a remote positive (+) terminal if the vehicle has one.
7. Do not let the other end touch metal. Connect it to the positive (+) terminal of the good battery. Use a remote positive (+) terminal if the vehicle has one.
8. Now connect the black negative (-) cable to the negative (-) terminal of the good battery. Use a remote negative (-) terminal if the vehicle has one. Do not let the other end touch anything until the next step.
9. Connect the other end of the negative (-) cable at least 18 inches (45 cm) away from the dead battery, but not near engine parts that move. The electrical connection is just as good there, and the chance of sparks getting back to the battery is much less. Refer to appropriate model year below for correct negative location.

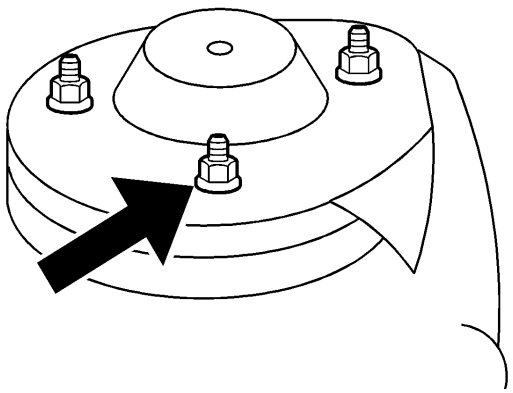


- For 2003 and 2004 model year IONs, attach the black negative (-) cable to the *engine lift*

hook of the dead battery vehicle, about 18 inches (45 cm) away from the remote positive (+) terminal, but not near engine parts that move.



- For 2005 and 2006 model year IONs, attach the black negative (-) cable to the *remote negative terminal.* The remote terminal is located under the GND (-) sticker on the driver side of the radiator support bar (near hood prop rod).



- For 2006 HHRs, attach the black negative (-) cable to the *remote negative terminal.* The remote terminal is located on the driver's side shock tower and is marked with a GND (-) sticker.

10. Now start the vehicle with the good battery and run the engine for a while.
11. Press the unlock button on the remote keyless entry transmitter to disarm your security system, if equipped.

12. Try to start the vehicle that had the dead battery. If it will not start after a few tries, it probably needs service.

    Notice: If the jumper cables are connected or removed in the wrong order, electrical shorting may occur and damage the vehicle. The repairs would not be covered by your warranty. Always connect and remove the jumper cables in the correct order, making sure that the cables do not touch each other or other metal.

13. Disconnect jumper cables.
    13.1. Disconnect the black negative (-) cable from the vehicle that had the dead battery.
    13.2. Disconnect the black negative (-) cable from the vehicle with the good battery.
    13.3. Disconnect the red positive (+) cable from the vehicle with the good battery.
    13.4. Disconnect the red positive (+) cable from the other vehicle.
    13.5. Return the red protector cap to its original position.

Warranty Information

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
N1720	Fuse - Replace	Use Published Labor Operation Time

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ATTACHMENT

Q 07

06-02-32-002C Normal Operating Characteristics

#06-02-32-002C: Normal Operating Characteristics of Electric Power Steering (EPS) System During Extended Lock-to-Lock Turns (Maximum Steerign Wheel Rotation) and/or DTCs C0176 and C0476 Set - (Apr 10, 2008)

Subject: **Normal Operating Characteristics of Electric Power Steering (EPS) System During Extended Lock-to-Lock Turns (Maximum Steering Wheel Rotation) and/or DTCs C0176 and C0476 Set**

Models:

2004-2008 Chevrolet Malibu, Malibu Maxx (excluding 2006-2007 SS and 2007 Maxx models)

2005-2008 Chevrolet Cobalt, Equinox

2006-2008 Chevrolet HHR

2005-2008 Pontiac G6 (excluding 2006-2007 GTP, 2006-2008 Convertible and 2007-2008 GT models)

2005-2006 Pontiac Pursuit (Canada Only)

2006-2008 Pontiac Torrent

2007-2008 Pontiac G5

2002-2008 Saturn VUE

2003-2007 Saturn ION

This bulletin is being updated with the 2008 model year. Please discard Corporate Bulletin Number 06-02-32-002B (Section 02 - Steering).

The purpose of this bulletin is to inform technicians of normal operating characteristics of the electric power steering system (EPS) when the steering wheel is turned in either direction for an extended period of time.

When the steering wheel is turned to its maximum rotation, the power steering control module (PSCM) will command the maximum amount of current to the EPS motor. If the steering wheel is held in this position for an extended period of time, the PSCM will go into overload protection mode to avoid system thermal damage. In this mode, the PSCM will limit the amount of current commanded to the EPS motor, which reduces steering assist levels.

If the PSCM detects a high system temperature and the overload protection mode is invoked, DTC C0176 "System Thermal Error" may be set. On some models, DTC C0476 "Electric Steering Motor Circuit Range/Performance" may also be set. These DTCs indicate normal PSCM action (reduced steering assist) to prevent thermal damage to power steering system components.

Refer to Power Steering System Description and Operation in SI or the appropriate Service Manual

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for more information about this and other vehicle-specific information on electric power steering systems.

For customer inquiries regarding this characteristic, please refer to the Steering section under Driving Your Vehicle in the appropriate Owner Manual (reproduced below for reference).

Owner Manual Information

If you turn the steering wheel in either direction several times until it stops, or hold the steering wheel in the stopped position for an extended amount of time, you may notice a reduced amount of power steering assist. The normal amount of power steering assist should return shortly after a few normal steering movements.

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ATTACHMENT

Q 07

07-02-32-007B Diagnostic Tips for Power Steering Inoperative

Document ID: 2322970

#07-02-32-007B: Diagnostic Tips for Power Steering Inoperative/Steering Wheel Hard to Turn, Power Steering Message Displayed on DIC, DTCs C0176, C0475, C0476, C0550, U2105, U2107 Set - (Aug 6, 2009)

Subject: **Diagnostic Tips for Power Steering Inoperative/Steering Wheel Hard to Turn, Power Steering Message Displayed on DIC, DTCs C0176, C0475, C0476, C0550, U2105, U2107 Set**

Models:
2005-2010 Chevrolet Cobalt
2006-2010 Chevrolet HHR
2005-2006 Pontiac Pursuit (Canada Only)
2007-2009 Pontiac G5
2003-2007 Saturn ION

This bulletin is being revised to update the information for DTC C0475. Please discard Corporate Bulletin Number 07-02-32-007A (Section 02 -- Steering).

The following diagnostics might be helpful if the vehicle exhibits the condition(s) described above. Use the appropriate recommendation based on what symptom has occurred.

No DTCs

Review Corporate Bulletin Number 05-02-32-002D to assure you do not have a blown 60 amp steering fuse. The fuse can be blown during improper jump starting of the vehicle on the HHR and ION. Check for this particularly for tow in conditions. DO NOT replace the steering column unless an internal short has been identified in the column that is causing fuse to blow.

Power Steering Warning Message on DIC with DTCs C0176 and C0476

This condition is often the result of excessive lock-to-lock turns of the steering wheel, causing the thermal protection in the power steering control module (PSCM) to take the steering motor temporarily off line. This is a normal operating characteristic of the system. DO NOT replace the steering column for this condition. Refer to Corporate Bulletin Number 06-02-32-002C for additional information.

Power Steering Warning Message on DIC with DTC C0550 in the PSCM

Inspect the motor harness connection to the PSCM. If no connector problems are found, replace the steering column ONLY as this is an internal controller issue.

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Power Steering Warning Message on DIC with DTC C0475 in the PSCM

Check the connection between the EPS motor and the power steering control module (PSCM) by ensuring the harness connector is properly seated. If the connection is normal, replace ONLY the EPS motor.

Note: If the DTC resets immediately following motor replacement, replace the steering column.

Power Steering Warning Message on DIC with DTC U2105 and/or U2107 in the PSCM with any other U codes

Although the code(s) appear in the PSCM, these are communication codes and are not the result of a problem with the column operation or the control module. If the codes are in history, clear the codes and re-key the vehicle a few times to see if they come back. If they reappear, look for a communication issue from the BCM U2107 or ECM U2105 (wiring, connector, etc.) as the root cause. If the codes do not reappear after a test drive, return the vehicle back to the customer. DO NOT replace the steering column.

Warranty Information

Labor Operation	Description	Labor Time
E8434	Power Steering Assist Motor Replacement	Use Published Labor Operation Time
E7680	Steering Column Replacement	

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4/14/2010

ATTACHMENT

Q 07

07126 Special Coverage Adjustment

Document ID: 2041891

#07126: Special Coverage Adjustment - Loss of Power Steering Assist - (Dec 3, 2007)

Subject: **07126 -- SPECIAL COVERAGE ADJUSTMENT - LOSS OF POWER STEERING ASSIST**

Models: **2005 CHEVROLET MALIBU, MALIBU MAXX**
2005 PONTIAC G6

Condition

Some customers of 2005 model year Chevrolet Malibu, Malibu Maxx, and Pontiac G6 vehicles may experience a loss of power steering assist caused by electrical input signals within the steering column assembly. If the power steering assist is lost, a chime will be heard and the DIC will display a Power Steering warning message. The Service Vehicle Soon light will also illuminate. The vehicle can still be steered in a safe manner but will require greater driver effort at low vehicle speeds or when stopped.

Special Policy Adjustment

This special coverage covers the condition described above for a period of 7 years or 70,000 miles (110,000 km), whichever occurs first, from the date the vehicle was originally placed in service, regardless of ownership.

Dealers are to replace the steering column assembly. This repair will be made at no charge to the customer.

For vehicles covered by Vehicle Service Contracts, all eligible claims with repair orders on or after December 3, 2007, are covered by this special coverage and must be submitted using the labor operation codes provided with this bulletin. Claims with repair orders prior to December 3, 2007, must be submitted to the Service Contract provider.

Vehicles Involved

Involved are *certain* 2005 model year Chevrolet Malibu, Malibu Maxx, and Pontiac G6 vehicles built within the following VIN breakpoints:

Year	Division	Model	From	Through
2005	Chevrolet	Malbu	5F[redacted]	5F[redacted]
2005	Chevrolet	Malibu Maxx	5F[redacted]	5F[redacted]
2005	Pontiac	G6	54[redacted]	54[redacted]

Parts Information

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Parts required to complete this special coverage are to be obtained from General Motors Service and Parts Operations (GMSPO).

Part Number	Description	Qty
15926870	Column Kit, Strg	1

Customer Notification

General Motors will notify customers of this special coverage on their vehicles (see copy of typical customer letter included with this bulletin - actual divisional letter may vary slightly).

Service Procedure

Remove and replace the steering column. Refer to Steering Column Replacement in SI.

Customer Reimbursement - GM, Saturn Canada and Saab Canada Only

For vehicles repaired under the terms of this special coverage, submit a claim with the information indicated below:

Repair Performed	Part Count	Part No.	Parts Allow	CC-FC	Labor Op	Labor Hours	Net Item
Replace the Steering Column Asm	1	--	*	MK-95	T5681		N/A
Chevrolet						1.1	
Pontiac						1.5	
Add: Adjustable Foot Pedals						0.2	
Customer Reimbursement (Canadian & Export Dealers/US CAC)	N/A	N/A	N/A	MK-95	T5682	0.2	**
* The "Parts Allowance" should be the sum total of the current GMSPO Dealer net price plus applicable Mark-Up or Landed Cost Mark-Up (for Export) for the steering column kit needed to complete the repair. ** The amount identified in the "Net Item" column should represent the customer reimbursement amount.							

Customer Reimbursement - For US

All customer requests for reimbursement for previous repairs for the special coverage condition will be handled by the Customer Assistance Center, not by dealers.

A General Motors Customer Reimbursement Procedure and Claim Form is included with the customer letter.

Important: Refer to the GM Service Policies and Procedures Manual, section 6.1.12, for specific procedures regarding customer reimbursement and the form.

Customer Reimbursement - For Canada and Export

Customer requests for reimbursement of previously paid repairs to correct the condition described in this bulletin are to be submitted to the dealer prior to or by December 31, 2008. Repairs must have occurred within the 7 years of the date the vehicle was originally placed in service, or 110,000 km, whichever occurs first.

When a customer requests reimbursement, they must provide the following:

- Proof of ownership at time of repair,
- Original paid receipt confirming the amount of unreimbursed repair expense(s) (including Service Contract deductibles), a description of the repair, and the person or entity performing the repair.

If the work was done by someone other than a GM dealership, the amount of reimbursement will be limited to the amount that the repair would have cost GM to have it completed by a GM dealership.

Courtesy Transportation - For US and Canada

The General Motors Courtesy Transportation program is intended to minimize customer inconvenience when a vehicle requires a repair that is covered by the New Vehicle Limited Warranty. The availability of courtesy transportation to customers whose vehicles are within the warranty coverage period and involved in a product program is very important in maintaining customer satisfaction. Dealers are to ensure that these customers understand that shuttle service or some other form of courtesy transportation is available and will be provided at no charge. Dealers should refer to the General Motors Service Policies and Procedures Manual for Courtesy Transportation guidelines.

December 2007

Dear General Motors Customer:

As the owner of a 2005 model year Chevrolet Malibu, Malibu Maxx, or Pontiac G6 vehicle, your satisfaction with our product is very important to us.

This letter is intended to make you aware that some 2005 model year Chevrolet Malibu, Malibu Maxx, and Pontiac G6 vehicles may lose their power steering assist. This is caused by electrical input signals within the steering column assembly. If the power steering assist is lost, a chime will be heard and the DIC will display a Power Steering warning message. The Service Vehicle Soon light will also illuminate. The vehicle can still be steered in a safe manner but will require greater driver effort at low vehicle speeds or when stopped.

Do not take your vehicle to your GM dealer as a result of this letter unless you believe that your vehicle has the condition as described above.

What We Have Done: General Motors is providing owners with additional protection for the steering column assembly. If this condition occurs on your 2005 model year Chevrolet Malibu, Malibu Maxx, or Pontiac G6 vehicle within 7 years of the date your vehicle was originally placed in service or 70,000 miles (110,00 km), whichever occurs first, the condition will be repaired for you at *no charge* . Diagnosis or repair for conditions other than the condition described above is not covered under this special coverage program.

What You Should Do: Repairs and adjustments qualifying under this special coverage must be performed by a General Motors dealer. You may want to contact your GM dealer to find out how long they will need to have your vehicle so that you may schedule the appointment at a time that is convenient for you. This will also allow your dealer to order parts if they are not already in stock. Keep this letter with your other important glove box literature for future reference.

Reimbursement: The enclosed form explains what reimbursement is available and how to request reimbursement if you have paid for repairs for the special coverage condition.

If you have any questions or need any assistance, just contact your dealer or the appropriate Customer Assistance Center at the number listed below. The Customer Assistance Center's hours of operation are from 8:00 AM to 11:00 PM, EST, Monday through Friday.

Division	Number	Text Telephones (TTY)
Chevrolet	1-800-630-2438	1-800-833-2438
Pontiac	1-800-620-7668	1-800-833-76689
Guam	1-671-648-8650	
Puerto Rico - English	1-800-496-9992	
Puerto Rico - Español	1-800-496-9993	
Virgin Islands	1-800-496-9994	

We are sorry for any inconvenience you may experience; however we have taken this action in the interest of your continued satisfaction with our products.

General Motors Corporation

Enclosure

07126

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4/14/2010

ATTACHMENT

Q 07

08-02-32-005 Loss of Power Steering Assist

Document ID: 2133820

#08-02-32-005: Loss of Power Steering Assist, Power Steering Warning Message Displayed in DIC, IPC/Radio Displays Erratic, DTC C0900, B1325 Set (Replace Ignition Coil/Module Assembly and Add Ground Strap) - (May 12, 2008)

Subject: **Loss of Power Steering Assist, Power Steering Warning Message Displayed in DIC, IPC/Radio Displays Erratic, DTC C0900, B1325 Set (Replace Ignition Coil/Module Assembly and Add Ground Strap)**

Models: **2004-2006 Chevrolet Malibu, Malibu Maxx with 3.5L Engine (VINs 8, N -- RPOs LX9, LZ4)**

Condition

Some customers may comment on a loss of power steering assist at high RPM (above 3500 RPM) and a power steering warning message displayed in the DIC. They may also comment some instrument/radio displays are erratic.

Upon investigation, the technician may find DTC C0900 set. If the displays were erratic, then DTC B1325 will also be set.

Cause

This condition may occur when the system voltage exceeds 16 volts for one second for code C0900 and the system shuts down to protect it from over-voltage operation. If the voltage exceeds 18 volts for five seconds for code B1325, then other electronic systems protect themselves and shut down. It has been found that this voltage increase is caused by an interaction between the alternator and the ignition coil/module assembly.

Correction

Replace the ignition coil/module assembly and add ground strap following the procedure below.

1. Disconnect the ignition coil electrical connector.
2. Disconnect the left side spark plug wires from the ignition coil.
3. Disconnect the right side spark plug wires from the ignition coil.
4. Remove the four bolts attaching the ignition coil to its mounting bracket and remove the ignition coil.
5. Remove the ignition coil from the mounting bracket.
6. Loosen the two lower ignition coil mounting bracket nuts.
7. Remove the two upper ignition coil mounting bracket bolts and discard.

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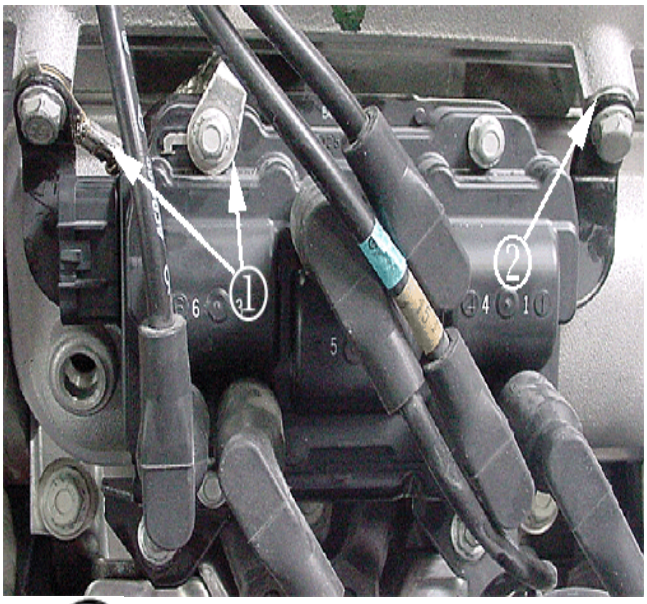
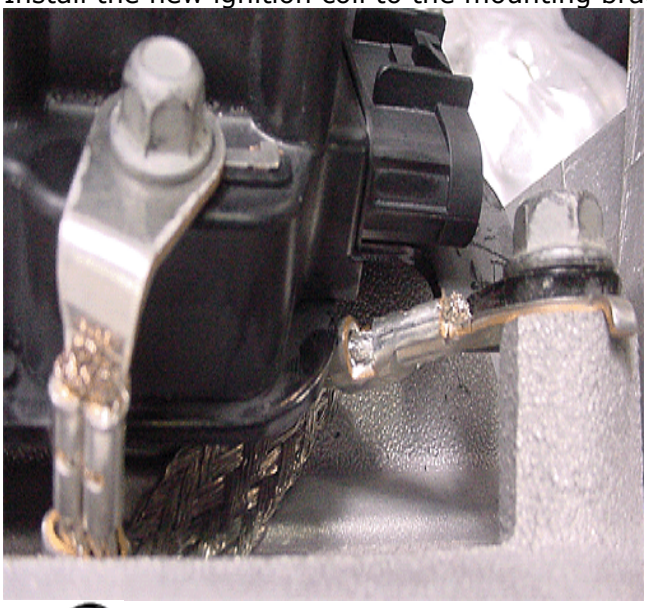


8. Install the ground strap (1), P/N 12581176, to the upper left side of the bracket as shown between the coil bracket and intake. Install the new bracket bolt, P/N 11570082, (do not tighten at this time). Prior to installing the ground strap, remove the captured nut and washers. They are not needed (simply pound them out with a hammer on a vise).
9. Install the washer (2), P/N 02436162, to the upper right side of the bracket between the coil bracket and intake. Install the new bracket bolt, P/N 11570082, (do not tighten at this time).

Tighten
Tighten all the ignition coil bracket bolts and nuts to 25 N·m (15 lb ft).

10. Install the new ignition coil to the mounting bracket.



11. Install the other end of the ground strap to the coil as shown and secure using a new bolt, P/N 11588715.

12. Install the other three ignition coil bolts.

    Tighten
    Tighten the bolts to 10 N·m (89 lb in).

13. Connect the right side spark plug wires to the ignition coil.
14. Connect the left side spark plug wires to the ignition coil.
15. Connect the ignition coil electrical connector.

Parts Information

Part Number	Description	Qty
12595088	Coil Assembly, Ignition	1
12581176	Ground Strap	1
11588715	Bolt	1
02436162	Washer	1
11570082	Bolt	2

Warranty Information

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
J7717*	Replace Ignition Coil and Add Ground Strap	0.5 hr
*This is a unique labor operation for bulletin use only. It will not be published in the Labor Time Guide.		

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ATTACHMENT

Q 07

09-02-36-001 Inconsistent Power Steering Assist

Document ID: 2276749

#09-02-36-001: Inconsistent Power Steering Assist, Intermittent DTC C0545 Set in Power Steering Control Module (Perform Repairs as Outlined) - (May 12, 2009)

Subject: **Inconsistent Power Steering Assist, Intermittent DTC C0545 Set In Power Steering Control Module (Perform Repairs as Outlined)**

Models:
2009 Chevrolet Malibu
2009 Pontiac G6
2009 Saturn AURA
Equipped With Engine RPO LE5
Built February 2, 2008 Through March 3, 2008
Please Refer To GMVIS

Condition

Some customers may comment on an inconsistent power steering assist. A scan tool may show DTC C0545 stored in history.

Cause

Some electronic power steering columns that were installed in these vehicles, produced in the subject time frame, may have an intermittent internal wiring condition that causes DTC C0545 to set intermittently.

Correction

Important: DO NOT replace the motor and module assembly.

If DTC C0545 is stored in history and the customer has commented about inconsistent power steering assist, replace the steering column. Do not replace the motor and module assembly. Only proceed with this repair if the customer has commented about the inconsistent power steering assist and DTC C0545 is stored in history. If the message "Service ESC" appears on the DIC and the C0545 is current, proceed with the normal diagnostic procedures in SI.

Warranty Information

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
E7680	Steering Column Replacement	Use Published Labor Operation Time

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Q 07

PIC4578E EPS-STR Wheel Control Fuse

Document ID: 2363120

#PIC4578E: EPS/STR Wheel Control Fuse (19) Open - (Oct 20, 2009)

Subject: **EPS/STR Wheel Control Fuse (#19) Open**

Models: **2005-2009 Chevrolet Cobalt**
2006-2009 Chevrolet HHR
2005-2006 Pontiac Pursuit (Canada Only)
2007-2009 Pontiac G5

This PI was superseded to remove Admin Details requiring contact with BQM on issue. Please discard PIC4578D.

The following diagnosis might be helpful if the vehicle exhibits the symptom(s) described in this PI.

Condition/Concern:

A customer might complain that their power steering system is in "Default mode" and/or their Steering Wheel Radio Controls are inoperative. A condition has been identified through TAC cases where a common area for a wiring Short To Ground (STG) exists that could cause the EPS/STR Wheel control fuse to open.

Recommendation/Instructions:

There are two known locations where a short to ground is possible

First check for a short to ground in circuit # 1539 (PNK) wire behind the radio. This circuit has reportedly been shorted on the radio mounting bracket, and just below the radio bracket almost to the BCM mounting location.

Note: For ease of locating this possible short remove the radio, HVAC control head, and the upper console trim panels and inspect for wiring/brace contact.

Second check for a short to ground in circuit # 339 (PNK) wire behind the driver's side air bag.

Please follow this diagnostic or repair process thoroughly and complete each step. If the condition exhibited is resolved without completing every step, the remaining steps do not need to be performed.

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