

#00-03-10-007G: Shake/Vibration in Steering Wheel, Floor, Seat at Highway Speeds on Smooth Roads (Diagnose/Balance Tires/Wheels) - (Oct 1, 2004)

Subject: Shake/Vibration in Steering Wheel, Floor, Seat at Highway Speeds on Smooth Roads (Diagnose/Balance Tires/Wheels)



Models: 1998-2005 Buick Park Avenue, Park Avenue Ultra
2000-2005 Buick LeSabre
1998-2004 Cadillac Seville (SLS, STS)
2000-2005 Cadillac DeVille (DTS only)
2001-2003 Oldsmobile Aurora
2000-2005 Pontiac Bonneville (17" Tires only)

This bulletin is being revised to add the 2005 model year, add additional diagnostic information, and include the Coats XR1850. Please discard Corporate Bulletin Number 00-03-10-007F (Section 03 - Suspension).

Condition

Some customers may comment on shaking/vibration in the steering wheel, floor or seat while driving at highway speeds (typically between 60-72 mph (96-115 km/h)) on smooth roads.

Cause

These specific vehicles may be sensitive to various rotating mass assemblies, especially if they are considered to be out-of-balance.

Correction

1. Visually inspect the tires and the wheels. Inspect for evidence of the following conditions and correct as necessary:
 - Missing balance weights
 - Bent rim flange
 - Irregular tire wear
 - Incomplete bead seating
 - Tire irregularities
 - Mud/ice build-up in wheel
 - Stones in the tire tread
2. Set the tire pressure to 30 psi (205 kPa) cold. All rights reserved.

3. Road test the vehicle with the Electronic Vibration Analyzer (EVA) essential tool for a sufficient distance on a known, smooth road surface to duplicate the condition. Record the Hertz (Hz) reading as displayed by the EVA onto the tire data worksheet found at the end of this bulletin. This should be done after a tire break-in period of at least 10 miles (16 km) at 45 mph (72 km/h) or greater, in order to eliminate any possible tire flat-spotting.
4. If the road test indicates a shake/vibration still exists, check the imbalance of each tire/wheel assembly on a known, calibrated, off-car dynamic balancer. If any assembly calls for more than ¼ ounce on either rim flange, remove all balance weights and rebalance to as close to zero as possible.

Important: Some GM dealers may have a Hunter GSP9700 Road Force Balancer, or a Coats XR1850 Runout Balancer. Either will simplify Step 5 by not requiring dial indicators. If a Hunter GSP9700 machine is available, it may also be used to measure the radial force of the tire/wheel assembly. A guideline here is 18 lbs or less.

5. While on the balancer, measure wheel runout. If radial or lateral runout exceeds .020 in (0.50 mm) for aluminum wheels (.030 in (0.76 mm) for steel wheels), replace the wheel.
6. After confirming wheel balance and wheel runout, if any changes were made, road test the vehicle again.
7. If the smooth road shake/vibration still exists:

Important: The completed worksheet must be attached to the hard copy of the repair order.

- If a Hunter GSP9700 Road Force/Balancing machine is used, record radial force variation (RFV) on the worksheet at the end of this bulletin. If one or more of the tire/wheel assemblies read more than 18 lbs, match mount the tire to the wheel to get below 18 lbs. Readings of 12 lbs or less are preferable for sensitive customers.
- If a Coats XR1850 Runout/Balancing Machine is used, record radial runout of the tire/wheel assemblies on the worksheet at the end of this bulletin. If one or more of the tire/wheel assemblies are more than .040, match mount the tire to the wheel to get below .040. Readings of .030 inch or less are preferable for sensitive customers.
- If the RFV or runout cannot be reduced to an acceptable level, replace the affected tire(s) under the guidelines of the GM Tire Warranty.
- The screened tire program is only available for the General branded tires used on the Buick LeSabre. Complete the tire request form at the end of this bulletin and fax to Continental/General.
- Road test the vehicle to ensure the shake/vibration has been eliminated.

Important: THE CONTROL ARMS SHOULD ONLY BE INSTALLED ON VEHICLES IF, AFTER THE TIRE AND WHEEL DIAGNOSIS AND REPAIRS HAVE BEEN PERFORMED, THE VIBRATION CONDITION STILL EXISTS.

8. Replace both lower control arms on vehicles built prior to the following VIN breakpoints. On Aurora, Bonneville, DeVille, Park Avenue, Park Avenue Ultra and Seville models, a newly developed hydro-bushing lower control arm with improved damping characteristics has been released. This control arm is not used on the LeSabre. The new lower control arms may provide an incremental improvement to the vehicle ride. Customers who have become "tuned in" to the shake condition may still feel some shake in the vehicle after the new lower control arms are installed. Refer to Lower Control Arm Replacement in SI (refer to the Parts Information table below for SI document ID numbers).

Model	VIN
Park Avenue	34175493
Seville (SLS, STS)	3U247643
DeVille (DTS only)	3U247644
Aurora	34175503
Bonneville	34175497

Parts Information

P/N	Description	SI Document
25746324	Lower Control Arm, Left (Aurora, Bonneville, DeVille, Park Avenue, Park Avenue Ultra, Seville)	Aurora -- 639351 Bonneville -- 657809 DeVille w/FE1, FE3 -- 724856
25746325	Lower Control Arm, Right (Aurora, Bonneville, DeVille, Park Avenue, Park Avenue Ultra, Seville)	DeVille w/FE7 -- 724858 Park Avenue, Park Avenue Ultra -- 657760 Seville -- 539332

Parts are currently available from GMSPPO.

Warranty Information

For vehicles repaired under warranty, use:

Labor Operation	Description	Labor Time
E0901	High Speed Tire Shake	0.8 hr
Add	Measure Tire/Wheel Asm., Runout and Re-balance	1.3 hrs
Add	Replace Tire and/or Wheel - Each	0.2 hr
E3537	Arm Assembly, Front Control -- Replace	Use Published Labor Operation Time

Screened Tire Request Form (Bulletin 00-03-10-007G)

Fax Instructions:

Continental General : 888-847-3329

Dealer Code _____		Date _____
Dealership Name _____		
(Shipping) Street Address: _____		
City/Prov _____ State _____ ZIP/Postal Code _____		
Contact Name _____		Phone Number _____
Fax Number _____		
<i>Vehicle Information</i>		
VIN _____		
Make _____	Model _____	Year _____
Mileage _____		

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Tire Information

Tire Brand/Name _____ Tire Size _____

TPC Number _____ Sidewall (circle one) WW BW Sealant
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Number of tires requested (circle one) 1 2 3 4
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Bulletin #00-03-10-007G Tire Data Worksheet

<i>Vehicle Information</i>

VIN # _____ Mileage _____

Customer Name _____

Tire Information

Size _____ Brand _____ TPC# _____

Verify Vibration Test Drive

A. Speed _____

B. Road Condition _____	
C. Trans. In Neutral (check one) : Yes _____ No _____	
D. Torque Sensitive (check one): Yes _____ No _____	
<p><i>Electronic Vibration Analyzer (EVA)</i></p> <p>Diagnostic Tool Readings: Measure from driver's side seat track</p>	
A. Speed _____	
B. Hertz (Hz) _____	
C. Gs _____	
<p><i>Check Balance</i></p> <p>Rebalance if any tire/wheel assembly exceeds 1/4 ounce</p>	
<p><i>Measure Wheel Runout</i></p> <p>(If Coats XR1850 is used)</p>	
<i>Radial Runout</i>	<i>Lateral Runout</i>
LF Inboard _____ Outboard _____	LF Inboard _____ Outboard _____
RF Inboard _____ Outboard _____	RF Inboard _____ Outboard _____
LR Inboard _____ Outboard _____	LR Inboard _____ Outboard _____
RR Inboard _____ Outboard _____	RR Inboard _____ Outboard _____

<p><i>Radial Force Variation Readings</i></p> <p>(If Hunter GSP9700 is used)</p>	
<p>LF _____ lbs</p>	<p>LR _____ lbs</p>
<p>RF _____ lbs</p>	<p>RR _____ lbs</p>

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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