

**SPECIFICATIONS > TRIM HEIGHT SPECIFICATIONS > TRIM HEIGHT  
SPECIFICATIONS (Z-D HEIGHT)**

| Model                 | RPO | Z-Height<br>± 10 mm (0.40<br>in) | Cross-Z<br>± 10 mm (0.40<br>in) | D-Height<br>± 10 mm (0.40<br>in) | Cross-D<br>± 10 mm (0.40<br>in) |
|-----------------------|-----|----------------------------------|---------------------------------|----------------------------------|---------------------------------|
| COUPE,<br>CONVERTIBLE | FE2 | 9 mm (0 in)                      | -                               | -                                | -                               |
|                       | FE3 | 9 mm (0 in)                      | -                               | -                                | -                               |

**SPECIFICATIONS > TRIM HEIGHT SPECIFICATIONS > TRIM HEIGHT  
SPECIFICATIONS (P-R HEIGHT)**

| Model                 | RPO            | Tire Size                                         | P-Height<br>± 12 mm<br>(0.50 in) | Cross-P<br>± 10 mm<br>(0.40 in) | R-Height<br>± 12 mm<br>(0.50 in) | Cross-R<br>± 10 mm<br>(0.40 in) |
|-----------------------|----------------|---------------------------------------------------|----------------------------------|---------------------------------|----------------------------------|---------------------------------|
| COUPE,<br>CONVERTIBLE | FE2 and<br>ROH | Front<br>P245/50<br>R18<br>Rear<br>P245/50<br>R18 | 733 mm (29<br>in)                | -                               | 741 mm (29<br>in)                | -                               |
|                       | FE2 and<br>R29 | Front<br>P245/40<br>R20<br>Rear 245/40<br>R20     | 728 mm (29<br>in)                | -                               | 736 mm (29<br>in)                | -                               |
|                       | FE3 and<br>ROF | Front 245/40<br>ZR20<br>Rear 275/35<br>ZR20       | 730 mm (29<br>in)                | -                               | 738 mm (29<br>in)                | -                               |

**DIAGNOSTIC INFORMATION AND PROCEDURES > SYMPTOMS - SUSPENSION  
GENERAL DIAGNOSIS**

 **IMPORTANT:**

*The following steps must be completed before using the symptom tables.*

Review the system description and operation in order to familiarize yourself with the system functions.  
Refer to the appropriate description and operation:

- Front Suspension Description and Operation .
- Rear Suspension Description and Operation .
- General Description .

**DIAGNOSTIC INFORMATION AND PROCEDURES > SYMPTOMS - SUSPENSION**  
**GENERAL DIAGNOSIS > VISUAL/PHYSICAL INSPECTION**

- Inspect for aftermarket devices which could affect the operation of any of the suspension subsystems.
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.
- Inspect for proper tire size and inflation pressure. Refer to Vehicle Certification, Tire Placard, Anti-Theft, and Service Parts ID Label .

**DIAGNOSTIC INFORMATION AND PROCEDURES > SYMPTOMS - SUSPENSION**  
**GENERAL DIAGNOSIS > SYMPTOM LIST**

Refer to a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- Ride Diagnosis
- Vehicle Leads/Pulls
- Body Leans or Sways in Corners
- Suspension Bottoms
- Memory Steer
- Noise Diagnosis - Front Suspension
- Noise Diagnosis - Rear Suspension
- Suspension Strut and Shock Absorber Testing - On Vehicle
- Wheel Bearings Diagnosis
- Lead/Pull Description

**DIAGNOSTIC INFORMATION AND PROCEDURES > RIDE DIAGNOSIS**

| Step | Action | Yes | No |
|------|--------|-----|----|
|------|--------|-----|----|

|   |                                                                                                                                                                                                                                                                       |                     |                                               |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------------------|
| 1 | Did you review the General Description and perform the necessary inspections?                                                                                                                                                                                         | Go to <b>Step 2</b> | Go to Symptoms - Suspension General Diagnosis |
| 2 | <div>  <b>IMPORTANT:</b><br/> Verify the vehicle suspension package RPO. </div> <p>Verify that the ride is too soft or too hard. Does the vehicle ride normally?</p>                 | System OK           | Go to <b>Step 3</b>                           |
| 3 | Check the tire inflation and adjust to specifications. Refer to Vehicle Certification, Tire Placard, Anti-Theft, and Service Parts ID Label .<br>Did you adjust the tire pressure?                                                                                    | Go to <b>Step 6</b> | Go to <b>Step 4</b>                           |
| 4 | Inspect the vehicle trim height. Refer to Trim Height Inspection .<br>Did you find and correct the condition?                                                                                                                                                         | Go to <b>Step 6</b> | Go to <b>Step 5</b>                           |
| 5 | Inspect the following suspension components for wear or damage: <ul style="list-style-type: none"> <li>Shock Absorbers-Refer to Suspension Strut and Shock Absorber Testing - On Vehicle .</li> <li>Springs</li> </ul> <p>Did you find and correct the condition?</p> | Go to <b>Step 6</b> | -                                             |
| 6 | Drive the vehicle in order to verify the repair.<br>Did you correct the condition?                                                                                                                                                                                    | System OK           | Go to <b>Step 3</b>                           |

## DIAGNOSTIC INFORMATION AND PROCEDURES > VEHICLE LEADS/PULLS

| Step                                                                                                                                                                        | Action                                                                                        | Values | Yes                 | No                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------|---------------------|-----------------------------------------------|
| DEFINITION: At a constant highway speed on a typical straight road, lead/pull is the amount of effort required at the steering wheel to maintain the vehicle straight path. |                                                                                               |        |                     |                                               |
| 1                                                                                                                                                                           | Did you review the General Description and perform the visual/physical inspections?           | -      | Go to <b>Step 2</b> | Go to Symptoms - Suspension General Diagnosis |
| 2                                                                                                                                                                           | Road test the vehicle in order to verify the complaint.<br>Does the vehicle operate normally? | -      | System OK           | Go to <b>Step 3</b>                           |

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| 3 | <p>With the vehicle on a flat surface and the wheels facing straight ahead, verify that the Steering Angle Sensor is centered.</p> <p>If the steering wheel angle sensor is out of specification, refer to Steering Angle Sensor Centering .</p> <p>Did you find and correct the condition?</p>                                                      | 0±5° | Go to <b>Step 10</b> | Go to <b>Step 4</b> |
| 4 | <p>Inspect the tire/wheel assemblies for the following:</p> <ul style="list-style-type: none"> <li>• Correct tire pressure-Refer to the tire placard.</li> <li>• Correct tire size-Refer to the tire placard.</li> <li>• Abnormal tire wear or damage</li> </ul> <p>Did you find and correct the condition?</p>                                      | -    | Go to <b>Step 10</b> | Go to <b>Step 4</b> |
| 5 | <p>Perform the Radial Tire Lead/Pull Correction .</p> <p>Did you find and correct the condition?</p>                                                                                                                                                                                                                                                 | -    | Go to <b>Step 10</b> | Go to <b>Step 6</b> |
| 6 | <p>Inspect and correct/adjust the suspension and steering systems for the following:</p> <ul style="list-style-type: none"> <li>• Vehicle trim height-Refer to Trim Height Specifications .</li> <li>• Excessively worn, loose, or damaged components</li> </ul> <p>Did you find and correct the condition?</p>                                      | -    | Go to <b>Step 10</b> | Go to <b>Step 7</b> |
| 7 | <p>Inspect the brake system for brake drag. With the vehicle suspended on a hoist, brake drag can be identified by rotating each wheel several times and observing whether more force is needed to rotate the left wheel or the right wheel.</p> <p>Did you find and correct the condition?</p>                                                      | -    | Go to <b>Step 10</b> | Go to <b>Step 8</b> |
| 8 | <p>Inspect the wheel alignment and adjust as necessary. Refer to Wheel Alignment Measurement .</p> <p>Did you correct the condition?</p>                                                                                                                                                                                                             | -    | Go to <b>Step 10</b> | Go to <b>Step 9</b> |
| 9 | <p>Inspect the steering gear for unequal effort. The vehicle must be suspended on a hoist, the engine running, and the transmission in park or neutral. Grasp the tire assembly and manually simulate a turn from the left of center and the right of center observing whether more force is needed to turn to the left or to the right. If this</p> | -    | System OK            | Go to <b>Step 4</b> |

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|    | condition exists, replace the steering gear.<br>Did you correct the condition?       |   |           |                     |
| 10 | Operate the vehicle in order to verify the repair.<br>Did you correct the condition? | - | System OK | Go to <b>Step 4</b> |

## DIAGNOSTIC INFORMATION AND PROCEDURES > BODY LEANS OR SWAYS IN CORNERS

| Step | Action                                                                                                                                                                                       | Yes                 | No                                            |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------------------|
| 1    | Did you review the General Description and perform the necessary inspections?                                                                                                                | Go to <b>Step 2</b> | Go to Symptoms - Suspension General Diagnosis |
| 2    | Verify the vehicle leans or sways in corners.<br>Does the vehicle operate normally?                                                                                                          | System OK           | Go to <b>Step 3</b>                           |
| 3    | Inspect the following components for wear or damage: <ul style="list-style-type: none"> <li>• Rear Coil Springs</li> <li>• Front Coil Springs</li> </ul> Are the components worn or damaged? | Go to <b>Step 5</b> | Go to <b>Step 4</b>                           |
| 4    | 1. Inspect the stabilizer shaft link for wear or damage.<br>2. Repair as necessary.<br>Did you find and correct the condition?                                                               | Go to <b>Step 6</b> | Go to <b>Step 2</b>                           |
| 5    | Replace the springs as necessary.<br>Did you complete the repair?                                                                                                                            | Go to <b>Step 6</b> | -                                             |
| 6    | Operate the vehicle in order to verify the repair.<br>Did you correct the condition?                                                                                                         | System OK           | Go to <b>Step 3</b>                           |

## DIAGNOSTIC INFORMATION AND PROCEDURES > SUSPENSION BOTTOMS

| Step                                                                                                                                                                                      | Action | Yes | No |
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| DEFINITION: A loud bang or thump that can usually be felt and/or heard when the vehicle is driven over bumps. This condition is commonly noticed when the vehicle trim height is too low. |        |     |    |

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|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------------------|
| 1 | Did you review the General Description and perform the necessary inspections?                                                                                                                                                                                                                                                 | Go to <b>Step 2</b> | Go to Symptoms - Suspension General Diagnosis |
| 2 | Verify that the suspension bottoms.<br>Does the vehicle operate normally?                                                                                                                                                                                                                                                     | System OK           | Go to <b>Step 3</b>                           |
| 3 | Inspect for vehicle overloading and correct the overloading condition as necessary. Refer to Vehicle Certification, Tire Placard, Anti-Theft, and Service Parts ID Label for specifications.<br>Did you find and correct the condition?                                                                                       | Go to <b>Step 6</b> | Go to <b>Step 4</b>                           |
| 4 | Inspect the following components: <ul style="list-style-type: none"> <li>Inspect the shock absorbers. Refer to Suspension Strut and Shock Absorber Testing - On Vehicle .</li> <li>Inspect for damaged coil springs, torsion bar or leaf springs and replace as necessary.</li> </ul> Did you find and correct the condition? | Go to <b>Step 6</b> | Go to <b>Step 5</b>                           |
| 5 | Inspect the vehicle trim height. Refer to Trim Height Inspection .<br>Did you complete the trim height inspection procedure?                                                                                                                                                                                                  | Go to <b>Step 6</b> | -                                             |
| 6 | Operate the vehicle in order to verify the repair.<br>Did you correct the condition?                                                                                                                                                                                                                                          | System OK           | Go to <b>Step 3</b>                           |

## DIAGNOSTIC INFORMATION AND PROCEDURES > TORQUE STEER

| Step                                                                                                              | Action                                                                                                                                                                                                                                                                                                                             | Yes                 | No                                            |
|-------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------------------------------------|
| DEFINITION: On a dry, smooth, flat road, the vehicle has a left or right steering force only during acceleration. |                                                                                                                                                                                                                                                                                                                                    |                     |                                               |
| 1                                                                                                                 | Did you review the General Description and perform the necessary inspections?                                                                                                                                                                                                                                                      | Go to <b>Step 2</b> | Go to Symptoms - Suspension General Diagnosis |
| 2                                                                                                                 | <ol style="list-style-type: none"> <li>Drive the vehicle on a straight, smooth, flat road.</li> <li>Press the accelerator and determine if any additional steering input is required to maintain a straight ahead direction.</li> <li>Repeat this test with the vehicle traveling in the opposite direction in order to</li> </ol> | Go to <b>Step 3</b> | System OK                                     |

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|   | eliminate crosswind effects. Lead/pull caused by unlevel roads and crosswinds are considered normal.<br><br>Does the vehicle exhibit torque steer when the accelerator is pressed?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                           |                     |
| 3 | <ol style="list-style-type: none"> <li>1. Drive the vehicle on a straight, smooth, flat road at 64-97 km/h (40-60 mph).</li> <li>2. Remove your foot from the accelerator.</li> <li>3. Shift the transmission into NEUTRAL in order to allow the vehicle to coast.</li> <li>4. Is any additional steering input required to maintain a straight ahead direction?</li> <li>5. Repeat this test with the vehicle traveling in the opposite direction in order to eliminate crosswind effects. Lead/pull caused by unlevel roads and crosswinds are considered normal.</li> </ol><br>Does the vehicle direction change when the steering wheel is momentarily released? | Go to Vehicle Leads/Pulls | Go to <b>Step 4</b> |
| 4 | Inspect the front suspension and powertrain mounts for worn or damaged components and repair as necessary.<br>Did you find and correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Go to <b>Step 6</b>       | Go to <b>Step 5</b> |
| 5 | Inspect the vehicle trim height. Refer to Trim Height Inspection .<br>Did you find and correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Go to <b>Step 6</b>       | -                   |
| 6 | Operate the vehicle in order to verify the repair.<br>Did you correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | System OK                 | -                   |

## DIAGNOSTIC INFORMATION AND PROCEDURES > MEMORY STEER

| Step                                                                              | Action                                                                        | Yes                 | No                                            |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------|-----------------------------------------------|
| DEFINITION: The steering wheel does not return to center after completing a turn. |                                                                               |                     |                                               |
| 1                                                                                 | Did you review the General Description and perform the necessary inspections? | Go to <b>Step 2</b> | Go to Symptoms - Suspension General Diagnosis |
| 2                                                                                 | Verify that memory steer is present.<br>Does the system operate normally?     | System OK           | Go to <b>Step 3</b>                           |

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| 3 | <p>Ensure that all of the tires are inflated to the correct pressure. Refer to Vehicle Certification, Tire Placard, Anti-Theft, and Service Parts ID Label .</p> <p>Has the inspection/adjustment been performed?</p>                                                                                                                                                                                                                                                                             | Go to <b>Step 4</b> | -                    |
| 4 | <ol style="list-style-type: none"> <li>1. Lubricate the tie rod ends and the ball joints if applicable.</li> <li>2. Inspect the suspension system for worn or damaged components.</li> <li>3. Repair as necessary.</li> <li>4. Road test the vehicle in order to verify the customer complaint.</li> </ol> <p>Does the vehicle still exhibit memory steer?</p>                                                                                                                                    | Go to <b>Step 5</b> | System OK            |
| 5 | <ol style="list-style-type: none"> <li>1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP) .</li> <li>2. Disconnect both of the outer tie rod ends from the steering knuckles. Refer to Steering Linkage Outer Tie Rod Replacement .</li> <li>3. Use your hands in order to move the steering gear linkage to check for a binding condition.</li> </ol> <p>Is the power steering gear linkage abnormally difficult to move?</p> | Go to <b>Step 9</b> | Go to <b>Step 6</b>  |
| 6 | <p>Use your hands in order to rotate the steering knuckle/ball joints.</p> <p>Are the steering knuckle/ball joints abnormally difficult to rotate?</p>                                                                                                                                                                                                                                                                                                                                            | Go to <b>Step 7</b> | Go to <b>Step 8</b>  |
| 7 | <p>Replace the lower control arm. Refer to Front Lower Control Front Link Replacement (LGX or LTG, Without V18)Front Lower Control Front Link Replacement (LT1, Without V18)Front Lower Control Front Link Replacement (LGX or LTG, With V18)Front Lower Control Front Link Replacement (LT1, With V18) , or Front Lower Control Rear Link Replacement (LGX, LTG)Front Lower Control Rear Link Replacement (LT1) .</p> <p>Did you complete the repair?</p>                                        | Go to <b>Step 8</b> | Go to <b>Step 8</b>  |
| 8 | <ol style="list-style-type: none"> <li>1. Rotate the steering wheel ONE revolution in either direction.</li> <li>2. Rotate the steering wheel back to the</li> </ol>                                                                                                                                                                                                                                                                                                                              | Go to <b>Step 9</b> | Go to <b>Step 12</b> |

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|    | original position.<br><br>Was the steering wheel abnormally difficult to rotate in either direction?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                      |
| 9  | <p>1. Disconnect the intermediate shaft.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;">  <b>NOTE:</b><br/><br/>Do NOT rotate the steering wheel more than one complete revolution. </div> <p>2. Note the position of the steering wheel and rotate the steering wheel ONE revolution in either direction.</p> <p>3. Rotate the steering wheel back to the original position as previously noted.</p> <p>Was the steering wheel abnormally difficult to rotate in either direction?</p> | Go to <b>Step 10</b> | Go to <b>Step 11</b> |
| 10 | Repair the steering column as necessary.<br>Did you complete the repair?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Go to <b>Step 13</b> | -                    |
| 11 | <p>1. Repair the steering gear as necessary. Refer to Electric Belt Drive Rack and Pinion Steering Gear Replacement (LGX, LTG)Electric Belt Drive Rack and Pinion Steering Gear Replacement (LT1) .</p> <p>2. Road test the vehicle in order to verify the customer complaint.</p> <p>Did you complete the repair?</p>                                                                                                                                                                                                                                                                             | Go to <b>Step 12</b> | -                    |
| 12 | <p>1. Check for proper wheel alignment. Refer to Wheel Alignment Measurement . Adjust as necessary.</p> <p>2. Road test the vehicle in order to verify the customer complaint.</p> <p>Did you complete the repair?</p>                                                                                                                                                                                                                                                                                                                                                                             | Go to <b>Step 13</b> | -                    |
| 13 | Operate the vehicle in order to verify the repair.<br>Did you correct the condition?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | System OK            | Go to <b>Step 3</b>  |

## SUSPENSION

| Step                                                                                                                                                | Action                                                                                                                                                                                                                                                                                                                                                                 | Yes                  | No                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------------|
| DEFINITION: Any noise emitted from the front of the vehicle that is induced by vehicle speed or driving terrain as related to the front suspension. |                                                                                                                                                                                                                                                                                                                                                                        |                      |                                               |
| 1                                                                                                                                                   | Did you review the General Description and perform the necessary inspections?                                                                                                                                                                                                                                                                                          | <b>Go to Step 2</b>  | Go to Symptoms - Suspension General Diagnosis |
| 2                                                                                                                                                   | <div>  <b>NOTE:</b><br/> <i>Compare this vehicle to an identical vehicle in order to determine if the customer's concern is a normal operating characteristic of the vehicle.</i> </div> <p>Attempt to duplicate the noise. Road test the vehicle. Is the front suspension noisy?</p> | <b>Go to Step 3</b>  | System OK                                     |
| 3                                                                                                                                                   | <ol style="list-style-type: none"> <li>Shift the transmission into Park.</li> <li>Turn the ignition OFF.</li> <li>Bounce the front of the vehicle in order to duplicate the noise.</li> </ol> <p>Is the noise present?</p>                                                                                                                                             | <b>Go to Step 4</b>  | <b>Go to Step 5</b>                           |
| 4                                                                                                                                                   | <ol style="list-style-type: none"> <li>Bounce the front of the vehicle. Use <b>J-39570</b> Chassis Ear in order to locate the source of the noise.</li> <li>Repair or replace the suspect components as necessary.</li> </ol> <p>Did you complete the repair?</p>                                                                                                      | <b>Go to Step 25</b> | -                                             |
| 5                                                                                                                                                   | <ol style="list-style-type: none"> <li>Raise and support the vehicle. Lifting and Jacking the Vehicle (Base) Lifting and Jacking the Vehicle (HP)</li> <li>Inspect all of the front suspension components for any damage.</li> </ol> <p>Are any components damaged?</p>                                                                                                | <b>Go to Step 6</b>  | <b>Go to Step 7</b>                           |
| 6                                                                                                                                                   | <p>Repair any damaged components.</p> <p>Did you complete the repair?</p>                                                                                                                                                                                                                                                                                              | <b>Go to Step 25</b> | -                                             |

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| 7  | <p>1. Inspect the tires for proper inflation. Vehicle Certification, Tire Placard, Anti-Theft, and Service Parts ID Label Correct the tire inflation pressure as necessary.</p> <p>2. Inspect the tires for unusual wear. Tire Diagnosis - Irregular or Premature Wear</p> <p>Does either tire exhibit unusual tread wear?</p> | Go to Step 8  | Go to Step 10 |
| 8  | <p>1. Rotate the tires. Tire Rotation (Directional)Tire Rotation (Non-Directional)</p> <p>2. Road test the vehicle.</p> <p>Is the noise now emitted from the rear of the vehicle?</p>                                                                                                                                          | Go to Step 9  | Go to Step 10 |
| 9  | <p>Replace the tires that are causing the noise. Did you complete the repair?</p>                                                                                                                                                                                                                                              | Go to Step 25 | -             |
| 10 | <p>Ensure that the ball joints and steering linkage are lubricated, if applicable. Lubricate/replace as necessary. Did you service any components?</p>                                                                                                                                                                         | Go to Step 25 | Go to Step 11 |
| 11 | <div> <p><b>CAUTION:</b></p> <p><i>Refer to Fastener Caution .</i></p> </div> <p>Ensure that all of the wheel nuts are tightened to the correct specification. Tighten as necessary. Fastener SpecificationsDid you tighten any wheel nuts?</p>                                                                                | Go to Step 25 | Go to Step 12 |
| 12 | <p>Use your hands in order to push and pull the shock. Is the shock loose?</p>                                                                                                                                                                                                                                                 | Go to Step 13 | Go to Step 15 |
| 13 | <p>1. Inspect the shock module fasteners for the correct fastener tightening specification. Tighten as necessary. Fastener Specifications</p> <p>2. Use your hand to push and pull the shock module.</p> <p>Is the shock module loose?</p>                                                                                     | Go to Step 14 | Go to Step 25 |
| 14 | <p>Replace the loose or worn shock module components. Strut, Strut Component, or Spring Replacement (FE2 or FE3, Without F55)Strut, Strut Component, or Spring Replacement (FE3, With F55) Did you complete the repair?</p>                                                                                                    | Go to Step 25 | -             |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |                      |
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| 15 | Use your hands in order to push and pull on the stabilizer shaft.<br>Is the stabilizer shaft loose?                                                                                                                                                                                                                                                                                                                                                   | <b>Go to Step 16</b> | <b>Go to Step 20</b> |
| 16 | <ol style="list-style-type: none"> <li>1. Inspect all of the stabilizer shaft fasteners. Tighten as necessary. Fastener Specifications</li> <li>2. Use your hands in order to push and pull on the stabilizer shaft.</li> </ol> Is the stabilizer shaft loose?                                                                                                                                                                                        | <b>Go to Step 17</b> | <b>Go to Step 25</b> |
| 17 | Observe the location of the stabilizer shaft looseness.<br>Is the looseness observed at the stabilizer shaft links?                                                                                                                                                                                                                                                                                                                                   | <b>Go to Step 18</b> | <b>Go to Step 20</b> |
| 18 | Replace the stabilizer shaft links. Stabilizer Shaft Link Replacement (LGX, LTG)Stabilizer Shaft Link Replacement (LT1)<br>Did you complete the repair?                                                                                                                                                                                                                                                                                               | <b>Go to Step 25</b> | -                    |
| 19 | Replace the stabilizer shaft insulators and/or brackets. Stabilizer Shaft Insulator ReplacementStabilizer Shaft Insulator Replacement (FE3, FE4)<br>Did you complete the repair?                                                                                                                                                                                                                                                                      | <b>Go to Step 25</b> | -                    |
| 20 | Inspect the control arms for looseness or movement.<br>Is any looseness or movement observed?                                                                                                                                                                                                                                                                                                                                                         | <b>Go to Step 21</b> | <b>Go to Step 23</b> |
| 21 | <ol style="list-style-type: none"> <li>1. Inspect the control arm fasteners for the correct fastener tightening specification. Fastener Specifications Tighten as necessary.</li> <li>2. Inspect the control arm for looseness.</li> </ol> Is the control arm loose?                                                                                                                                                                                  | <b>Go to Step 22</b> | <b>Go to Step 25</b> |
| 22 | Replace any worn or loose control arm bushings. Front Lower Control Front Link Replacement (LGX or LTG, Without V18)Front Lower Control Front Link Replacement (LT1, Without V18)Front Lower Control Front Link Replacement (LGX or LTG, With V18)Front Lower Control Front Link Replacement (LT1, With V18) , or Front Lower Control Rear Link Replacement (LGX, LTG)Front Lower Control Rear Link Replacement (LT1)<br>Did you complete the repair? | <b>Go to Step 25</b> | -                    |
| 23 | <ol style="list-style-type: none"> <li>1. Start the engine with the drive wheels off of the ground.</li> <li>2. Shift the transmission into Drive.</li> </ol>                                                                                                                                                                                                                                                                                         | <b>Go to Step 24</b> | <b>Go to Step 8</b>  |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                     |
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|    | <div> <p><b>WARNING:</b></p> <p><i>Do not spin the drive wheels faster than 55 km/h (35 mph) as indicated by the speedometer. This limit is necessary because the speedometer indicates only one half of the actual wheel speed when one drive wheel is spinning and the other drive wheel is stopped. Personal injury and damage may result from high speed spinning.</i></p> </div> <div> <p> <b>NOTE:</b></p> <p><i>This step will require the assistance of another person to maintain the drive train speed. Do not use the cruise control to maintain the drivetrain speed.</i></p> </div> <p>3. Increase the drive wheel speed until the noise is at the most audible level.</p> <div> <p> <b>NOTE:</b></p> <p><i>Do not allow the <b>J 39570</b> Chassis Ear to contact any moving components.</i></p> </div> <p>4. Use <b>J-39570</b> Chassis Ear in order to locate the source of the noise.</p> <p>Does either wheel bearing exhibit noise?</p> |                      |                     |
| 24 | <p>Replace the wheel bearings. Front Wheel Bearing and Hub Replacement (LGX, LTG)Front Wheel Bearing and Hub Replacement (LT1)</p> <p>Did you complete the repair?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Go to Step 25</b> | -                   |
| 25 | <p>Operate the vehicle in order to verify the repair.</p> <p>Did you correct the condition?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | System OK            | <b>Go to Step 3</b> |

## DIAGNOSTIC INFORMATION AND PROCEDURES > NOISE DIAGNOSIS - REAR SUSPENSION

| Step | Action | Yes | No |
|------|--------|-----|----|
|------|--------|-----|----|

DEFINITION: Any noise emitted from the rear of the vehicle that is induced by vehicle speed or driving terrain as related to the rear suspension.

|   |                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                                               |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------------|
| 1 | Did you review the General Description and perform the necessary inspections?                                                                                                                                                                                                                                                                                                                     | Go to <b>Step 2</b>  | Go to Symptoms - Suspension General Diagnosis |
| 2 | Verify that the rear suspension is noisy.<br>Is the rear suspension noisy?                                                                                                                                                                                                                                                                                                                        | Go to <b>Step 3</b>  | System OK                                     |
| 3 | <ol style="list-style-type: none"> <li>1. Shift the transmission into Park.</li> <li>2. Turn the ignition OFF.</li> <li>3. Bounce the rear of the vehicle in order to duplicate the noise.</li> </ol> <p>Is the complaint noise present?</p>                                                                                                                                                      | Go to <b>Step 4</b>  | Go to <b>Step 5</b>                           |
| 4 | <ol style="list-style-type: none"> <li>1. Bounce the rear of the vehicle. Use a <b>J 39570</b> Chassis Ear in order to locate the source of the noise.</li> <li>2. Repair or replace the suspect components as necessary.</li> </ol> <p>Did you complete the repair?</p>                                                                                                                          | Go to <b>Step 23</b> | -                                             |
| 5 | <ol style="list-style-type: none"> <li>1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP) .</li> <li>2. Inspect all of the rear suspension components for any damage.</li> </ol> <p>Are any components damaged?</p>                                                                                                            | Go to <b>Step 6</b>  | Go to <b>Step 7</b>                           |
| 6 | Repair or replace any damaged components.<br>Did you complete the repair?                                                                                                                                                                                                                                                                                                                         | Go to <b>Step 23</b> | -                                             |
| 7 | <ol style="list-style-type: none"> <li>1. Inspect the tires for proper inflation. Refer to Vehicle Certification, Tire Placard, Anti-Theft, and Service Parts ID Label . Correct the tire inflation pressure as necessary.</li> <li>2. Inspect the tires for unusual wear. Refer to Tire Diagnosis - Irregular or Premature Wear .</li> </ol> <p>Does either tire exhibit unusual tread wear?</p> | Go to <b>Step 8</b>  | Go to <b>Step 10</b>                          |
| 8 | <ol style="list-style-type: none"> <li>1. Rotate the tires. Refer to Tire Rotation (Directional)Tire Rotation (Non-Directional) .</li> </ol>                                                                                                                                                                                                                                                      | Go to <b>Step 9</b>  | Go to <b>Step 10</b>                          |

|    |                                                                                                                                                                                                                                                                                                                                        |                      |                      |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
|    | <p>2. Road test the vehicle.</p> <p>Is the noise now emitted from the front of the vehicle?</p>                                                                                                                                                                                                                                        |                      |                      |
| 9  | <p>Replace the tires that are causing the noise.</p> <p>Did you complete the repair?</p>                                                                                                                                                                                                                                               | Go to <b>Step 23</b> | -                    |
| 10 | <p>Ensure that the park brake cable and the spare tire are secured properly.</p> <p>Did you service any components?</p>                                                                                                                                                                                                                | Go to <b>Step 23</b> | Go to <b>Step 11</b> |
| 11 | <div style="border: 1px solid black; padding: 10px; margin-bottom: 10px;"> <p><b>CAUTION:</b></p> <p><i>Refer to Fastener Caution .</i></p> </div> <p>Ensure that all of the wheel nuts are tightened to the correct specification. Tighten as necessary. Refer to Fastener Specifications .Did you tighten any of the wheel nuts?</p> | Go to <b>Step 23</b> | Go to <b>Step 12</b> |
| 12 | <p>1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle (Base)Lifting and Jacking the Vehicle (HP) .</p> <p>2. Use your hand to push and pull the shock absorbers.</p> <p>Is either shock absorber loose?</p>                                                                                                    | Go to <b>Step 13</b> | Go to <b>Step 15</b> |
| 13 | <p>1. Inspect the shock absorber fasteners for the correct fastener tightening specification. Tighten as necessary. Refer to Fastener Specifications .</p> <p>2. Use your hands in order to push and pull the shock absorber.</p> <p>Is the shock absorber loose?</p>                                                                  | Go to <b>Step 14</b> | Go to <b>Step 23</b> |
| 14 | <p>Replace the loose or worn shock absorber. Refer to Shock Absorber Replacement .</p> <p>Did you complete the repair?</p>                                                                                                                                                                                                             | Go to <b>Step 23</b> | -                    |
| 15 | <p>Use your hands in order to push and pull on the rear suspension adjustment links.</p> <p>Is the rear suspension adjustment link loose?</p>                                                                                                                                                                                          | Go to <b>Step 16</b> | Go to <b>Step 18</b> |
| 16 | <p>1. Inspect the rear suspension adjustment link fasteners. Tighten as necessary. Refer to Fastener Specifications .</p> <p>2. Use your hands in order to push and pull on</p>                                                                                                                                                        | Go to <b>Step 17</b> | Go to <b>Step 23</b> |

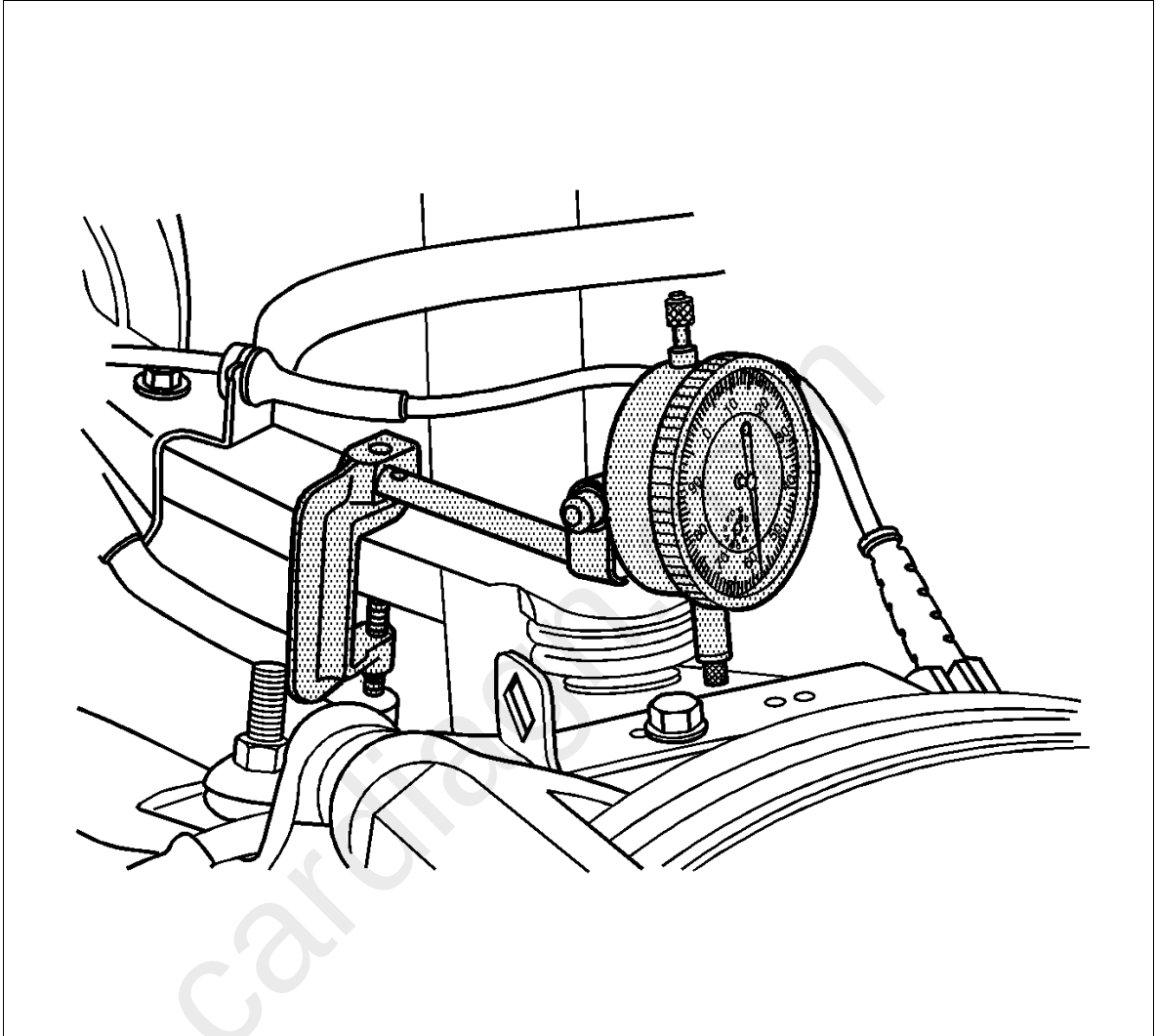
|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                      |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
|    | the rear suspension adjustment link.<br>Is the rear suspension adjustment link loose?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                      |
| 17 | Replace the rear suspension adjustment link as necessary.<br>Did you complete the repair?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Go to <b>Step 23</b> | -                    |
| 18 | Use your hands in order to push and pull on the rear suspension trailing arm.<br>Is either rear suspension trailing arm loose?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Go to <b>Step 19</b> | Go to <b>Step 21</b> |
| 19 | <ol style="list-style-type: none"> <li>1. Inspect the rear suspension trailing arm fasteners for the correct fastener tightening specification. Tighten as necessary. Refer to Fastener Specifications .</li> <li>2. Use your hands in order to push and pull on the rear suspension trailing arm.</li> </ol> Is either rear suspension trailing arm loose?                                                                                                                                                                                                                                                                          | Go to <b>Step 20</b> | Go to <b>Step 23</b> |
| 20 | Replace any worn or loose rear suspension trailing arm bushings.<br>Did you complete the repair?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Go to <b>Step 23</b> | -                    |
| 21 | <ol style="list-style-type: none"> <li>1. Use an on-vehicle wheel balancer in order to spin the rear wheels.</li> <li>2. Increase the wheel speed until the noise is at the most audible level.</li> </ol> <div>  <b>NOTE:</b><br/><i>Do not allow the <b>J 39570</b> Chassis Ear to contact any moving components.</i> </div> <ol style="list-style-type: none"> <li>3. Use a <b>J 39570</b> Chassis Ear in order to locate the source of the noise.</li> </ol> Does either wheel bearing exhibit excessive noise? | Go to <b>Step 22</b> | Go to <b>Step 8</b>  |
| 22 | Replace the wheel bearings. Refer to Rear Wheel Bearing and Hub Replacement .<br>Did you complete the repair?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Go to <b>Step 23</b> | -                    |
| 23 | Operate the vehicle in order to verify the repair.<br>Does the system operate normally?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | System OK            | Go to <b>Step 3</b>  |

## Special Tools

**J-8001** Dial Indicator Set

Equivalent regional tools: Special Tools

Fig 1: Vertical Ball Joint Lash



Courtesy of GENERAL MOTORS COMPANY

### NOTE:

1. The vehicle must rest on a level surface.
2. The vehicle must be stable. Do not rock the vehicle on the floor stands.
3. This procedure was developed for checking the vertical movement of the front lower control link ball joints. If there is movement in the horizontal or any other direction greater than the below specification, replace the front lower control links as necessary.

1. Raise and support the vehicle. Lifting and Jacking the Vehicle (Base)Lifting and Jacking the

Vehicle (HP)

2. Clean and inspect the ball joint seals for cuts or tears. If a ball joint seal is damaged, or any looseness is present, replace the front lower control links and/or steering knuckle assemblies as necessary.
  1. Front Lower Control Front Link Replacement (LGX or LTG, Without V18)Front Lower Control Front Link Replacement (LT1, Without V18)Front Lower Control Front Link Replacement (LGX or LTG, With V18)Front Lower Control Front Link Replacement (LT1, With V18)
  2. Front Lower Control Rear Link Replacement (LGX, LTG)Front Lower Control Rear Link Replacement (LT1)
3. Support the front lower control link with a floor stand as far outboard as possible and raise the suspension until the link moves 25 mm (1 in).
4. Install the **J-8001** dial indicator to measure the vertical lash in the ball joint.



**CAUTION:**

*Do not pry in such a way that the ball joint seal is contacted. Damage to the seal may result.*

5. Apply downward force to the front lower control link and zero the dial indicator.
6. Apply upward force to the front lower control link and check the dial indicator. Record the measurement.
7. If the dial indicator reading is more than 0.50 mm (0.020 in), replace the front lower control link.
8. Perform this procedure for each front lower control link as necessary.

## DIAGNOSTIC INFORMATION AND PROCEDURES > SUSPENSION STRUT AND SHOCK ABSORBER TESTING - ON VEHICLE

| Step | Action                                                                        | Yes                 | No                                            |
|------|-------------------------------------------------------------------------------|---------------------|-----------------------------------------------|
| 1    | Did you review the General Description and perform the necessary inspections? | Go to <b>Step 2</b> | Go to Symptoms - Suspension General Diagnosis |
| 2    | Verify that the malfunction is present.<br>Does the vehicle operate normally? | System OK           | Go to <b>Step 3</b>                           |

|   |                                                                                                                                                                                                                                                                                               |                     |                     |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|
| 3 | <div>  <b>NOTE:</b><br/><br/> <i>A light film of oil on the top portion of the reservoir is normal.</i> </div> <p>Inspect each shock absorber for external fluid leakage. Is the shock absorber leaking?</p> | Go to <b>Step 7</b> | Go to <b>Step 4</b> |
| 4 | <p>Inspect the vehicle trim height. Refer to Trim Height Specifications .<br/>Is the vehicle trim height correct?</p>                                                                                                                                                                         | Go to <b>Step 5</b> | Go to <b>Step 6</b> |
| 5 | <p>1. Use your hands in order to lift up and push down each corner of the vehicle 3 times.<br/>2. Remove your hands from the vehicle.</p> <p>Does the vehicle stop bouncing after 2 cycles?</p>                                                                                               | Go to <b>Step 8</b> | Go to <b>Step 7</b> |
| 6 | <p>Replace the front spring or the rear spring. Refer to the following:</p> <ul style="list-style-type: none"> <li>• Shock Absorber Replacement</li> <li>• Rear Coil Spring Replacement</li> </ul> <p>Did you complete the repair?</p>                                                        | Go to <b>Step 8</b> | -                   |
| 7 | <p>Replace the strut or shock absorber. Refer to the following:</p> <ul style="list-style-type: none"> <li>• Rear Coil Spring Replacement</li> <li>• Shock Absorber Replacement</li> </ul> <p>Did you complete the repair?</p>                                                                | Go to <b>Step 8</b> | -                   |
| 8 | <p>Operate the vehicle in order to verify the repair. Did you correct the condition?</p>                                                                                                                                                                                                      | System OK           | Go to <b>Step 3</b> |

## DIAGNOSTIC INFORMATION AND PROCEDURES > WHEEL BEARINGS DIAGNOSIS

| Step | Action                                                                        | Values | Yes                 | No                                  |
|------|-------------------------------------------------------------------------------|--------|---------------------|-------------------------------------|
| 1    | Did you review the General Description and perform the necessary inspections? | -      | Go to <b>Step 2</b> | Go to Symptoms - Suspension General |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |                     | Diagnosis           |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---------------------|---------------------|
| 2 | <p>1. Install the <b>J 39570</b> Chassis Ear.</p> <div>  <b>IMPORTANT:</b><br/> <i>A noise heard during left turns is a good indicator of a noisy right wheel bearing. A noise heard during right turns is a good indicator of a noisy left wheel bearing.</i> </div> <p>2. Road test the vehicle to verify the location of the noise. Drive the vehicle on a smooth road at a moderate speed range. While driving, turn the wheel to the left and the right to apply loads to each wheel corner.</p> <p>Is the noise present at the wheel bearing?</p> | 48-72 kph<br>(30-45 mph) |                     |                     |
| 3 | <p>1. Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle (Base) Lifting and Jacking the Vehicle (HP) .</p> <p>2. Remove the tire and wheel. Refer to Tire and Wheel Removal and Installation .</p> <p>3. Ensure the wheel drive shaft nut is properly tightened. Refer to Fastener Specifications .</p> <p>Are the nuts fastened to the correct specified value?</p>                                                                                                                                                                                                                                                | -                        | Go to <b>Step 7</b> | Go to <b>Step 3</b> |
| 4 | <div>  <b>IMPORTANT:</b><br/> <i>Support the vehicle by the lower control arms or the rear axle to prevent movement during wheel bearing/hub inspection.</i> </div> <p>1. Mount and secure the <b>J 8001</b> Dial Indicator to the steering knuckle.</p>                                                                                                                                                                                                                                                                                              | 0.127 mm<br>(0.005 in)   | Go to <b>Step 7</b> | Go to <b>Step 5</b> |

|   |                                                                                                                                                                                                                                                                                                                                                                                            |   |                     |                     |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------|---------------------|
|   | <p>2. Firmly push the hub flange towards the vehicle.</p> <p>3. Ensure that the dial indicator contacts the vertical surface of the hub as close as possible to the center of the flange.</p> <p>4. Firmly pull the hub flange away from the vehicle in order to inspect the total travel indicator by the dial indicator.</p> <p>Is the measurement greater than the specified value?</p> |   |                     |                     |
| 5 | <p>Inspect for tire or wheel damage. Refer to Tire and Wheel Assembly Runout Measurement - On-Vehicle .</p> <p>Did you find and correct the condition?</p>                                                                                                                                                                                                                                 |   | Go to <b>Step 9</b> | Go to <b>Step 6</b> |
| 6 | <p>Inspect the front and/or rear suspension. Refer to Noise Diagnosis - Front Suspension , or Noise Diagnosis - Rear Suspension .</p> <p>Did you find and correct the condition?</p>                                                                                                                                                                                                       | - | Go to <b>Step 9</b> | Go to <b>Step 2</b> |
| 7 | <p>Replace the wheel bearing. Refer to Front Wheel Bearing and Hub Replacement (LGX, LTG)Front Wheel Bearing and Hub Replacement (LT1) , or Rear Wheel Bearing and Hub Replacement .</p> <p>Did you complete the repair?</p>                                                                                                                                                               | - | Go to <b>Step 9</b> | -                   |
| 8 | <p>Remove the old wheel drive shaft nut and install a NEW wheel drive shaft nut. Tighten to the specified value. Refer to Fastener Specifications .</p> <p>Did you complete the repair?</p>                                                                                                                                                                                                | - | Go to <b>Step 9</b> | -                   |
| 9 | <p>Road test the vehicle to verify the repair.</p> <p>Does the vehicle operate normally?</p>                                                                                                                                                                                                                                                                                               | - | System OK           | Go to <b>Step 3</b> |

## DIAGNOSTIC INFORMATION AND PROCEDURES > TRIM HEIGHT INSPECTION > TRIM HEIGHT MEASUREMENT

Trim height is a predetermined measurement relating to vehicle ride height. Incorrect trim heights can cause the vehicle to bottom out over bumps, damage to the suspension components and symptoms similar to wheel alignment problems. Check the trim heights when diagnosing suspension concerns and before checking the wheel alignment.

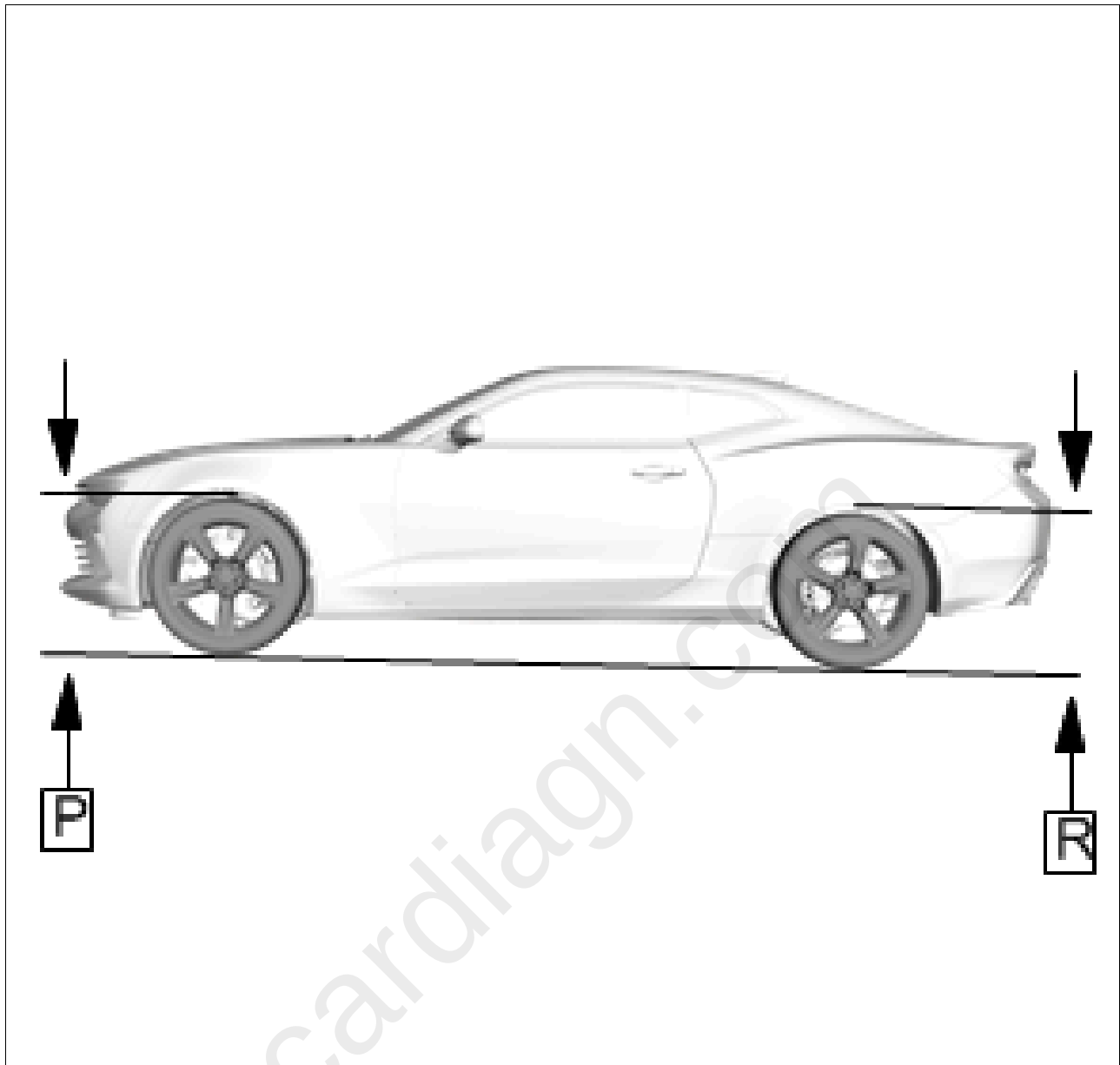
Perform the following before measuring the trim heights:

- Set the tire pressure to the specifications shown on the certification label. Vehicle Certification, Tire Placard, Anti-Theft, and Service Parts ID Label

- Check the fuel level. Add additional weight if necessary to simulate a full tank.
- Make sure the passenger and rear compartments are empty, except for the spare tire.
- Make sure the vehicle is on a flat and level surface, such as an alignment rack.
- Check that all the vehicle doors are securely closed.
- Check that the vehicle hood and rear deck lids are securely closed.
- Check for installed after market accessories or modifications that could affect trim height measurement:
  - Larger or Smaller than production wheels and tires.
  - Lifting or Lowering Kits
  - Wheel Opening Flares or Ground Affects

## **DIAGNOSTIC INFORMATION AND PROCEDURES > TRIM HEIGHT INSPECTION > MEASURING THE P AND R DIMENSION**

Fig 1: P And R Dimension



Courtesy of GENERAL MOTORS COMPANY

### Measurement Definitions

**P Height:** The vertical distance from the ground to the top of the wheel opening through the center line of the front wheel.

**R Height:** The vertical distance from the ground to the top of the wheel opening through the center line of the rear wheel.

Use the following procedures to measure the P and R dimensions:



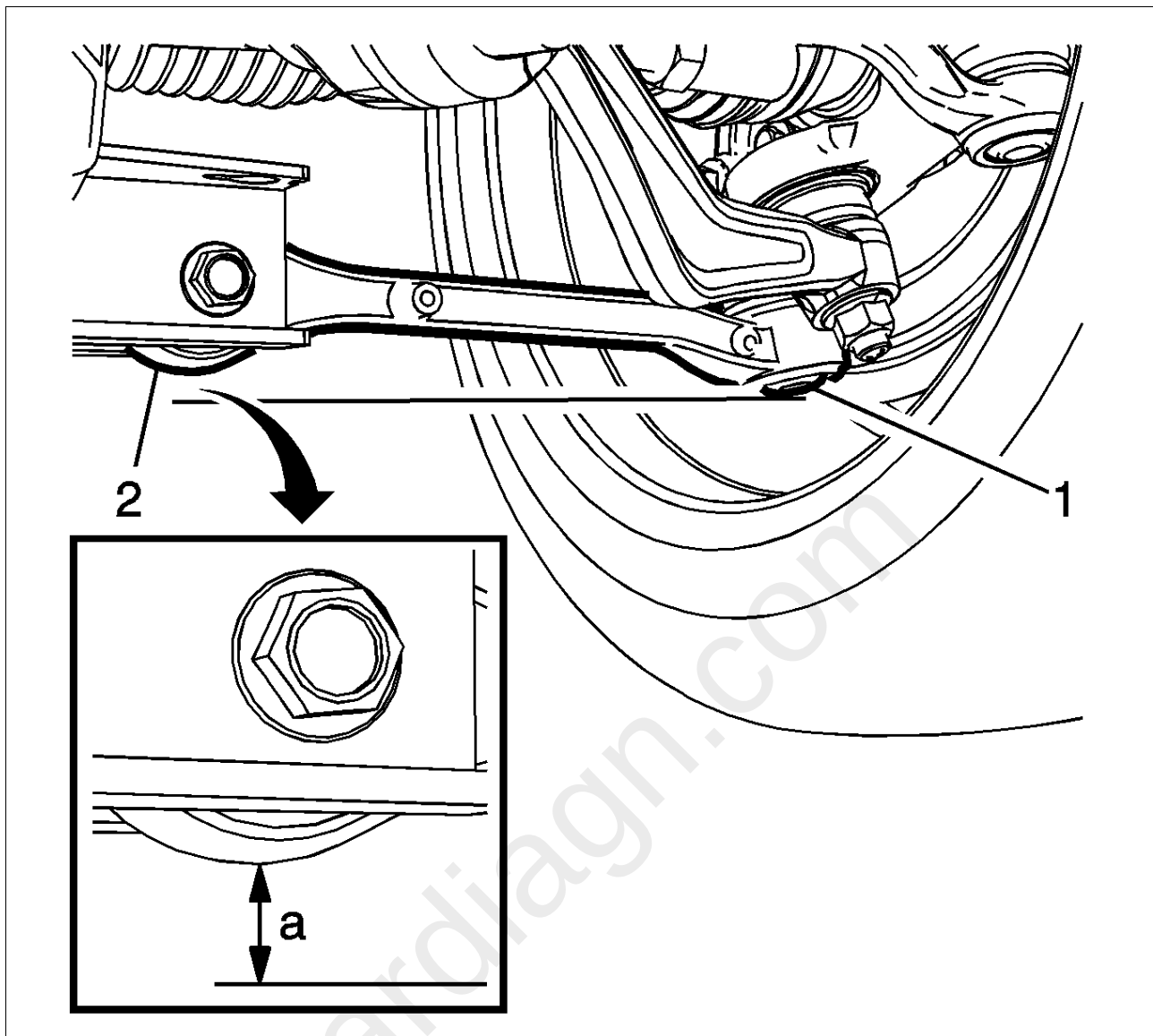
**NOTE:**

*The left and right P and R height differences should be no more than 10 mm (.39 in).*

1. Push the front bumper down a minimum of 25 mm (1 in), and release. Perform this step three times.
2. Measure and record the trim height per the "Measurement Definitions" above.
3. Lift the bumper up a minimum of 25 mm (1 in), and release. Perform this step three times.
4. Measure and record the trim height per the "Measurement Definitions" above.
5. The true P height measurement is the average of the measurements taken in step 2 & 4. Trim Height Specifications
6. Repeat the above steps at the rear of the vehicle for the R heights.
7. For the modified R height measurement, refer to Trim Height Specifications
8. If the P and R heights are outside of the specifications, measure the Z & D heights.

**DIAGNOSTIC INFORMATION AND PROCEDURES > TRIM HEIGHT INSPECTION >  
MEASURING THE Z DIMENSION**

Fig 1: Z Dimension



Courtesy of GENERAL MOTORS COMPANY

### Measurement Definitions

**Z Height:** The vertical distance (a) between the lowest point of the bushing hoop (2) on the front suspension to the center of the ball joint (1).

Use the following procedures to measure the Z dimensions:

 **NOTE:**

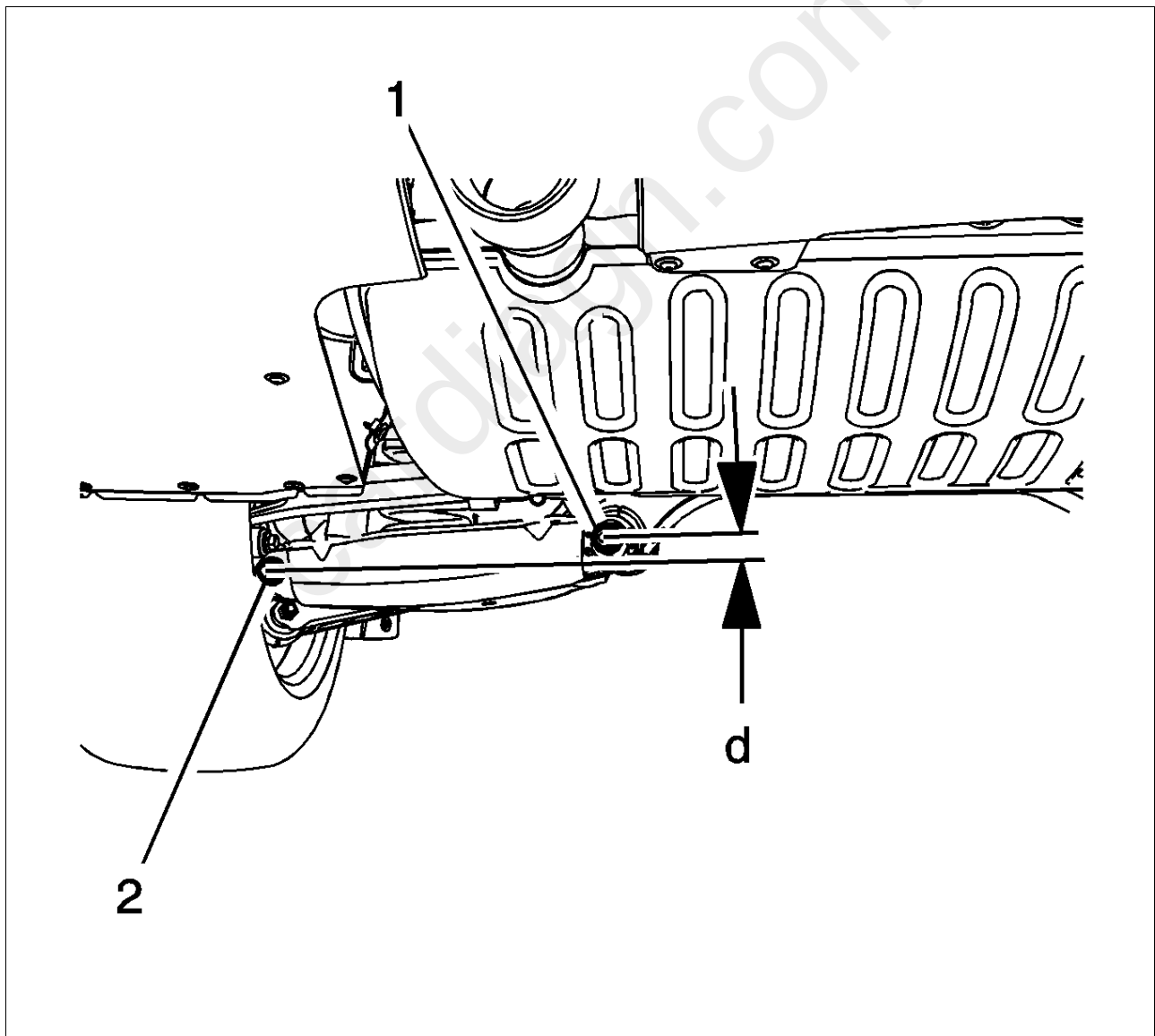
*The left and right Z height differences should be no more than 10 mm (.39 in).*

1. Push the front bumper down a minimum of 25 mm (1 in). Perform this step three times.
2. Measure and record the trim height per the "Measurement Definitions" above.

3. Lift the front bumper a minimum of 25 mm (1 in). Perform this step three times.
4. Measure and record the trim height per the "Measurement Definitions" above.
5. The true Z height dimension is the average of the measurements taken in steps 2 & 4. Trim Height Specifications
6. If these measurements are out of specifications, inspect for the following conditions:
  1. Worn or damaged suspension components
  2. Collision damage

## DIAGNOSTIC INFORMATION AND PROCEDURES > TRIM HEIGHT INSPECTION > D HEIGHT MEASUREMENT

Fig 1: D Height Measurement



## Measurement Definitions

D Height: The vertical distance between the center of the inner lower control arm bolt (1) to the center of the outer lower control arm bolt (2).

Use the following procedure to check the D dimension:

 **NOTE:**

*The left and right D height difference should be no more than 10 mm (.39 in).*

1. Push the rear bumper down a minimum of 25 mm (1 in). Perform this step three times.
2. Measure and record the trim height per the "Measurement Definitions" above.
3. Lift the rear bumper up a minimum of 25 mm (1 in), and release. Perform this step three times.
4. Measure and record the trim height per the "Measurement Definitions" above.
5. The true D height is the average of the measurements taken in steps 2 & 4. Trim Height Specifications
6. If these measurements are out of specifications, inspect for the following conditions:
  1. Worn or damaged suspension components
  2. Collision damage