

2007 Cadillac Escalade

2007 SUSPENSION Suspension General Diagnosis - Avalanche, Escalade, Suburban, Tahoe & Yukon

2007 SUSPENSION

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SPECIFICATIONS

TRIM HEIGHT SPECIFICATIONS

Trim Height Specifications

Model	Option	Service Allowed	Service Preferred
Z Trim Height All 1500 specs are ± 14 mm/2500 specs are ± 6 mm.			
C1500 Tahoe/Yukon	All	77-105 mm (3.0-4.1 in)	91 mm (3.6 in)
C1500 Suburban, Yukon XL	All	77-105 mm (3.0-4.1 in)	91 mm (3.6 in)
C1500 Escalade	All	77-105 mm (3.0-4.1 in)	91 mm (3.6 in)
C1500 Avalanche	All	77-105 mm (3.0-4.1 in)	91 mm (3.6 in)
C1500 Tahoe/Yukon	W/Z56 and PPV	70-98 mm (2.8-3.9 in)	84 mm (3.3 in)
K1500 Tahoe/Yukon	All	87-115 mm (3.4-4.5 in)	101 mm (4.0 in)
K1500 Suburban, Yukon XL	All	87-115 mm (3.4-4.5 in)	101 mm (4.0 in)
K1500 Escalade, Escalade ESV	All	87-115 mm (3.4-4.5 in)	101 mm (4.0 in)
K1500 Avalanche, Escalade EXT	All	87-115 mm (3.4-4.5 in)	101 mm (4.0 in)
C/K2500 Suburban, Yukon XL	All	110-122 mm (4.3-4.8 in)	116 mm (4.5 in)

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC STARTING POINT - SUSPENSION GENERAL DIAGNOSIS

Begin the system diagnosis by reviewing the system Description and Operation. Reviewing the Description and Operation information will help you determine the correct symptom diagnostic procedure when a malfunction exists. Reviewing the Description and Operation information, and the vehicle RPO, will also help you determine if the condition described by the customer is normal operation. Refer to **Symptoms - Suspension General Diagnosis** in order to identify the correct procedure for diagnosing the system and where the procedure is located.

SYMPTOMS - SUSPENSION GENERAL DIAGNOSIS

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

1. Review the system description and operation in order to familiarize yourself with the system functions.
2. Refer to the appropriate description and operation:
 - General Description
 - General Description
 - General Description

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 Label - Vehicle Certification, Tire Place Card, Anti-Theft and Service Parts ID .

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
- Ball Joint Inspection (Lower Ball Joint) or Ball Joint Inspection (Upper Ball Joint)
- Struts or Shock Absorbers Testing - On Vehicle
- Wheel Bearings Diagnosis
- Radial Tire Lead/Pull Correction

RIDE DIAGNOSIS

Ride Diagnosis

Step	Action	Yes	No
1	Did you review the General Description and perform the necessary inspections?	Go to Step 2	Go to <u>Symptoms - Suspension General Diagnosis</u>
	IMPORTANT: Verify the vehicle suspension package RPO.		

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2	Verify that the ride is too soft or too hard. Does the vehicle ride normally?	System OK	Go to Step 3
3	Check the tire inflation and adjust to specifications. Refer to <u>Label - Vehicle Certification, Tire Placard, Anti-Theft and Service Parts ID</u> . Did you adjust the tire pressure?	Go to Step 6	Go to Step 4
4	Inspect the vehicle trim height. Refer to <u>Trim Height Inspection</u> . Did you find and correct the condition?	Go to Step 6	Go to Step 5
5	Inspect the following suspension components for wear or damage: • Shock Absorbers-Refer to <u>Struts or Shock Absorbers Testing - On Vehicle</u>. • Springs Did you find and correct the condition?	Go to Step 6	-
6	Drive the vehicle in order to verify the repair. Did you correct the condition?	System OK	Go to Step 3

VEHICLE LEADS/PULLS

Vehicle Leads/Pulls

Step	Action	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 Step 2	Go to <u>Symptoms - Suspension General Diagnosis</u>
2	Road test the vehicle in order to verify the complaint. Does the vehicle operate normally?	System OK	Go to Step 3
3	Inspect the tire/wheel assemblies for the following: • Correct tire pressure-Refer to the tire placard. • Correct tire size-Refer to the tire placard. • Abnormal tire wear or damage		

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	Did you find and correct the condition?	Go to Step 9	Go to Step 4
4	Perform the Radial Tire Lead/Pull Correction . Did you find and correct the condition?	Go to Step 9	Go to Step 5
5	Inspect and correct/adjust the suspension and steering systems for the following: • Vehicle trim height-Refer to Trim Height Specifications. • Excessively worn, loose, or damaged components Did you find and correct the condition?	Go to Step 9	Go to Step 6
6	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. Refer to Diagnostic Starting Point - Disc Brakes . Did you find and correct the condition?	Go to Step 9	Go to Step 7
7	Inspect the wheel alignment and adjust as necessary. Refer to Measuring Wheel Alignment . Did you correct the condition?	Go to Step 9	Go to Step 8
8	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 condition exists, replace the steering gear. Did you correct the condition?	System OK	Go to Step 3
9	Operate the vehicle in order to verify the repair. Did you correct the condition?	System OK	Go to Step 3

BODY LEANS OR SWAYS IN CORNERS

Body Leans or Sways in Corners

Step	Action	Yes	No
1	Did you review the General Description and perform the necessary inspections?	Go to Step 2	Go to Symptoms - Suspension General Diagnosis
2	Verify the vehicle leans or sways in corners. Does the vehicle operate normally?	System OK	Go to Step 3
	Inspect the following components for		

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3	wear or damage: • Rear Coil Springs • Front Coil Springs		
	Are the components worn or damaged?	Go to Step 5	Go to Step 4
4	1. Inspect the stabilizer shaft link for wear or damage. 2. Repair as necessary.		
	Did you find and correct the condition?	Go to Step 6	Go to Step 2
5	Replace the springs as necessary. Did you complete the repair?	Go to Step 6	-
6	Operate the vehicle in order to verify the repair. Did you correct the condition?	System OK	Go to Step 3

SUSPENSION BOTTOMS

Suspension Bottoms

Step	Action	Yes	No
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.			
1	Did you review the General Description and perform the necessary inspections?	Go to Step 2	Go to Symptoms - Suspension General Diagnosis
2	Verify that the suspension bottoms. Does the vehicle operate normally?	System OK	Go to Step 3
3	Inspect for vehicle overloading and correct the overloading condition as necessary. Refer to Label - Vehicle Certification, Tire Place Card, Anti-Theft and Service Parts ID . Did you find and correct the condition?	Go to Step 6	Go to Step 4
4	Inspect the following components: • Inspect the shock absorbers. Refer to Struts or Shock Absorbers Testing - On Vehicle. • Inspect for damaged coil springs, torsion bar or leaf springs and replace as necessary.		

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	Did you find and correct the condition?	Go to Step 6	Go to Step 5
5	Inspect the vehicle trim height. Refer to <u>Trim Height Inspection</u> . Did you complete the trim height inspection procedure?	Go to Step 6	-
6	Operate the vehicle in order to verify the repair. Did you correct the condition?	System OK	Go to Step 3

MEMORY STEER

Memory Steer

Step	Action	Yes	No
DEFINITION: A lead or pull in the direction the driver previously turned the vehicle. Additionally, after turning in the opposite direction, the vehicle will want to lead or pull in that direction.			
1	Did you review the General Description and perform the necessary inspections?	Go to step 2	Go to <u>Symptoms - Suspension General Diagnosis</u>
2	Verify that memory steer is present. Does the system operate normally?	System OK	Go to Step 3
3	1. Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> in General Information. 2. Lubricate the tie rod ends and the ball joints if applicable. 3. Inspect the suspension system for worn or damaged components. 4. Repair as necessary. Did you find and correct the condition?	Go to Step 7	Go to Step 4
4	Inspect for binding strut bearings. 1. Disconnect the strut from the steering knuckle. 2. If the strut is abnormally difficult to rotate, repair or replace the upper bearing mount. Did you find and complete the repair?	Go to Step 7	Go to Step 5
5	Inspect for binding in the lower ball joints. If joint is binding, replace the joint. Did you find and complete the repair?	Go to Step 7	Go to Step 6
	Inspect the wheel alignment and adjust		

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6	as necessary. Refer to Measuring Wheel Alignment in Wheel Alignment. Did you complete the wheel alignment?	Go to Step 7	-
7	Operate the vehicle in order to verify the repair. Did you correct the condition?	System OK	-

NOISE DIAGNOSIS - FRONT SUSPENSION

Noise Diagnosis - Front 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?	Go to Step 2	Go to Symptoms - Suspension General Diagnosis
2	Attempt to duplicate the condition. Road test the vehicle. Did you duplicate the condition?	Go to Step 3	System OK
3	Is the noise reactive to vehicle load or speed?	Go to Step 4	Go to Step 7
4	Inspect the tires for the following conditions: • Proper Tire Inflation and Adjust as Necessary-Refer to Label - Vehicle Certification, Tire Place Card, Anti-Theft and Service Parts ID . • Unusual Tire Wear-Refer to Vibration Analysis - Tire and Wheel . • Inspect the wheel nuts for looseness and tighten as necessary. Refer to Fastener Tightening Specifications . Did you find and correct the condition?	Go to Step 14	Go to Step 5
5	Inspect the front wheel bearings. Refer to Wheel Bearings Diagnosis . Did you find and correct the condition?	Go to Step 14	Go to Step 6
6	Inspect for front axle noises. Refer to Symptoms - Front Drive Axle . Did you find and correct the condition?	Go to Step 14	Go to Step 7
7	Bounce the front of the vehicle in order to duplicate the noise.		

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	Did you duplicate the noise?	Go to Step 8	Go to Step 9
8	1. Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u>. 2. Inspect the front suspension components for looseness. Refer to <u>Fastener Tightening Specifications</u>. 3. Inspect the front suspension components for damage and repair as necessary.		
	Did you find and correct the condition?	Go to Step 14	Go to Step 9
9	1. Install the J 39570 Chassis Ear or equivalent. 2. Bounce the front of the vehicle, using the J 39570 or equivalent in order to locate the source of the noise. If necessary, road test the vehicle. 3. Repair or replace any damaged components, as necessary.		
	Did you find and correct the condition?	Go to Step 14	Go to Step 10
10	Inspect the ball joints and steering components for the following conditions: • Lack of lubrication where applicable • Looseness in the Ball Joints-Refer to <u>Ball Joint Inspection (Lower Ball Joint)</u> or <u>Ball Joint Inspection (Upper Ball Joint)</u>. • Looseness in the Steering Linkage-Refer to <u>Steering Linkage Inspection</u>. • Looseness in the Tie Rods-Refer to <u>Tie Rod Replacement - Outer</u>.		
	Did you find and correct the condition?	Go to Step 14	Go to Step 11
11	Inspect for damaged shock absorbers. Refer to <u>Struts or Shock Absorbers Testing - On Vehicle</u>.		
	Did you find and correct the condition?	Go to Step 14	Go to Step 12
	Inspect the front stabilizer shaft and stabilizer shaft links for damage and repair		

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12	as necessary. Refer to <u>Stabilizer Shaft Replacement (1500 Series)</u> or <u>Stabilizer Shaft Replacement (2500 Series)</u> or <u>Stabilizer Shaft Link Replacement (1500 Series)</u> or <u>Stabilizer Shaft Link Replacement (2500 Series)</u> . Did you find and correct the condition?	Go to Step 14	Go to Step 13
13	Inspect for control arm damage and repair as necessary. Refer to <u>Lower Control Arm Replacement (1500 Series)</u> or <u>Lower Control Arm Replacement (2500 Series)</u> and <u>Upper Control Arm Replacement (1500 Series)</u> or <u>Upper Control Arm Replacement (2500 Series)</u> . Did you find and correct the condition?	Go to Step 14	-
14	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 3

NOISE DIAGNOSIS - REAR SUSPENSION

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 Step 2	Go to <u>Symptoms - Suspension General Diagnosis</u>
2	Attempt to duplicate the condition. Road test the vehicle. Did you duplicate the condition?	Go to Step 3	System OK
3	Is the noise reactive to vehicle load or speed?	Go to Step 4	Go to Step 6
4	Perform the following inspections: - Inspect and adjust the tire inflation. Refer to <u>Label - Vehicle Certification, Tire Place Card, Anti-Theft and Service Parts ID</u> . - Inspect for unusual tire wear. Refer to <u>Vibration Analysis - Tire and Wheel</u> . - Inspect the wheel nuts for looseness. Refer to <u>Fastener Tightening Specifications</u> .		

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	Did you find and correct the condition?	Go to Step 10	Go to Step 5
5	Inspect the rear axle for rear axle noises. Refer to <u>Symptoms - Rear Drive Axle</u> . Did you find and correct the condition?	Go to Step 10	Go to Step 6
6	Bounce the rear of the vehicle in order to duplicate the noise. Did you duplicate the noise?	Go to Step 7	Go to Step 9
7	1. Raise the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u>. 2. Inspect the rear suspension components for looseness and tighten as necessary. Refer to <u>Fastener Tightening Specifications</u>. 3. Inspect the rear suspension components for damage and repair as necessary. Did you find and correct the condition?	Go to Step 10	Go to Step 8
8	Inspect the rear shock absorber. Refer to <u>Struts or Shock Absorbers Testing - On Vehicle</u> . Did you complete the inspection?	Go to Step 10	Go to Step 9
9	1. Install the J 39570 Chassis Ear or equivalent. 2. Bounce the rear of the vehicle, using the J 39570 or equivalent, in order to locate the source of the noise. If necessary, road test the vehicle. 3. Repair or replace any defective component as necessary. Did you find and correct the condition?	Go to Step 10	System OK
10	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 3

BALL JOINT INSPECTION (LOWER BALL JOINT)

Tools Required

J 8001 Dial Indicator Set

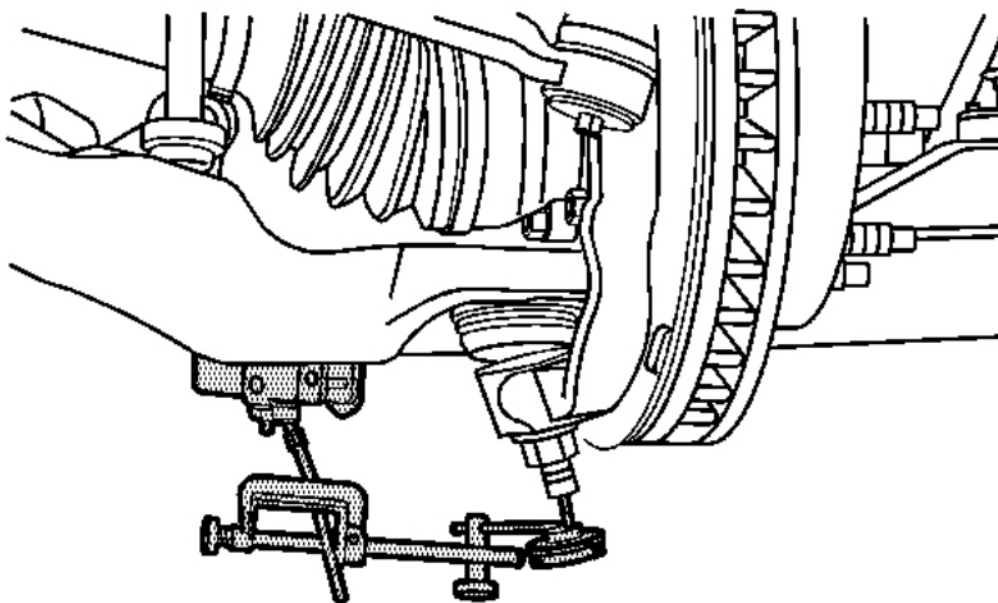


Fig. 1: View Of Dial Indicator Installed Against The End Of Lower Ball Joint
Courtesy of GENERAL MOTORS CORP.

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.
2. With the wheel and tire on the vehicle, lift the suspension corner by hand to determine if any looseness is present. If vertical free play is experienced proceed with the following instructions.
3. Remove the wheel and tire. Refer to **Tire and Wheel Removal and Installation** in Tires and Wheels.
4. Clean and inspect the ball joint seals for cuts or tears. If the ball joint seals are damaged, replace the ball joint. Refer to **Lower Ball Joint Replacement (2500 Series)** in Front Suspension.
5. Install and position the dial indicator from J 8001 against the end of the ball joint.

IMPORTANT: Do not pry between the lower arm and the wheel drive shaft boot or in such a manner that the ball joint seal is contacted. Damage to the wheel drive shaft boot will result (4WD).

6. Gently lift or pry the suspension upward then let it settle.
7. The dial indicator reading should be no more than 2 mm (0.079 in). If the reading is out of specification, replace the ball joint.

BALL JOINT INSPECTION (UPPER BALL JOINT)

Tools Required

J 8001 Dial Indicator Set

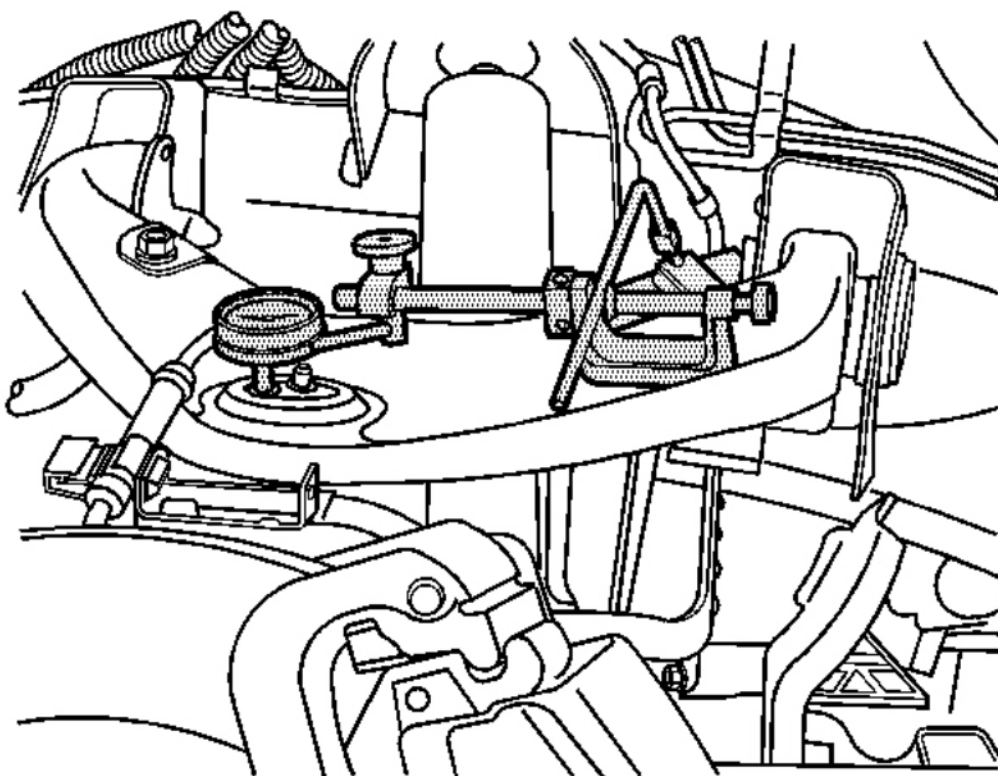


Fig. 2: View Of Dial Indicator Installed Against The End Of Upper Ball Joint
Courtesy of GENERAL MOTORS CORP.

1. Raise and support the vehicle. Refer to **Lifting and Jacking the Vehicle** in General Information.
2. With the wheel and tire on the vehicle, lift the suspension corner by hand to determine if any looseness is present. If vertical free play is experienced proceed with the following instructions.
3. Remove the wheel and tire. Refer to **Tire and Wheel Removal and Installation** in Tires and Wheels.
4. Support the lower control arm with a floor stand or jack, as far outboard as possible.
5. If a seal is cut or torn, replace the ball joint.
6. Clean and inspect the ball joint seals for cuts or tears. If the ball joint seals are damaged, replace the ball joint. Refer to **Upper Control Arm Replacement (1500 Series)** or **Upper Control Arm Replacement (2500 Series)** in Front Suspension.
7. Check the wheel bearing for looseness in the wheel bearing is present, refer to **Wheel Bearings**

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Diagnosis.

8. Check the upper ball joint for vertical looseness.
9. Remove the lower shock absorber mounting bolt. This will ensure that the suspension is unloaded.
10. Install and position the dial indicator from **J 8001** against the rim of the upper ball joint.
11. Apply downward force to the upper control arm and zero the indicator pointer/pad against the rim of the upper ball joint.
12. Release the arm and check the dial indicator. The dial indicator reading should be no more than 2 mm (0.079 in). If the reading is too high, replace the upper control arm. Refer to **Upper Control Arm Replacement (1500 Series)** or **Upper Control Arm Replacement (2500 Series)** in Front Suspension.

STRUTS OR SHOCK ABSORBERS TESTING - ON VEHICLE

Struts or Shock Absorbers Testing - On Vehicle

Step	Action	Yes	No
1	Did you review the General Description and perform the necessary inspections?	Go to Step 2	Go to <u>Symptoms - Suspension General Diagnosis</u>
2	Verify that the customer's concern is present. Does the vehicle operate normally?	System OK	Go to Step 3
3	IMPORTANT: A light film of oil on the top portion of the shock reservoir is normal. Inspect each strut or shock absorber for external fluid leakage. Is a strut or shock absorber leaking?	Go to Step 5	Go to Step 4
4	1. Use your hands in order to lift up and push down each corner of the vehicle 3 times. 2. Remove your hands from the vehicle. 3. Locate a shock or strut that exceeds 2 cycles. Did you locate a shock or strut that exceeds 2 cycles?	Go to Step 5	Go to Step 6
5	IMPORTANT: Inspect the vehicle trim height in order to correct any possible causes of shock/strut failures. Refer to <u>Trim Height Inspection</u>. Replace the strut or shock absorber. Refer to <u>Shock Absorber Replacement (2500 Series)</u> in Front Suspension or <u>Shock</u>		

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	<u>Absorber Replacement (1500 Series)</u> or <u>Shock Absorber Replacement (2500 Series)</u> in Rear Suspension. Did you complete the repair?	Go to Step 6	-
6	Operate the vehicle in order to verify the repair. Did you correct the condition?	System OK	Go to Step 3

WHEEL BEARINGS DIAGNOSIS

Wheel Bearings Diagnosis

Step	Action	Values	Yes	No
1	Did you review the General Description and perform the necessary inspections?	-	Go to Step 2	Go to <u>Symptoms - Suspension General Diagnosis</u>
2	Road test the vehicle in order to verify the customer's complaint. Does the vehicle operate normally?	-	System OK	Go to Step 3
3	1. Raise and support the vehicle. Refer to <u>Lifting and Jacking the Vehicle</u> in General Information. 2. Inspect for tire or wheel damage. Refer to <u>Tire and Wheel Assembly Runout Measurement - On-Vehicle</u> in Vibration Diagnosis and Correction. Did you find and correct the condition?	-	Go to Step 7	Go to Step 4
4	1. Install the J 39570 chassis ear. 2. Road test the vehicle to verify the location of the wheel bearing noise. Did you locate the source of the wheel bearing noise?	-	Go to Step 6	Go to Step 5
5	IMPORTANT: Support the vehicle by the lower control arms or the rear axle to prevent movement during wheel bearing/hub inspection. 1. Mount and secure the J 8001 dial indicator. 2. Ensure that the dial indicator	0.27 mm		

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	contacts the vertical surface of the wheel as close as possible to the top wheel stud. 3. Push and pull on the top of the tire in order to inspect the total travel indicated by the dial indicator. Is the measurement greater then the specified value?	(0.005 in)	Go to Step 6	System OK
6	Replace the wheel bearing. Refer to <u>Wheel Hub, Bearing, and Seal Replacement (1500 Series)</u> or <u>Wheel Hub, Bearing, and Seal Replacement (2500 Series)</u> in Front Suspension. Did you complete the repair?	-	Go to Step 7	-
7	Road test the vehicle to verify the repair. Does the vehicle operate normally?	-	System OK	Go to Step 3

TRIM HEIGHT INSPECTION

Trim Height Measurements

Trim height is a predetermined measurement relating to vehicle ride height. Incorrect trim heights can cause bottoming 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:

- Ensure the vehicle is on a level surface, such as an alignment rack.
- Ensure that the suspension is fully supporting the vehicle.
- Remove the alignment rack floating pins.
- Set the tire pressures to the pressure shown on the certification label. Refer to **Label - Vehicle Certification, Tire Place Card, Anti-Theft and Service Parts ID** .
- Inspect the fuel level. Add additional weight if necessary to simulate a full tank.
- To ensure proper weight distribution make sure the rear storage compartment is empty.
- Close all doors, lift gate/trunk and the hood.

Z Height Measurement

IMPORTANT: K models only-The Z height must be adjusted before the alignment.

The Z height dimension measurement determines the proper ride height for the front end of the vehicle. Vehicles equipped with torsion bars use a adjusting arm in order to adjust the Z height dimension. Vehicles

without torsion bars have no adjustment and could require replacement of suspension components.

IMPORTANT: All dimensions are measured vertical to ground. Cross vehicle Z heights should be within 12 mm (0.47 in) to be considered correct.

1. Jounce the front and rear suspension to obtain at least 38 mm (1.5 in) deflection, then allow the vehicle to settle.

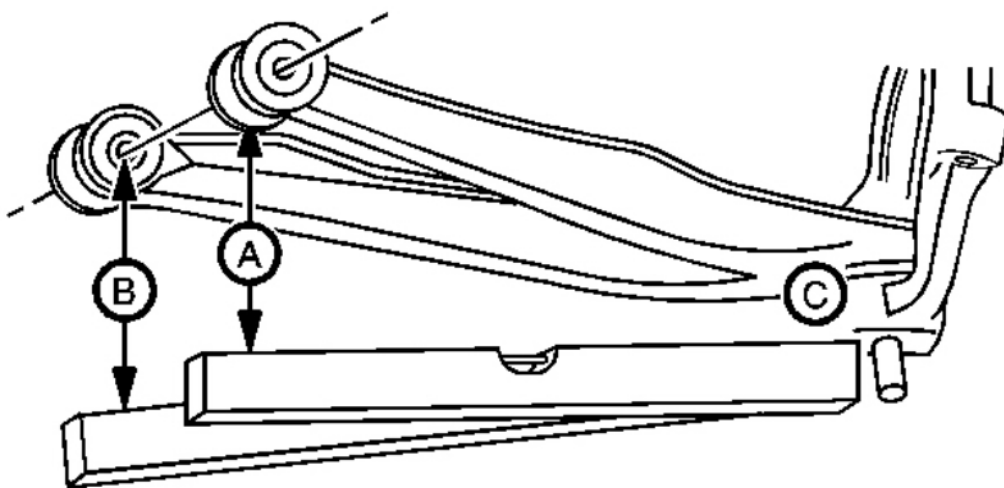


Fig. 3: Z Height Measurement

Courtesy of GENERAL MOTORS CORP.

2. Set the top edge of the level on the reference surface of the steering knuckle (C) and extend the level directly under the rear end of the front attachment bolt of the lower control arm (A).
3. While keeping the level in contact with the knuckle reference surface, adjust the level up/down until the bubble indicates it is horizontally level.
4. Extend a tape measure straight down from the center of the attachment bolt. The point where the tape measure and the level intersect is your first measurement.
5. Keep the top edge of the level on the reference surface of the steering knuckle (C) and move the level directly under the front end of the rear attachment bolt of the lower control arm (B).
6. Extend a tape measure straight down from the center of the attachment bolt. The point where the tape measure and the level intersect is your second measurement.
7. Average the 2 readings (add them together, then divide by 2) and write down the result.
8. Repeat steps 1 through 7 a total of 3 times, writing down the results.
9. Average the results (add them together, then divide by 3) and this result is your final Z height number.

10. Compare your Z height number with the Service Information Z height specification. Refer to **Trim Height Specifications**.

Z Height Adjustment

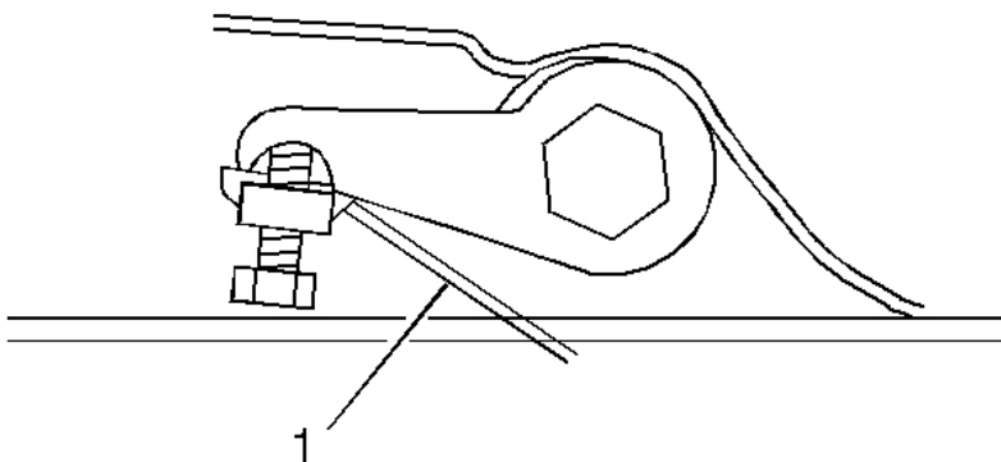


Fig. 4: Adjusting Z Height

Courtesy of GENERAL MOTORS CORP.

1. For vehicles equipped with a torsion bar suspension, turn the bolt (1) that contacts the torsion arm as needed. One revolution of the bolt (1) into the nut increases the Z height by approximately 6 mm (0.2 in).
2. For vehicles without torsion bars, replace damaged or worn components as necessary.
3. If these measurements are still out of specifications after adjustment or are not equipped with torsion bars, inspect for the following:
 - Sagging front suspension-Refer to **Torsion Bar Replacement (2500 Series)** .
 - Collision damage

D Height Measurement

IMPORTANT: There are no specified trim heights specifications on leaf spring vehicles because it is not an adjustable feature. The height of the suspension will depend on the option content of the vehicle as well as the aftermarket equipment that is placed on the vehicle. The measurements are used for comparison only and should be within 15 mm with the vehicle at curb and no accessories.

1. Place a hand on the rear bumper and jounce the rear of the vehicle. Ensure that there is at least 38 mm

(1.5 in) of movement while jouncing.

2. With the vehicle on a flat surface, lift upward on the rear bumper 38 mm (1.5 in).
3. Allow the vehicle to settle into position.

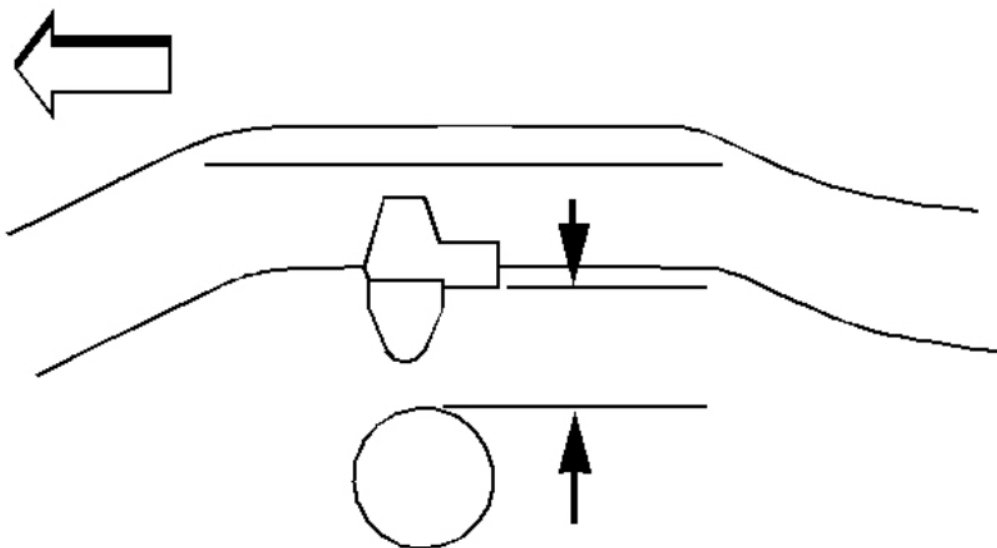


Fig. 5: Measuring Rear D Height

Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Measure the metal to metal contact points of the rear axle to the frame on the inboard side of the leaf springs.

4. Measure the D height by measuring the distance between the bumper bracket and the top of the rear axle tube.
5. Repeat the jouncing operation 2 more times for a total of 3 times.
6. Use the highest and lowest measurements to calculate the average height.
7. The true D height dimension number is the average of the highest and the lowest measurements.
8. If these measurements are out of specifications, inspect for the following conditions:
 - Sagging front suspension-Refer to **Torsion Bar Replacement (2500 Series)** .
 - Sagging rear leaf/coil springs-Refer to **Coil Spring Replacement** .
 - Improper tire inflation-Refer to **Label - Vehicle Certification, Tire Place Card, Anti-Theft and Service Parts ID** .
 - Improper weight distribution

2007 Cadillac Escalade

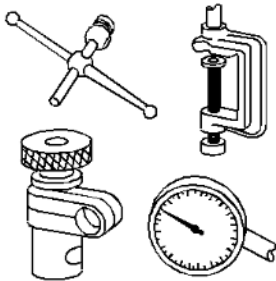
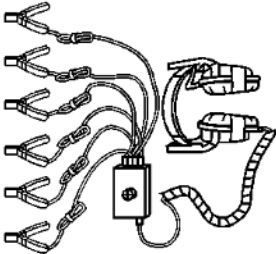
2007 SUSPENSION Suspension General Diagnosis - Avalanche, Escalade, Suburban, Tahoe & Yukon

- Collision damage

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

Special Tools

Illustration	Tool Number/ Description
	J 8001 Dial Indicator Set
	J 39570 Chassis Ear