

DIAGNOSIS AND TESTING

Wheels And Tires

Inspection and Verification

⚠ WARNING: If, while the vehicle is being serviced, only one wheel is raised off the ground and the rear axle is driven by the engine, the wheel on the ground could drive the vehicle off the stand or jack. Be sure both rear wheels are off the ground.

⚠ WARNING: Never run the engine with one wheel off the ground, for example, when changing a tire. The wheel(s) resting on the ground could cause the vehicle to move.

⚠ WARNING: Do not balance the wheels and tires while they are mounted on the vehicle. Possible tire disintegration or differential failure could result, causing personal injury and extensive component damage. Use off-vehicle wheel and tire balancer only.

Be sure to follow the warnings when carrying out inspection and verification.

Road Test

Verify the customer concern by carrying out a road test on a smooth road. If any vibrations are apparent, refer to Section 100-04.

To maximize tire performance, inspect for signs of incorrect inflation and uneven wear, which may indicate a need for balancing, rotation or front suspension alignment.

Correct tire pressure and driving techniques have an important influence on tire life. Heavy cornering, excessively rapid acceleration and unnecessary sharp braking increase tire wear.

Replacement tires must follow the recommended:

- tire sizes.
- speed rating.
- load range.
- tire construction type.

Use of any other tire size or type can seriously affect:

- ride.
- handling.
- speedometer/odometer calibration.
- vehicle ground clearance.

- tire clearance between the body and chassis.
- wheel bearing life.
- brake cooling.

New wheels need to be installed when vehicle's wheels:

- are bent.
- are cracked.
- are dented.
- are heavily corroded.
- are leaking.
- have elongated wheel hub bolt holes.
- have excessive lateral or radial runout.

Wheel and tire assemblies are attached by 5 wheel nuts.

It is mandatory to use only the tire sizes recommended on the tire chart attached to the vehicle. Larger or smaller tires can damage the vehicle, affect durability and require changing the speedometer calibration. Make sure wheel size and offsets match those recommended for the tire in use.

1. Inspect for signs of uneven wear that may indicate a need for balancing, rotation, front suspension alignment, damaged tie-rod or steering components.
2. Check tires for:
 - cuts.
 - stone bruises.
 - abrasions
 - blisters.
 - embedded objects.
3. Tread wear indicators are molded into the bottom of the tread grooves. Install a new tire when the indicator bands become visible.

DIAGNOSIS AND TESTING (Continued)**Symptom Chart****Symptom Chart**

Condition	Possible Sources	Action
<ul style="list-style-type: none"> Tires show excess wear on edge of tread 	<ul style="list-style-type: none"> Underinflated tires. Vehicle overloaded. High-speed cornering. Incorrect ride height. Incorrect wheel alignment. Incorrect tire rotation intervals. 	<ul style="list-style-type: none"> ADJUST air pressure in tires. RETURN vehicle. NOTIFY customer of overload condition. RETURN vehicle. NOTIFY customer of cause of condition. SET ride height. SET alignment to specification. REFER to Section 204-00. ADVISE customer of condition. ROTATE tires.
<ul style="list-style-type: none"> Tires show excess wear in center of tread 	<ul style="list-style-type: none"> Tires overinflated. 	<ul style="list-style-type: none"> ADJUST air pressure.
<ul style="list-style-type: none"> Other excessive tire wear problems 	<ul style="list-style-type: none"> Incorrect tire rotation intervals. Incorrect tire pressure. Loose or leaking shock absorbers. Incorrect wheel alignment. Loose, worn or damaged suspension components. Wheel and tire assembly out of balance. Excessive lateral or radial runout of wheel. 	<ul style="list-style-type: none"> ADVISE customer of condition. ROTATE tires. ADJUST pressure. TIGHTEN or INSTALL new shock absorbers as necessary. SET alignment to specification. REFER to Section 204-00. REFER to Section 204-00. BALANCE wheel and tire assembly. REFER to Section 100-04.
<ul style="list-style-type: none"> Wobble or shimmy 	<ul style="list-style-type: none"> Damaged wheel bearings. Loose or damaged suspension components. Bent wheel. Damaged tire. Loose wheel nuts. 	<ul style="list-style-type: none"> REFER to Section 204-00. INSTALL a new wheel as necessary. INSTALL a new tire as necessary. TIGHTEN to specification.
<ul style="list-style-type: none"> High-speed shake 	<ul style="list-style-type: none"> Wheel hub face/pilot/bolt circle runout. Tires/wheels. Wheel bearings. Suspension/steering linkage. Engine. Transmission. Brake discs/imbalance. 	<ul style="list-style-type: none"> REFER to Section 100-04.
<ul style="list-style-type: none"> Vehicle vibration 	<ul style="list-style-type: none"> Driveline — engine. Tires. 	<ul style="list-style-type: none"> REFER to Section 100-04.