3. Vehicle makes a low pitched rumbling noise when

- a. A low pitched rumbling noise is usually caused by a drive train related bearing and is most often associated with a wheel bearing which has been damaged or worn. The damage can be caused by excessive brake temperatures or physical contact with a pot hole or curb. Sometimes the noise will vary when turning. Left hand turns increase the load on the vehicle's right side, and right turns load the left side. A failed front wheel bearing may also cause a slight steering wheel vibration when turning. A bearing which exhibits noise must be replaced.
- b. Check the tire condition and balance. An internally damaged tire may cause failure symptoms similar to failed suspension parts. For diagnostic purposes, try a known good set of tires and replace defective tires.

4. Vehicle makes a squeaking noise over bumps

- a. Check the vehicle's ball joints for wear, damaged or leaking boots. Replace a ball joint if it is loose, the boot is damaged and leaking, or the ball joint is binding. When replacing suspension parts, check the vehicle for alignment.
- b. Check for seized or deteriorated bushings. Replace bushings that are worn or damaged and check the vehicle for alignment.
- c. Check for the presence of sway bar or stabilizer bar bushings which wrap around the bar. Inspect the condition of the bushings and replace if worn or damaged. Remove the bushing bracket and apply a thin layer of suspension grease to the area where the bushings wrap around the bar and reinstall the bushing brackets.

Vibrations

5. Vehicle vibrates when driven

- a. Check the road surface. Roads which have rough or uneven surfaces may cause unusual vibrations.
- b. Check the tire condition and balance. An internally damaged tire may cause failure symptoms similar to failed suspension parts. For diagnostic purposes, try a known good set of tires and replace defective tires immediately.
- c. Check for a worn Constant Velocity (CV-joint) joint, universal (U- joint) or flex joint and replace if loose, damaged or binding.
- d. Check for a loose, bent, or out-of-balance axle or drive shaft.
 Replace damaged or failed components.

NOTE: Diagnosing failures related to wheels, tires, steering and the suspension system can often times be accomplished with a careful and thorough test drive. Bearing noises are isolated by noting whether the noises or symptoms vary when turning left or right, or occur while driving a straight line. During a left hand turn, the vehicle's weight shifts to the right, placing more force on the right side bearings, such that if a right side wheel bearing is worn or damaged, the noise or vibration should increase during light-to-heavy acceleration. Conversely, on right hand turns, the vehicle tends to lean to the left, loading the left side bearings.

Knocking noises in the suspension when the vehicle is driven over rough roads, railroad tracks and speed bumps indicate worn suspension components such as bushings, ball joints or tie rod ends, or a worn steering system.

5. ELECTRICAL ACCESSORIES

5-A. Headlights

1. One headlight only works on high or low beam

a. Check for battery voltage at headlight electrical connector. If battery voltage is present, replace the headlight assembly or bulb if available separately. If battery voltage is not present, refer to the headlight wiring diagram to troubleshoot.

2. Headlight does not work on high or low beam

- a. Check for battery voltage and ground at headlight electrical connector. If battery voltage is present, check the headlight connector ground terminal for a proper ground. If battery voltage and ground are present at the headlight connector, replace the headlight assembly or bulb if available separately. If battery voltage or ground is not present, refer to the headlight wiring diagram to troubleshoot.
- b. Check the headlight switch operation. Replace the switch if the switch is defective or operates intermittently.

3. Headlight(s) very dim

a. Check for battery voltage and ground at headlight electrical connector. If battery voltage is present, trace the ground circuit for the headlamp electrical connector, then clean and repair as necessary.

If the voltage at the headlight electrical connector is significantly less than the voltage at the battery, refer to the headlight wiring diagram to troubleshoot and locate the voltage drop.

5-B. Tail. Running and Side Marker Lights

1. Tail light, running light or side marker light inoperative

- a. Check for battery voltage and ground at light's electrical connector. If battery voltage is present, check the bulb socket and electrical connector ground terminal for a proper ground. If battery voltage and ground are present at the light connector, but not in the socket, clean the socket and the ground terminal connector. If battery voltage and ground are present in the bulb socket, replace the bulb. If battery voltage or ground is not present, refer to the wiring diagram to troubleshoot for an open circuit.
- b. Check the light switch operation and replace if necessary.

2. Tail light, running light or side marker light works intermittently

- a. Check the bulb for a damaged filament, and replace if damaged.
- b Check the bulb and bulb socket for corrosion, and clean or replace the bulb and socket.