c. On vehicles with an automatic transmission, check the fluid level and condition. Top off or change the fluid and filter using the recommended replacement parts, lubricant type and amount. If the odor persists, transmission removal and disassembly will be necessary.

***2. Engine accelerates, but vehicle does not gain speed***

a. On vehicles with a manual transmission, check for a slipping or damaged clutch. For possible causes and additional information refer to section 2-C, condition number 1.
b. On vehicles with an automatic transmission, check the fluid level and condition. Top off or change the fluid and filter using the recommended replacement parts, lubricant type and amount. If the slipping continues, transmission removal and disassembly will be necessary.

## 3. BRAKE SYSTEM

### 3-A. Brake System Troubleshooting

***1. Brake pedal pulsates or shimmies when pressed***

a. Check wheel lug nut torque and tighten evenly to specification.
b. Check the brake rotor for trueness and thickness variations. Replace the rotor if it is too thin, warped, or if the thickness varies beyond specification. Some rotors can be machined; consult the manufacturer's specifications and recommendations before using a machined brake rotor.
c. Check the brake caliper or caliper bracket mounting bolt torque and inspect for looseness. Torque the mounting bolts and inspect for wear or any looseness, including worn mounting brackets, bushings and sliding pins.
d. Check the wheel bearing for looseness. If the bearing is loose, adjust if possible, otherwise replace the bearing.

***2. Brakes make a squealing noise***

a. Check the brake rotor for the presence of a ridge on the outer edge; if present, remove the ridge or replace the brake rotor and brake pads.
b. Check for debris in the brake lining material, clean and reinstall.
c. Check the brake linings for wear and replace the brake linings if wear is approaching the lining wear limit.
d. Check the brake linings for glazing. Inspect the brake drum or rotor surface and replace, along with the brake linings, if the surface is not smooth or even.
e. Check the brake pad or shoe mounting areas for a lack of lubricant or the presence of surface rust. Clean and lubricate with a recommended high temperature brake grease.

***3. Brakes make a grinding noise***

a. Check the brake linings and brake surface areas for severe wear or damage. Replace worn or damaged parts.
b. Check for a seized or partially seized brake causing premature or uneven brake wear, excessive heat and brake rotor or drum damage. Replace defective parts and inspect the wheel bearing condition, which could have been damaged due to excessive heat.

***4. Vehicle pulls to one side during braking***

a. Check for air in the brake hydraulic system. Inspect the brake hydraulic seals, fluid lines and related components for fluid leaks. Remove the air from the brake system by bleeding the brakes. Be sure to use fresh brake fluid that meets the manufacturer's recommended standards.
b. Check for an internally restricted flexible brake hydraulic hose. Replace the hose and flush the brake system.
c. Check for a seizing brake hydraulic component such as a brake caliper. Check the caliper piston for surface damage such as rust, and measure for out-of-round wear and caliper-to-piston clearance. Overhaul or replace failed parts and flush the brake system.
d. Check the vehicle's alignment and inspect for suspension wear. Replace worn bushings, ball joints and set alignment to the manufacturer's specifications.
e. If the brake system uses drum brakes front or rear, check the brake adjustment. Inspect for seized adjusters and clean or replace, then properly adjust.

***5. Brake pedal feels spongy or has excessive travel***

a. Check the brake fluid level and condition. If the fluid is contaminated or has not been flushed every two years, clean the master cylinder reservoir, and bleed and flush the brakes using fresh brake fluid that meets the manufacturer's recommended standards.
b. Check for a weak or damaged flexible brake hydraulic hose. Replace the hose and flush the brake system.
c. If the brake system uses drum brakes front or rear, check the brake adjustment. Inspect for seized adjusters and clean or replace, then properly adjust.

***6. Brake pedal feel is firm, but brakes lack sufficient stopping power or fade***

a. Check the operation of the brake booster and brake booster check valve. Replace worn or failed parts.
b. Check brake linings and brake surface areas for glazing and replace worn or damaged parts.
c. Check for seized hydraulic parts and linkages, and clean or replace as needed.

***7. Vehicle has excessive front end dive or locks rear brakes too easily***

a. Check for worn, failed or seized brake proportioning valve and replace the valve.
b. Check for a seized, disconnected or missing spring or linkage for the brake proportioning valve. Replace missing parts or repair as necessary.

***8. Brake pedal goes to floor when pressed and will not pump up***

a. Check the brake hydraulic fluid level and inspect the fluid lines and seals for leakage. Repair or replace leaking components, then bleed and flush the brake system using fresh brake fluid that meets the manufacturer's recommended standards.